

## Nuclides Analysis Result of the Radioactive Materials in the Seawater < Coast, Fukushima Daiichi Nuclear Power Station >

(Data summarized on February 5)

Place of Sampling	North of Unit 5-6 Discharge Channel at Fukushima Daiichi NPS (Approx. 30m North of Unit 5-6 Discharge Channel)		Around South Discharge Channel of Fukushima Daiichi NPS (Approx. 1.3km South of Unit 1-4 Discharge Channel)		Density Limit Specified by the Reactor Regulation (Bq/L) (The density limit in the water outside the surrounding monitored areas is provided in section 6 of Appendix 2.)
	Time of Sampling		Time of Sampling		
Detected Nuclides (Half-life)	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	
I-131 (Approx. 8 days)	ND	-	ND	-	40
Cs-134 (Approx. 2 years)	ND	-	ND	-	60
Cs-137 (Approx. 30 years)	ND	-	ND	-	90

\* The density specified by the Reactor Regulation is converted from Bq/cm<sup>3</sup> to Bq/L.

\* Data of other nuclides is under evaluation.

\* In the case of more than 2 nuclides, the sum of scaling factors to density limits is compared to 1.

\* "ND" indicates that the measurement result is below the detection limit.

I-131: Approx. 0.42Bq/L, Cs-134: Approx. 1.1Bq/L, Cs-137: Approx. 1.4Bq/L

As the detection limit may vary depending on the detectors and sample properties, there are cases where nuclides below the detection limit are detected.

## Nuclides Analysis Result of the Radioactive Materials in the Seawater < Offshore 1/2 >

(Data summarized on February 5)

Place of Sampling (Place No.)	3km Offshore of Odaka Ward (T-14)				15km Offshore of Fukushima Daiichi NPS (T-5)				15km Offshore of Fukushima Daiichi NPS (T-5)				Density Limit Specified by the Reactor Regulation (Bq/L)
	Upper Layer		Lower Layer		Upper Layer		Lower Layer		Upper Layer		Lower Layer		
Time of Sampling	Dec 25, 2012 9:01 AM		Dec 25, 2012 9:01 AM		Dec 20, 2012 8:12 AM		Dec 20, 2012 8:12 AM		Dec 27, 2012 8:34 AM		Dec 27, 2012 8:34 AM		(The density limit in the water outside the surrounding monitored areas is provided in section 6 of Appendix 2.)
Detected Nuclides (Half-life)	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	
Cs-134 (Approx. 2 years)	0.0049	0.00	0.0071	0.00	0.0064	0.00	0.0089	0.00	0.0028	0.00	0.0079	0.00	
Cs-137 (Approx. 30 years)	0.012	0.00	0.012	0.00	0.012	0.00	0.017	0.00	0.0068	0.00	0.016	0.00	90

Place of Sampling (Place No.)	3km Offshore of Iwasawa Shore (T-11)				3km Offshore of Iwasawa Shore (T-11)				1km Offshore of Nida River (T-13-1)				Density Limit Specified by the Reactor Regulation (Bq/L)
	Upper Layer		Lower Layer		Upper Layer		Lower Layer		Upper Layer		Lower Layer		
Time of Sampling	Dec 20, 2012 9:38 AM		Dec 20, 2012 9:38 AM		Dec 27, 2012 10:01 AM		Dec 27, 2012 10:01 AM		Dec 20, 2012 7:15 AM		Dec 20, 2012 7:15 AM		(The density limit in the water outside the surrounding monitored areas is provided in section 6 of Appendix 2.)
Detected Nuclides (Half-life)	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	
Cs-134 (Approx. 2 years)	0.0083	0.00	0.0091	0.00	0.020	0.00	0.0042	0.00	0.015	0.00	0.021	0.00	
Cs-137 (Approx. 30 years)	0.015	0.00	0.016	0.00	0.037	0.00	0.0086	0.00	0.027	0.00	0.036	0.00	90

\* The density specified by the Reactor Regulation is converted from Bq/cm<sup>3</sup> to Bq/L.

\* In the case of more than 2 nuclides, the sum of scaling factors to density limits is compared to 1.

\* Analysis results by detail analysis (Phosphomolybdic acid ammonium adsorption sampling method) are noted.

\* Analyzed by: THE GENERAL ENVIRONMENTAL TECHNOS Co., LTD.

## Nuclides Analysis Result of the Radioactive Materials in the Seawater < Offshore 2/2 >

(Data summarized on February 5)

Place of Sampling (Place No.)	3km Offshore of Soma (T-22)				5km Offshore of Kashima (T-MA)				Around 1km Offshore of Ota River (T-S1)				Density Limit Specified by the Reactor Regulation (Bq/L)
	Upper Layer		Lower Layer		Upper Layer		Lower Layer		Upper Layer		Lower Layer		
Time of Sampling	Dec 20, 2012 6:02 AM		Dec 20, 2012 6:02 AM		Dec 20, 2012 6:39 AM		Dec 20, 2012 6:39 AM		Dec 19, 2012 6:07 AM		Dec 19, 2012 6:07 AM		(The density limit in the water outside the surrounding monitored areas is provided in section 6 of Appendix 2.)
Detected Nuclides (Half-life)	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	
Cs-134 (Approx. 2 years)	0.016	0.00	0.020	0.00	0.010	0.00	0.012	0.00	0.019	0.00	0.025	0.00	
Cs-137 (Approx. 30 years)	0.033	0.00	0.034	0.00	0.020	0.00	0.022	0.00	0.034	0.00	0.044	0.00	90

Place of Sampling (Place No.)	Around 3km Offshore of Odaka Ward (T-S2)				Arounmd 15km Offshore of Odaka Ward (T-B1)				Around 18km Offshore of Ukedo River (T-B2)				Density Limit Specified by the Reactor Regulation (Bq/L)
	Upper Layer		Lower Layer		Upper Layer		Lower Layer		Upper Layer		Lower Layer		
Time of Sampling	Dec 19, 2012 6:38 AM		Dec 19, 2012 6:38 AM		Dec 21, 2012 7:12 AM		Dec 21, 2012 7:12 AM		Dec 21, 2012 6:35 AM		Dec 21, 2012 6:35 AM		(The density limit in the water outside the surrounding monitored areas is provided in section 6 of Appendix 2.)
Detected Nuclides (Half-life)	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	Density of Sample (Bq/L)	Scaling Factor ( / )	
Cs-134 (Approx. 2 years)	0.012	0.00	0.011	0.00	0.0063	0.00	0.0058	0.00	0.0096	0.00	0.0068	0.00	
Cs-137 (Approx. 30 years)	0.022	0.00	0.022	0.00	0.012	0.00	0.0096	0.00	0.017	0.00	0.015	0.00	90

\* The density specified by the Reactor Regulation is converted from Bq/cm<sup>3</sup> to Bq/L.

\* In the case of more than 2 nuclides, the sum of scaling factors to density limits is compared to 1.

\* Analysis results by detail analysis (Phosphomolybdic acid ammonium adsorption sampling method) are noted.

\* Analyzed by: THE GENERAL ENVIRONMENTAL TECHNOS Co., LTD.

## Analysis Result of Pu in the Seawater

### 1. Measurement Result:

(Unit: Bq/L)

Place of Sampling	Date	Pu-238	Pu-239+Pu-240
1F, North of Unit 5-6 Discharge Channel	December 4, 2012	N.D. [ $<7.3 \times 10^{-6}$ ]	N.D. [ $<8.1 \times 10^{-6}$ ]
1F, Around South Discharge Channel		N.D. [ $<5.8 \times 10^{-6}$ ]	N.D. [ $<6.2 \times 10^{-6}$ ]
The range of the past measurement results obtained in the ocean near Fukushima Daiichi and Daini Nuclear Power Stations (FY2001 - FY2008)*		-	ND $\sim 1.3 \times 10^{-5}$

[ ] shows below the detection limit.

\*: Source "Report on the environmental radioactivity measurement around the Nuclear Power Plant (2008)", Committee on the safety technology of Nuclear Power Plants in Fukushima.

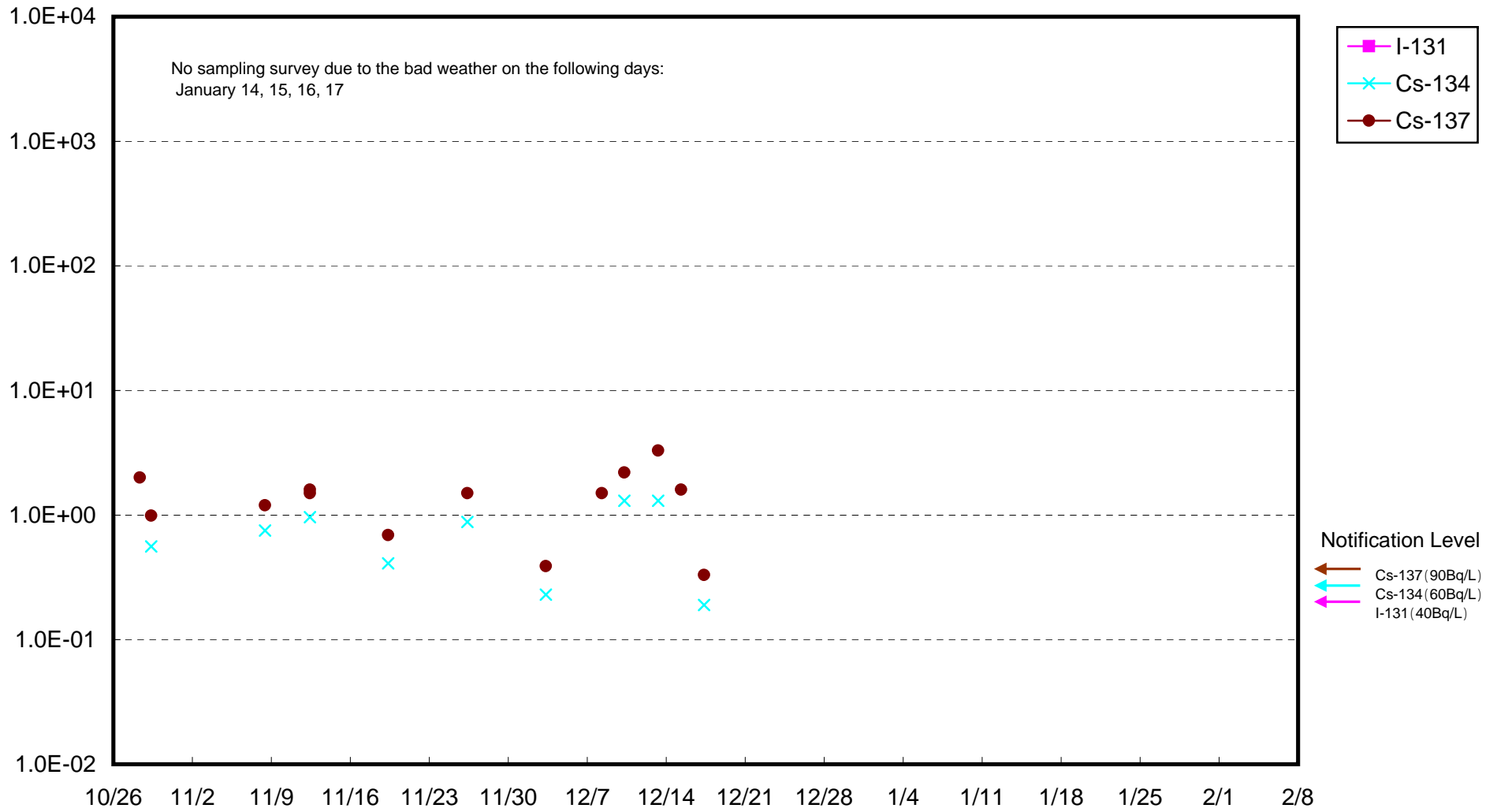
### 2. Analytical Institution: Japan Chemical Analysis Center

### 3. Evaluation:

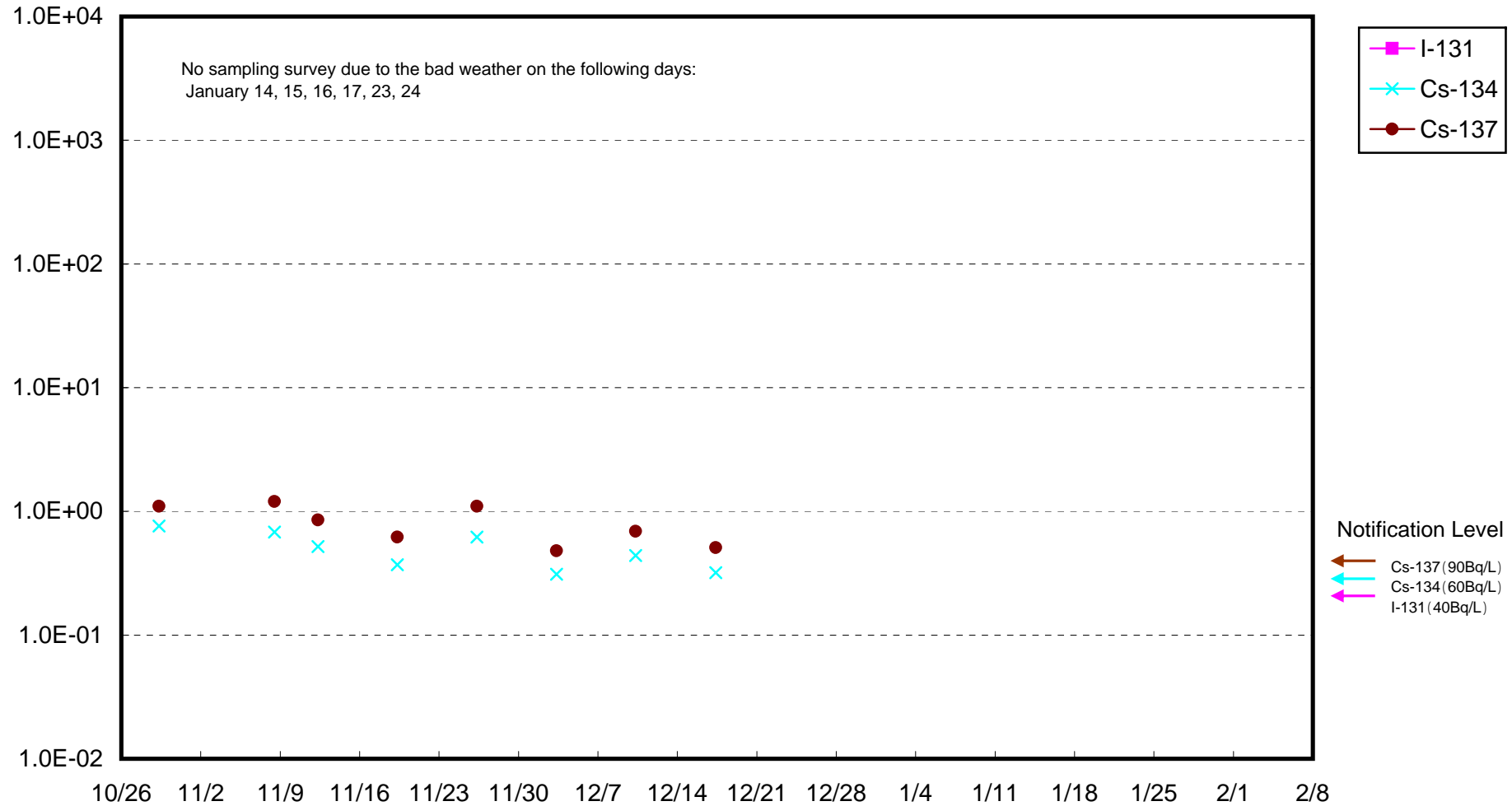
Pu-238 and Pu-239+Pu-240 were not detected in the sample collected this time.

End

Radioactivity Density of the Seawater at 1F Units 5-6 North Discharge Channel (Bq/L)



### Radioactivity Density of the Seawater at 1F South Discharge Channel (Bq/L)

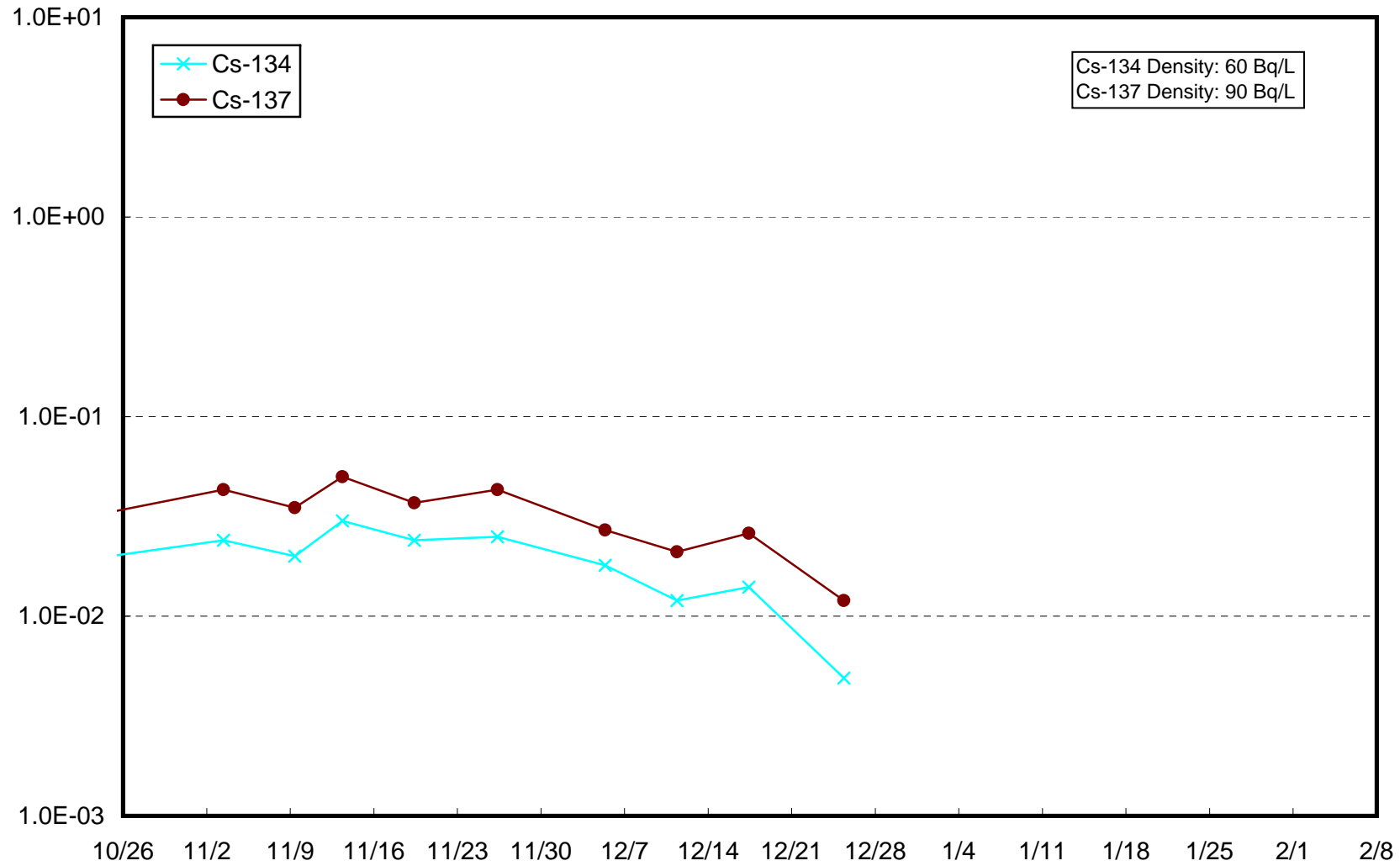


Sampling was conducted at around South Discharge Channel of Fukushima Daiichi NPS (approx. 330m south of Units 1-4 Discharge Channel) until November 25, 2012.

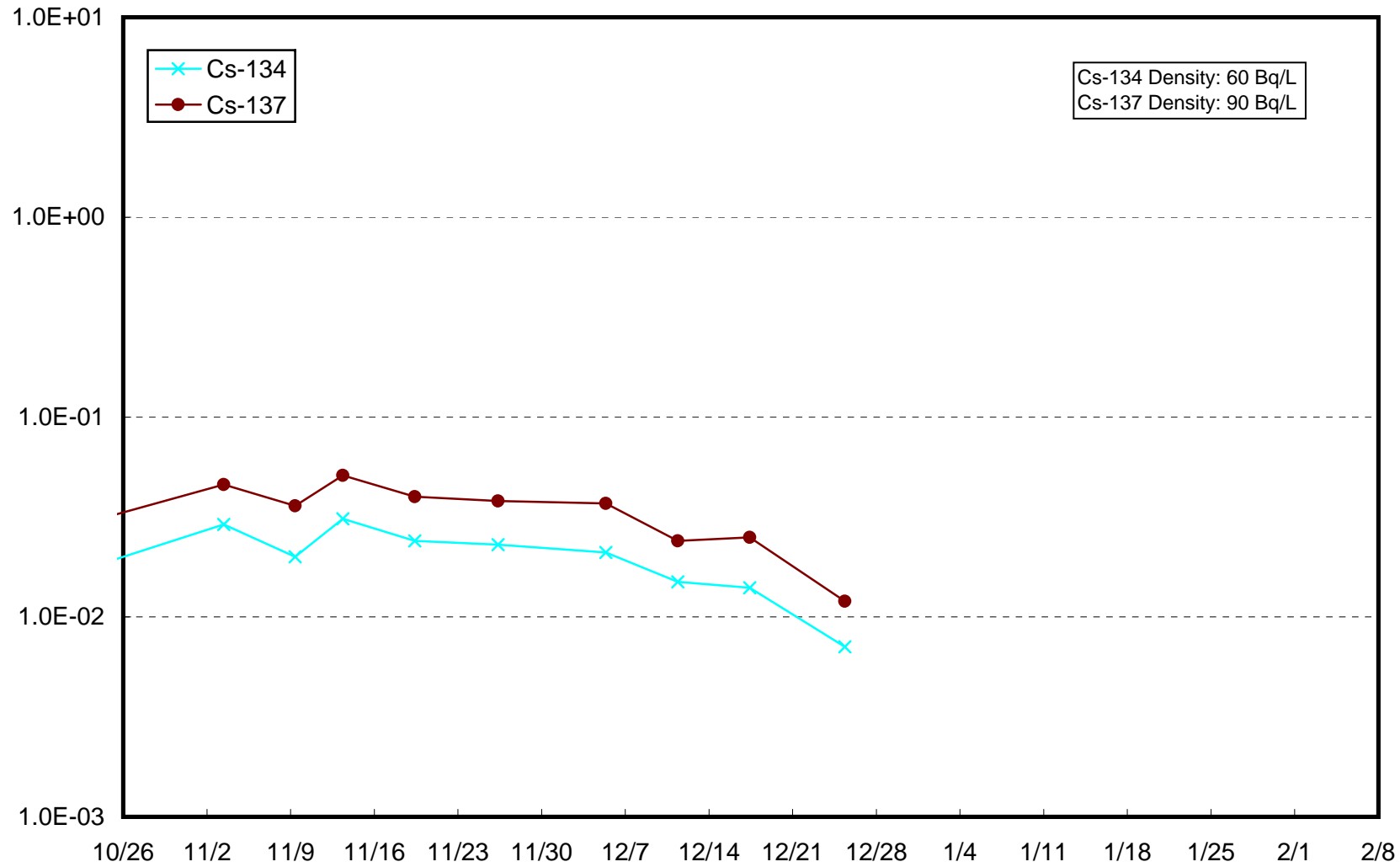
**Notification Level**

- ← Cs-137 (90Bq/L)
- ← Cs-134 (60Bq/L)
- ← I-131 (40Bq/L)

Radioactivity Density of the Seawater at 3km Offshore of Odaka Ward (T-14) Upper Layer (Bq/L)

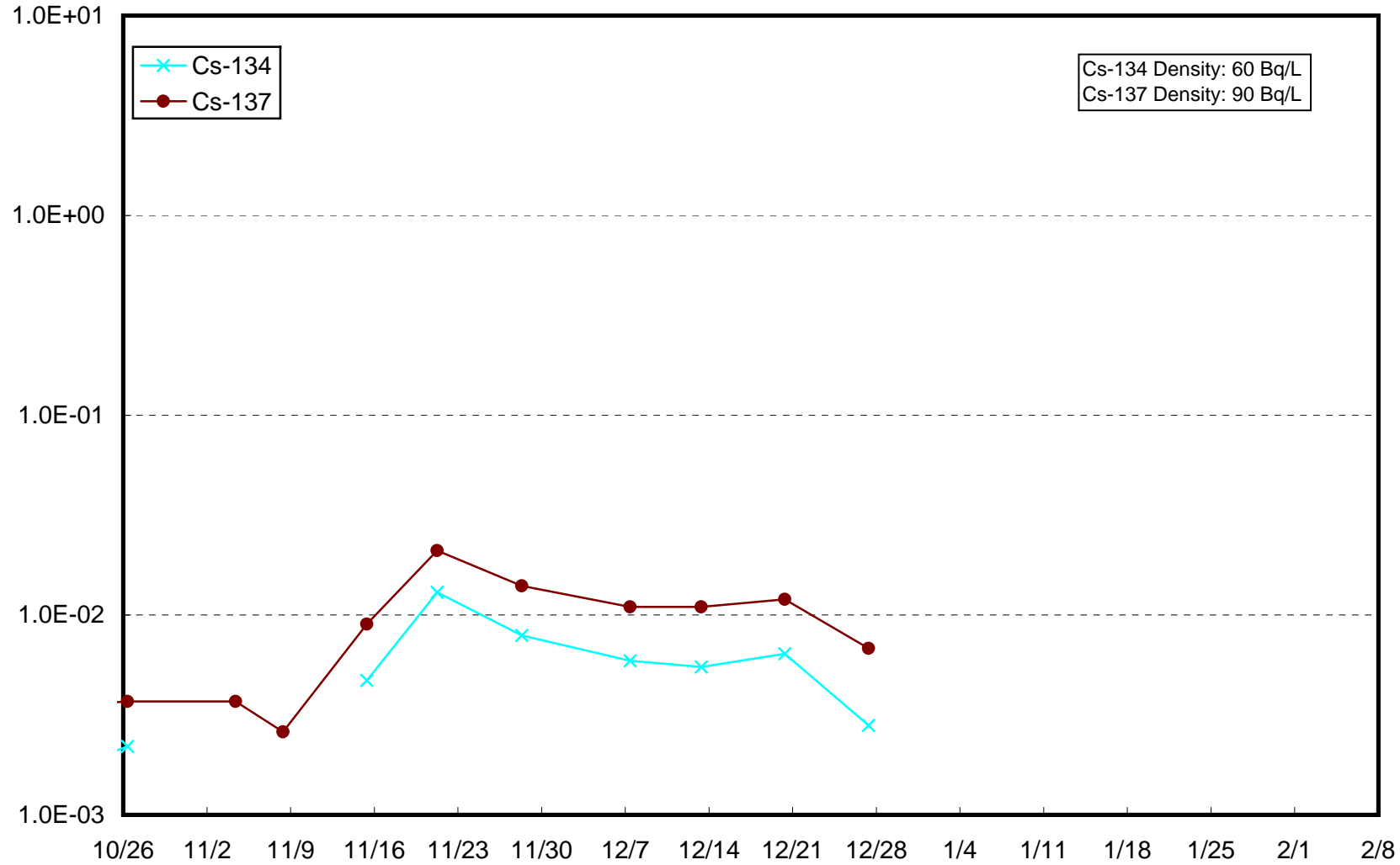


Radioactivity Density of the Seawater at 3km Offshore of Odaka Ward (T-14) Lower Layer (Bq/L)

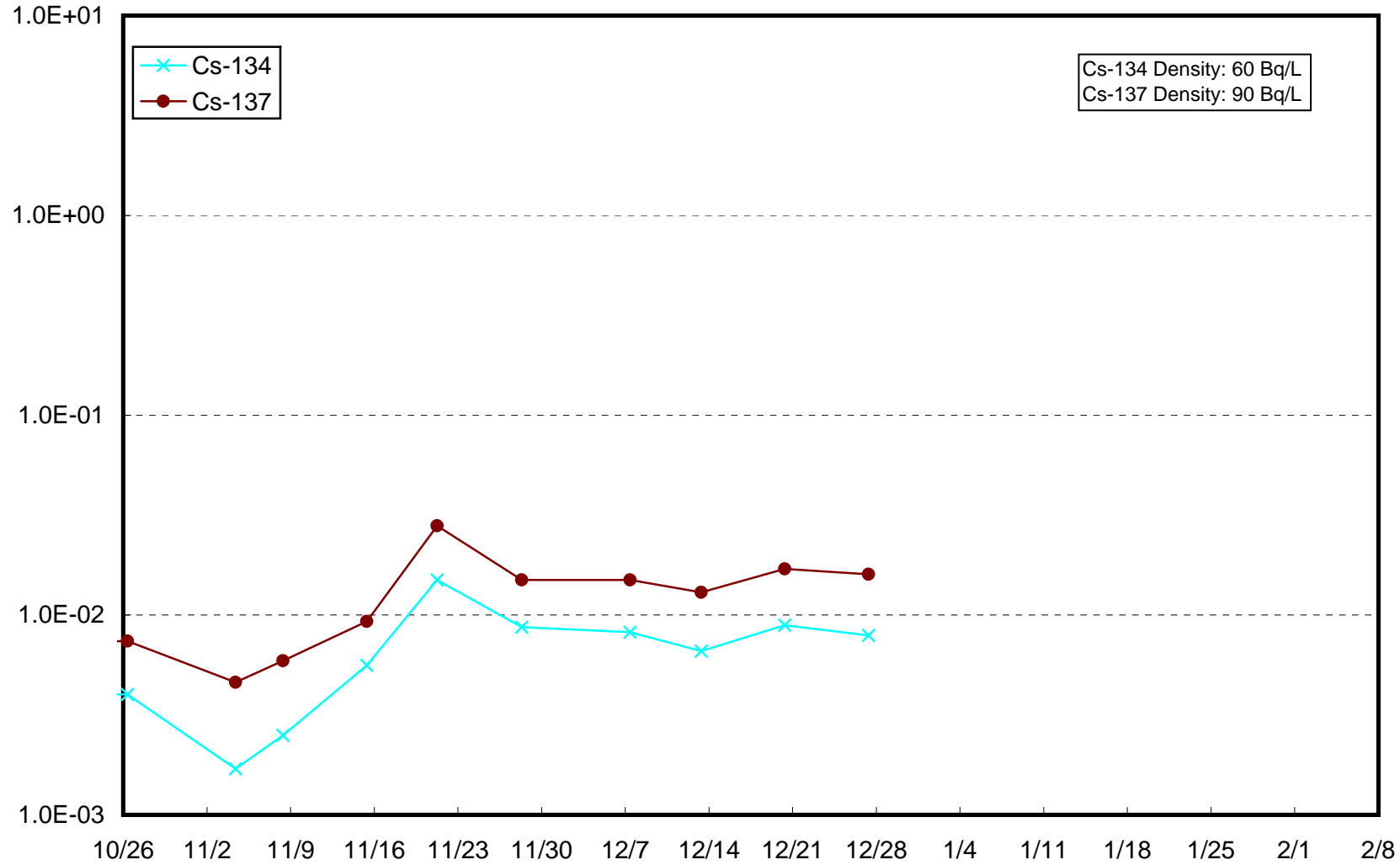




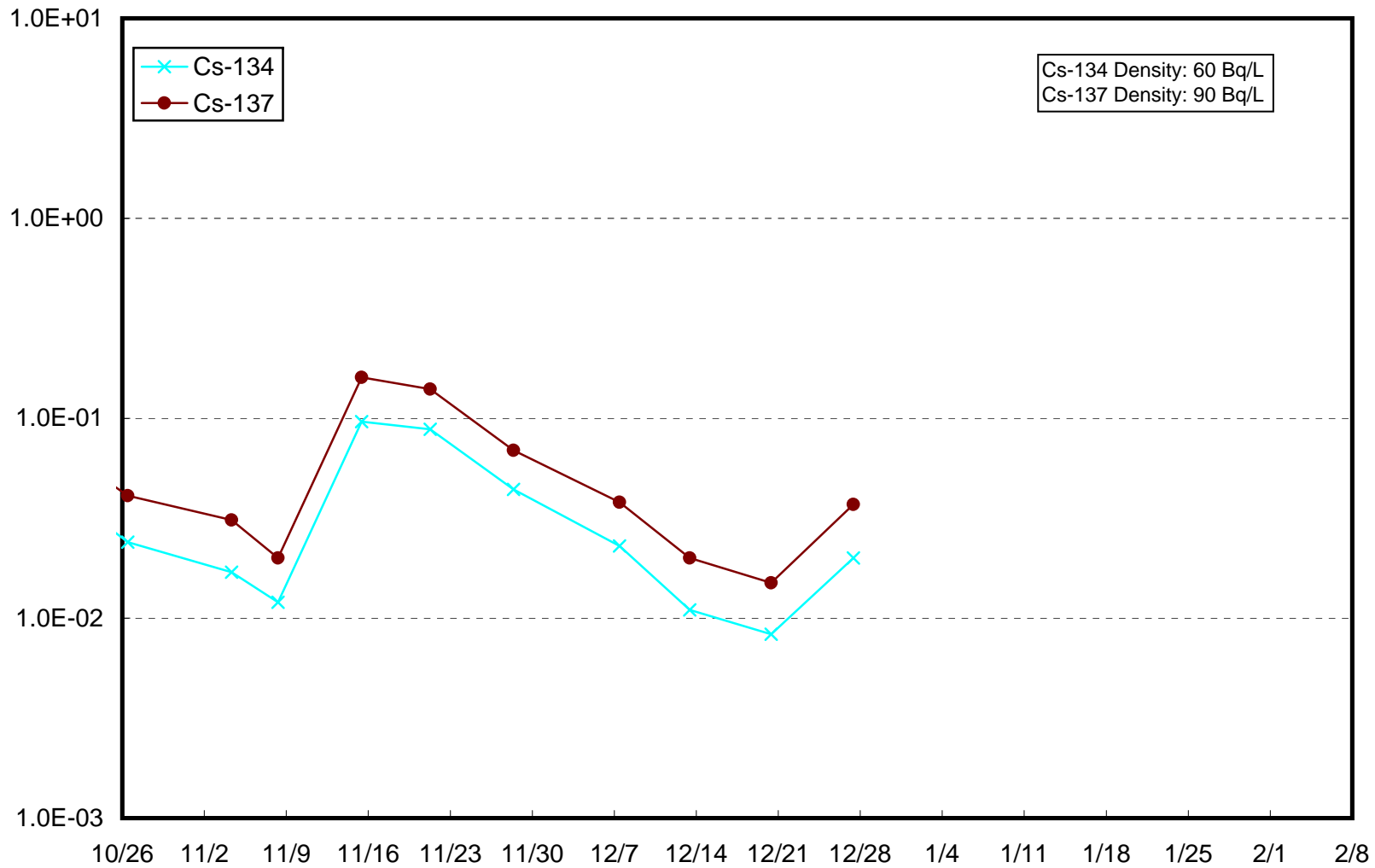
Radioactivity Density of the Seawater at 15km Offshore of Fukushima Daiichi NPS (T-5) Upper Layer (Bq/L)



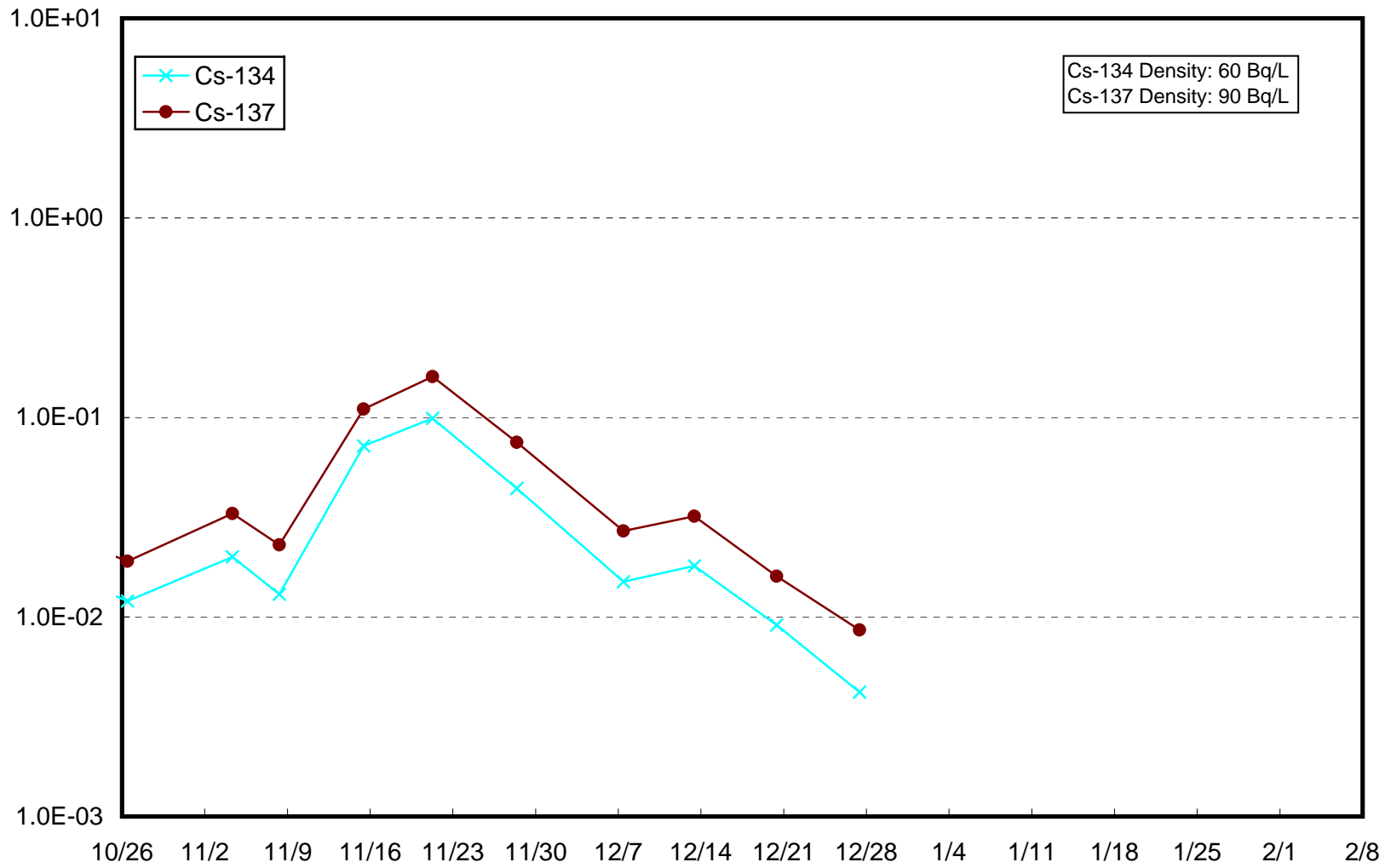
Radioactivity Density of the Seawater at 15km Offshore of Fukushima Daiichi NPS (T-5) Lower Layer (Bq/L)



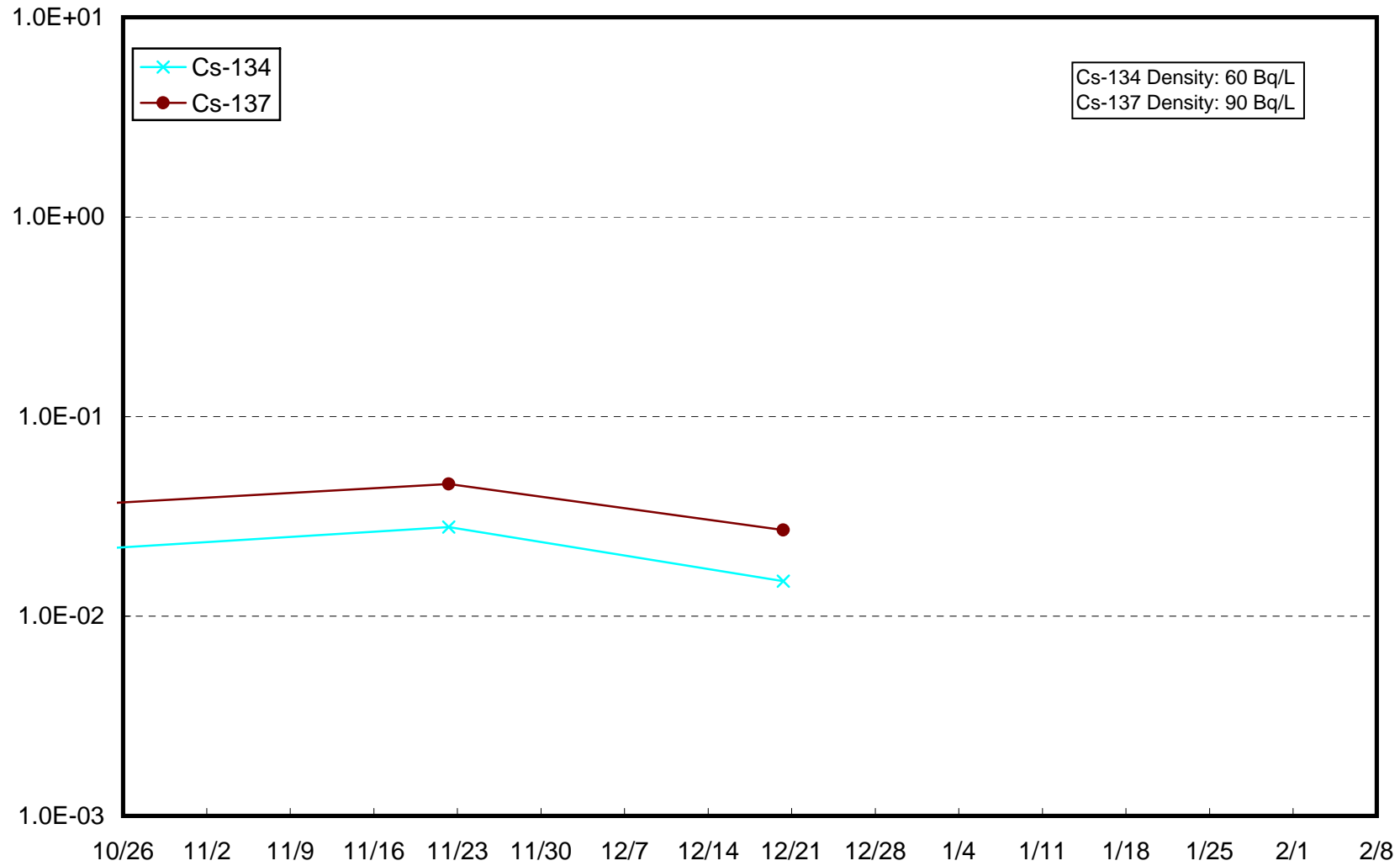
Radioactivity Density of the Seawater at 3km Offshore of Iwasawa Shore (T-11) Upper Layer (Bq/L)



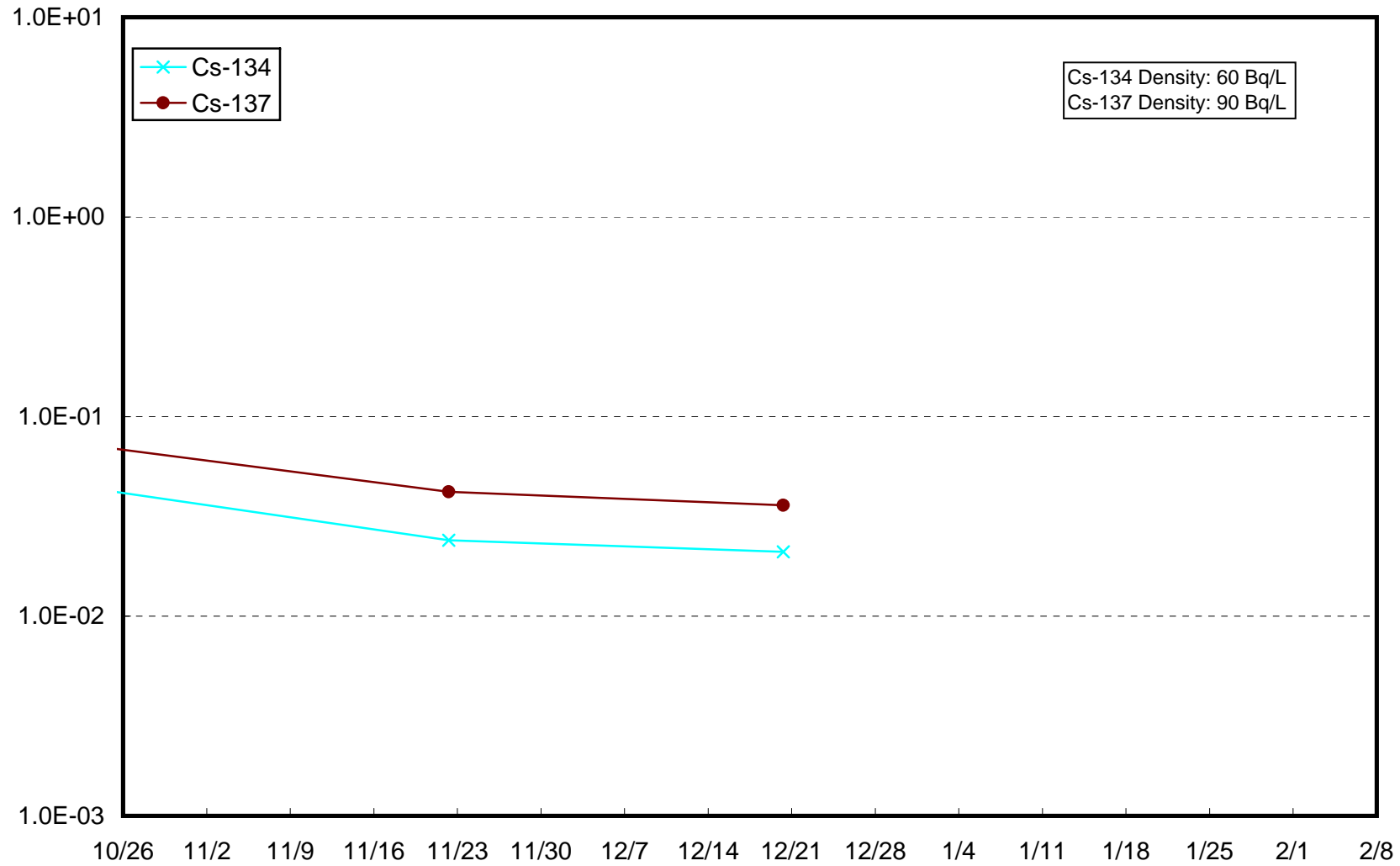
Radioactivity Density of the Seawater at 3km Offshore of Iwasawa Shore (T-11) Lower Layer (Bq/L)



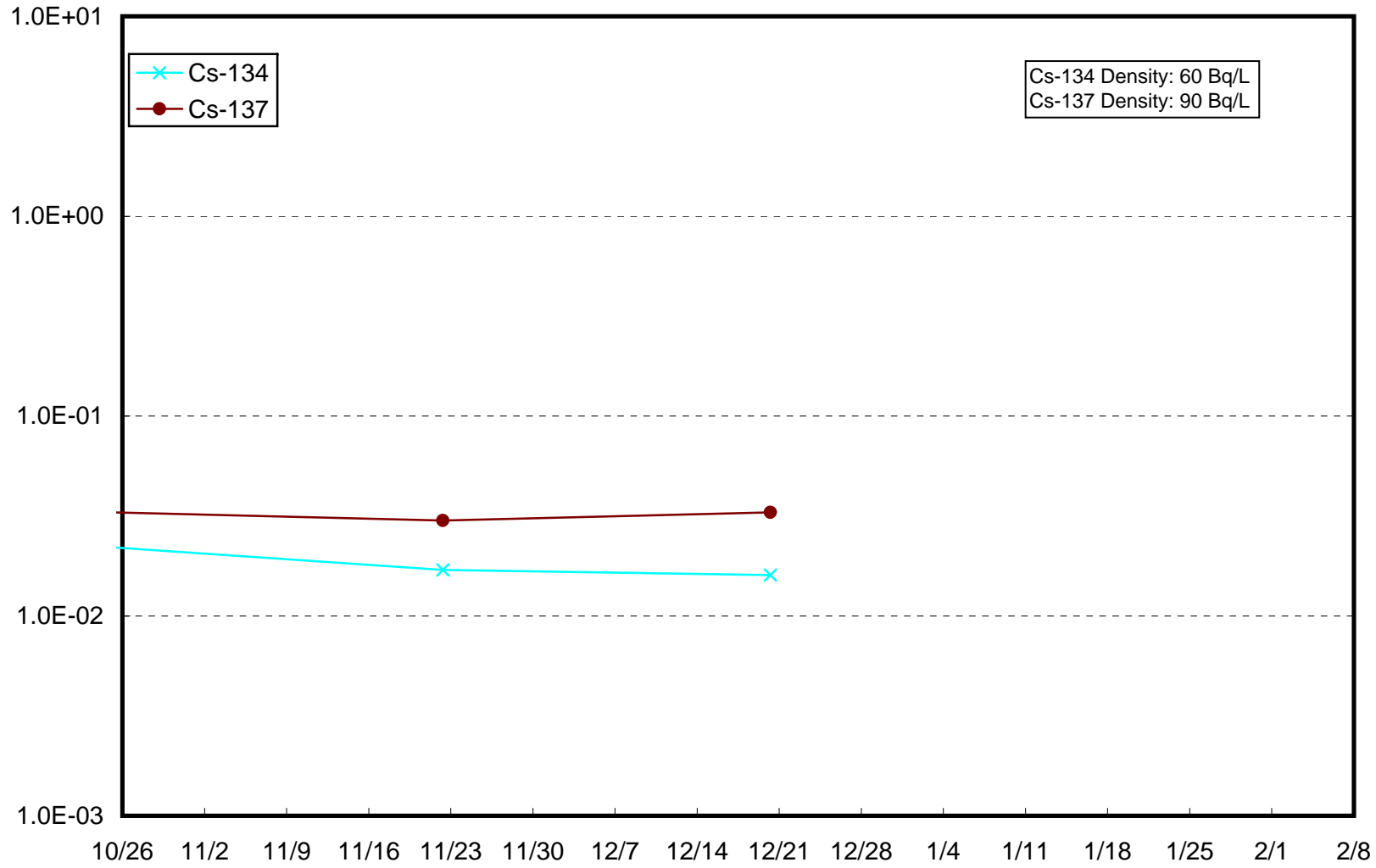
Radioactivity Density of the Seawater at 1km Offshore of Nida River (T-13-1) Upper Layer (Bq/L)



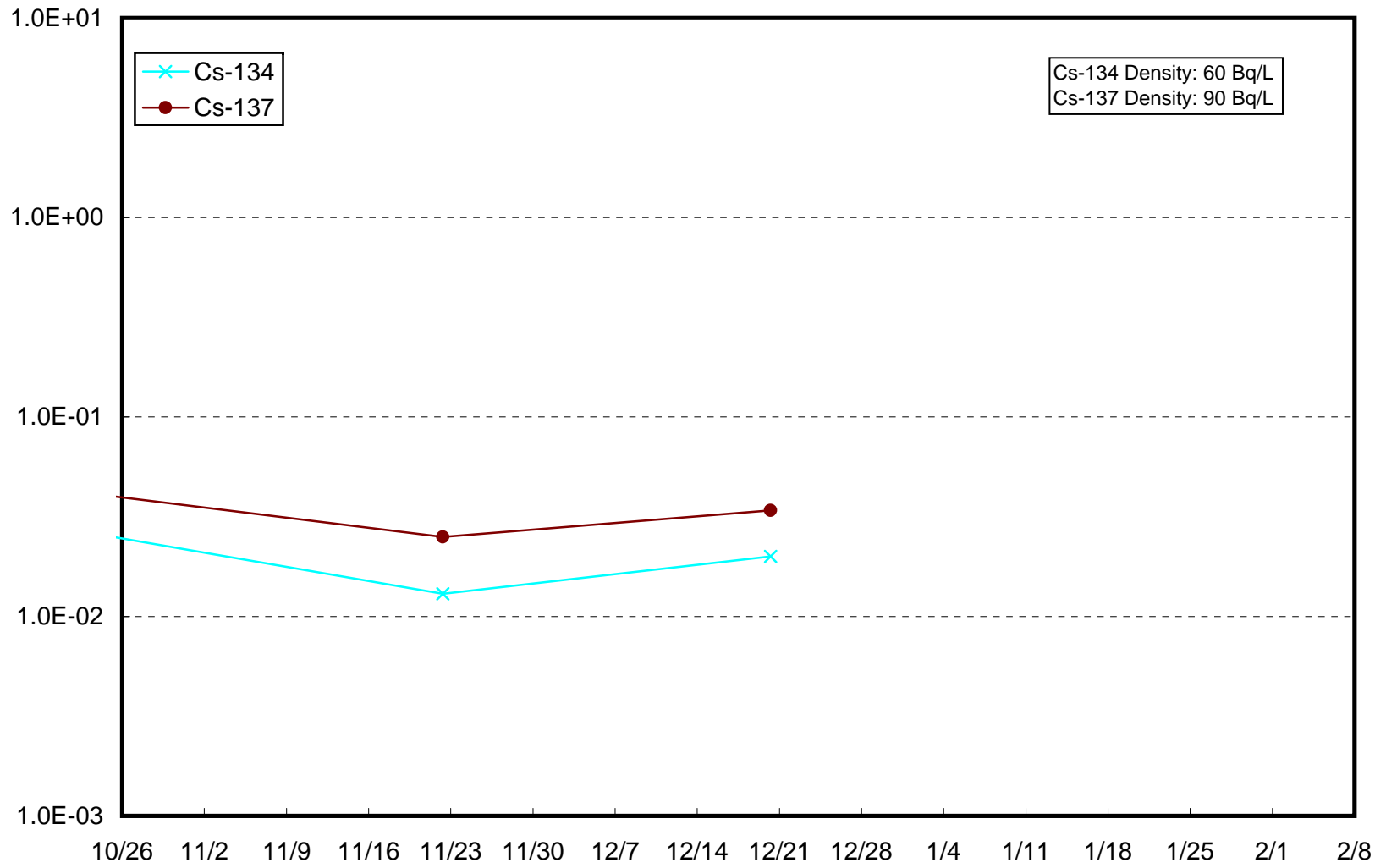
Radioactivity Density of the Seawater at 1km Offshore of Nida River (T-13-1) Lower Layer (Bq/L)



Radioactivity Density of the Seawater at 3km Offshore of Soma (T-22) Upper Layer (Bq/L)

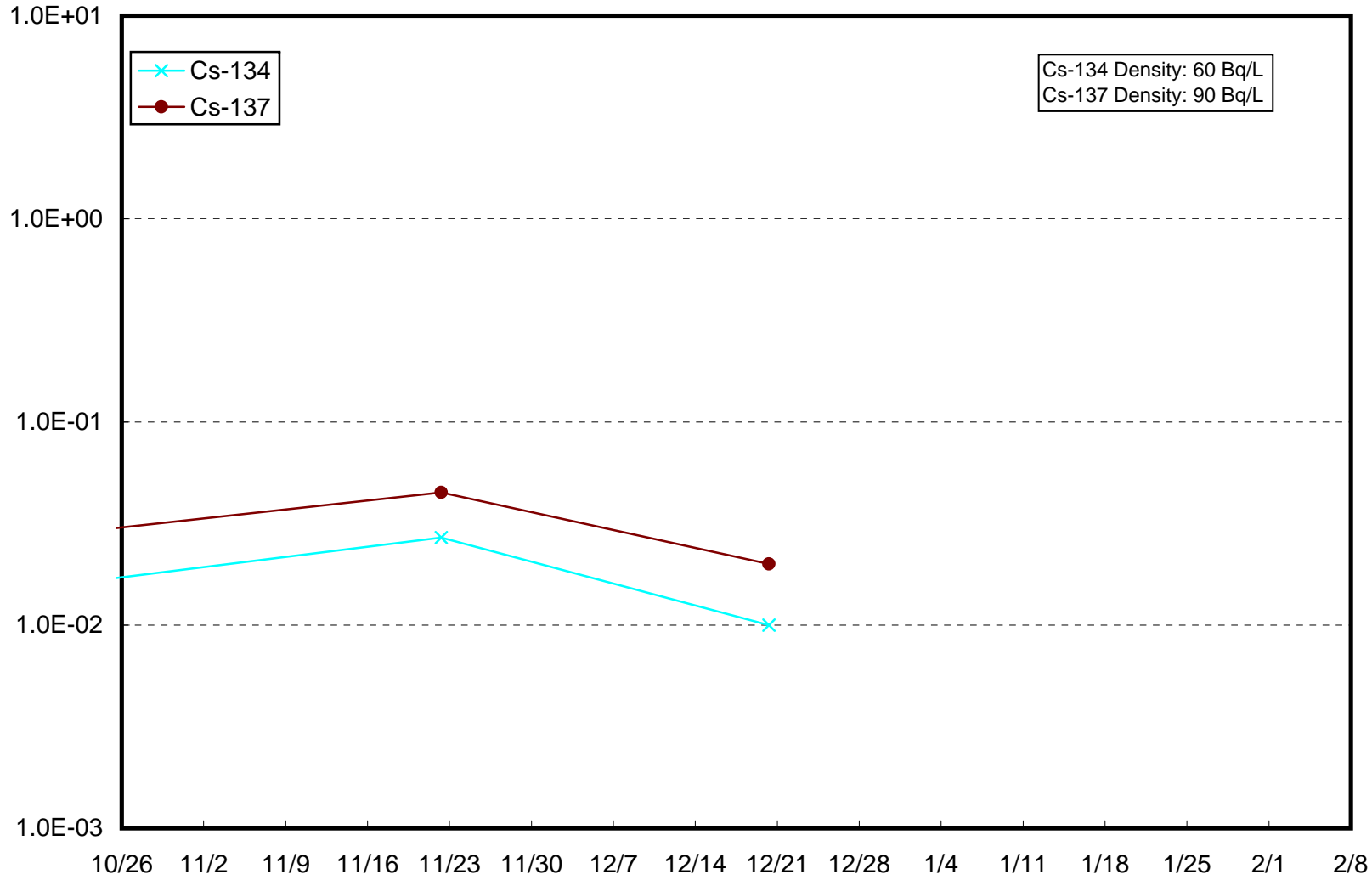


Radioactivity Density of the Seawater at 3km Offshore of Soma (T-22) Lower Layer (Bq/L)

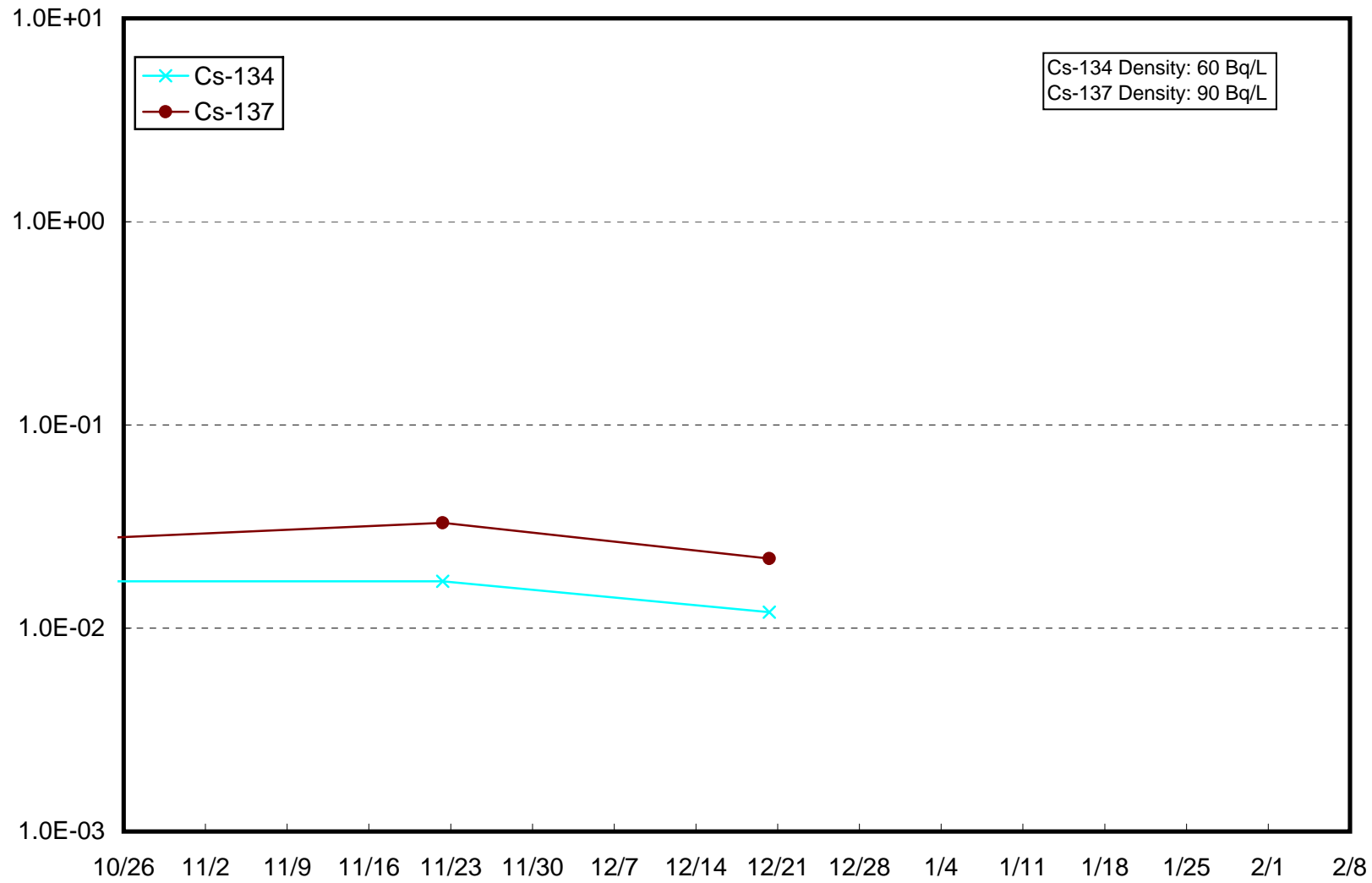




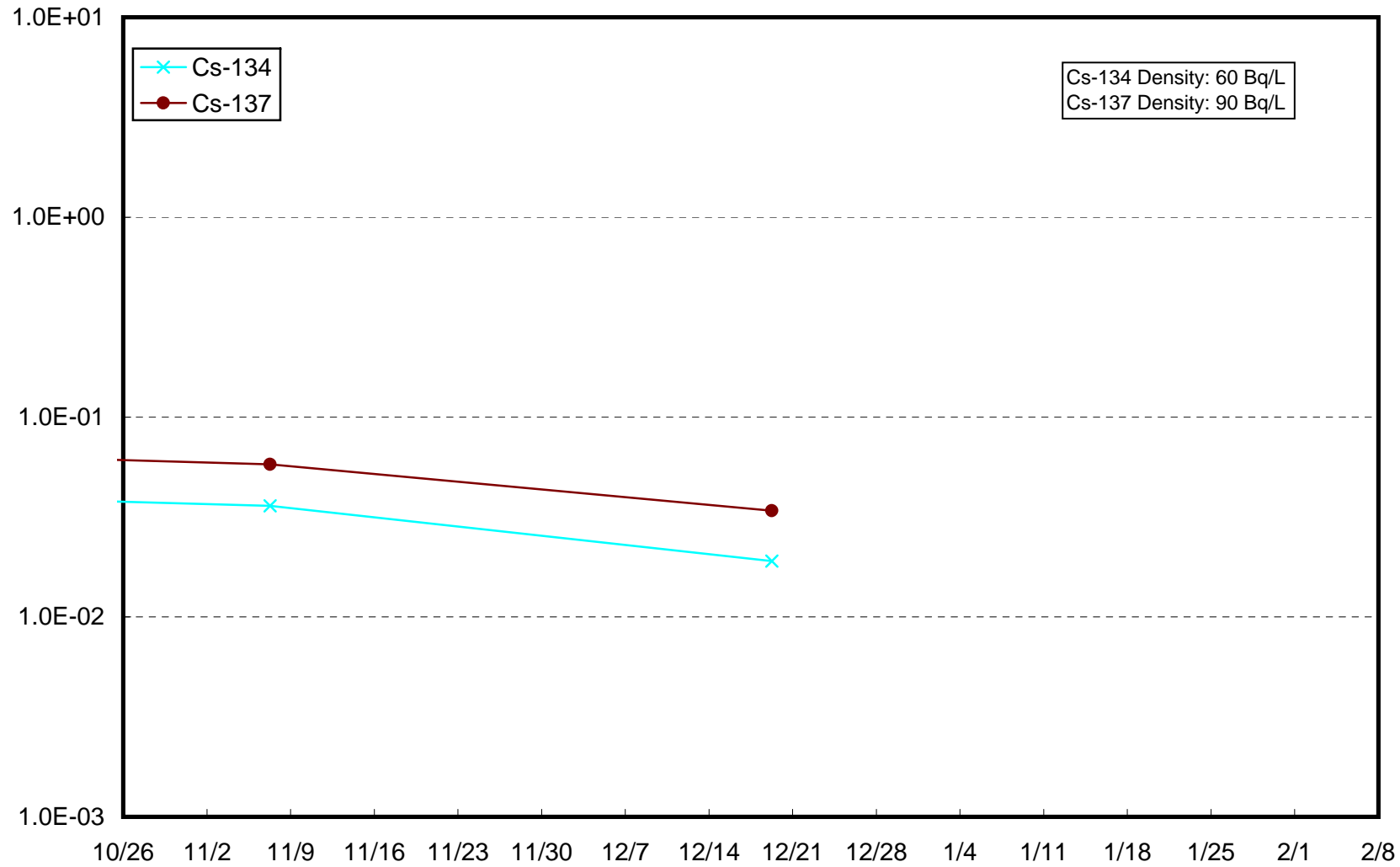
Radioactivity Density of the Seawater at 5km Offshore of Kashima (T-MA) Upper Layer (Bq/L)



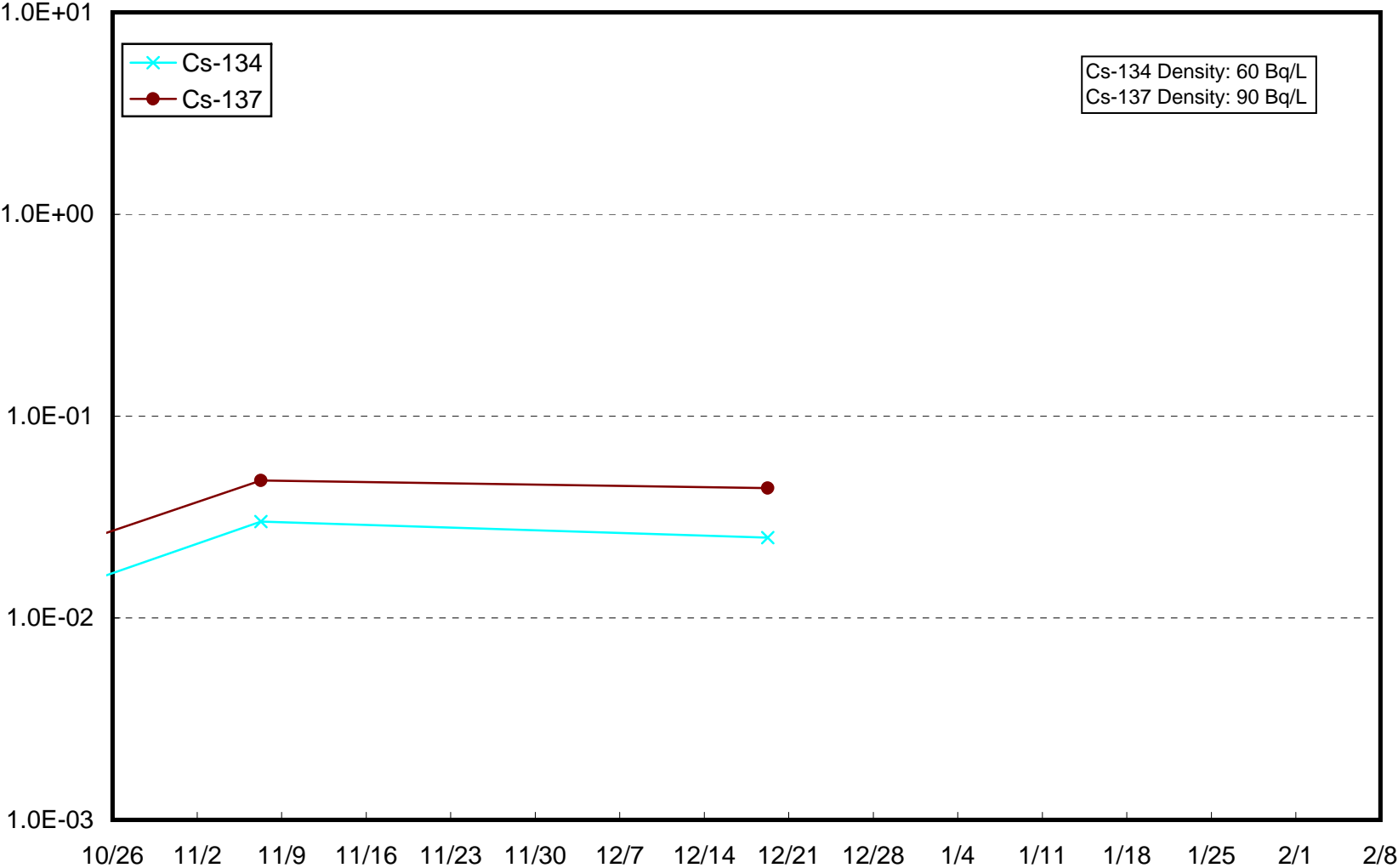
Radioactivity Density of the Seawater at 5km Offshore of Kashima (T-MA) Lower Layer (Bq/L)



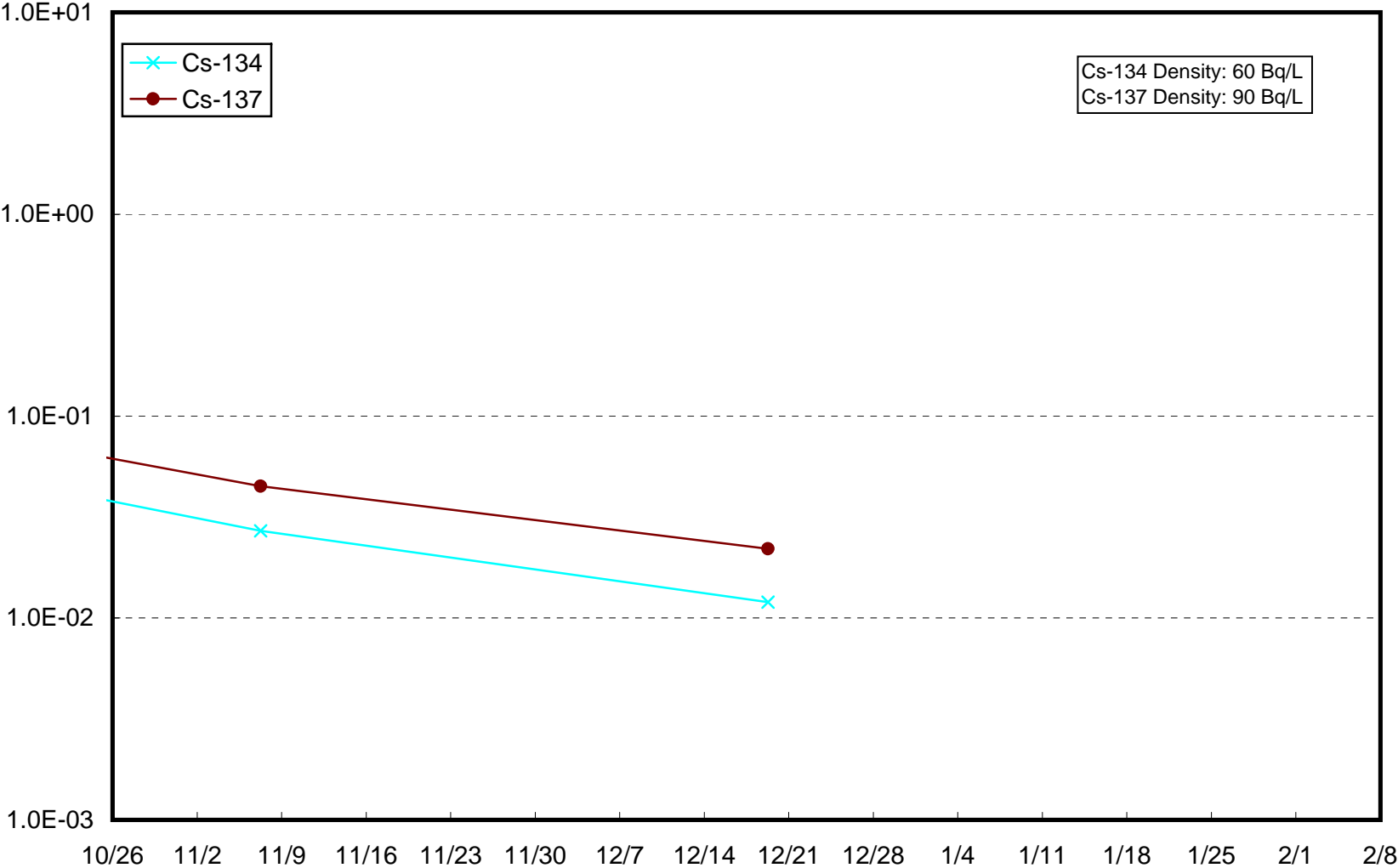
Radioactivity Density of the Seawater Around 1km Offshore of Ota River (T-S1) Upper Layer (Bq/L)



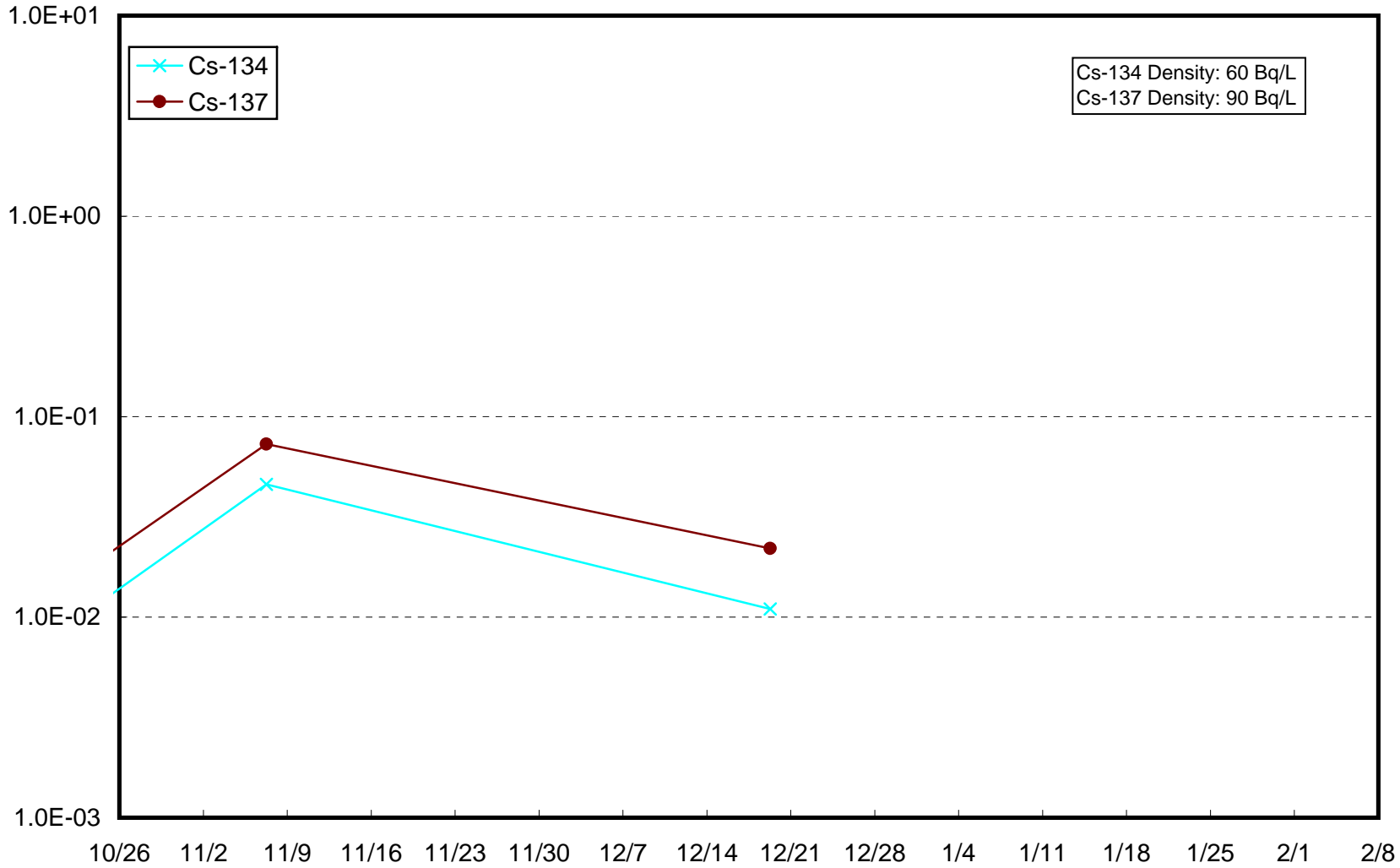
Radioactivity Density of the Seawater Around 1km Offshore of Ota River (T-S1) Lower Layer (Bq/L)



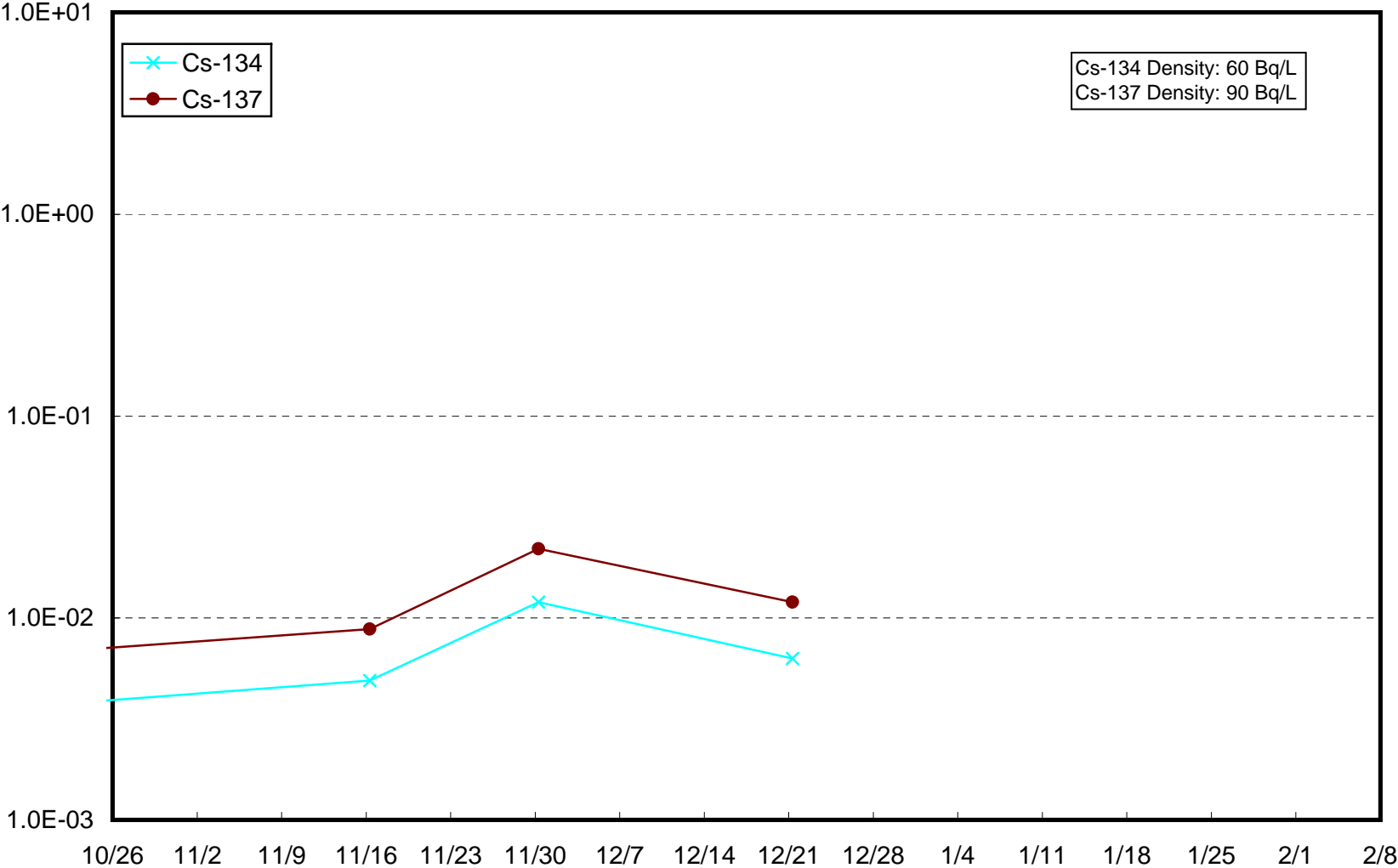
Radioactivity Density of the Seawater Around 3km Offshore of Odaka Ward (T-S2) Upper Layer (Bq/L)



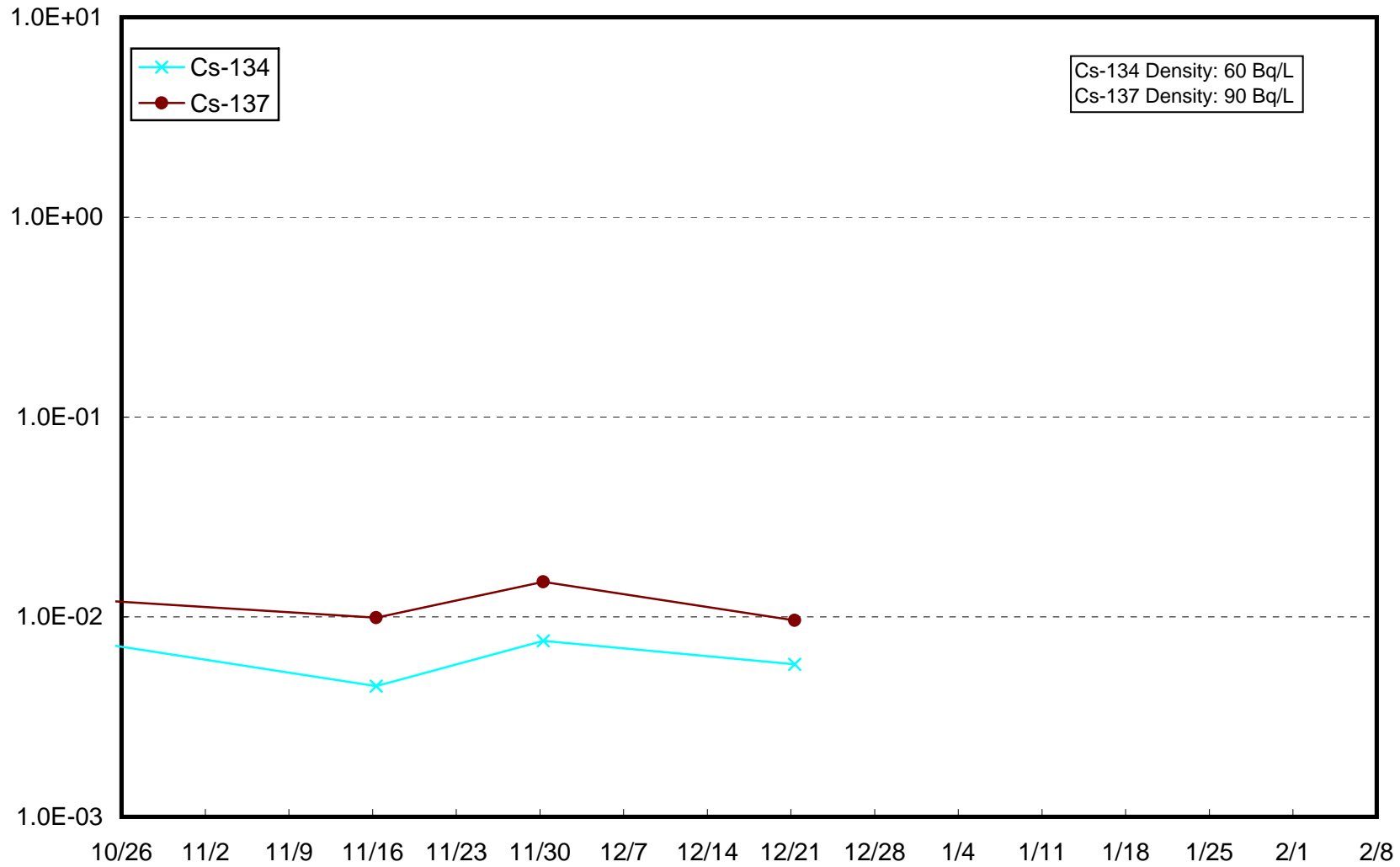
Radioactivity Density of the Seawater Around 3km Offshore of Odaka Ward (T-S2) Lower Layer (Bq/L)



Radioactivity Density of the Seawater at 15km Offshore of Odaka Ward (T-B1) Upper Layer (Bq/L)

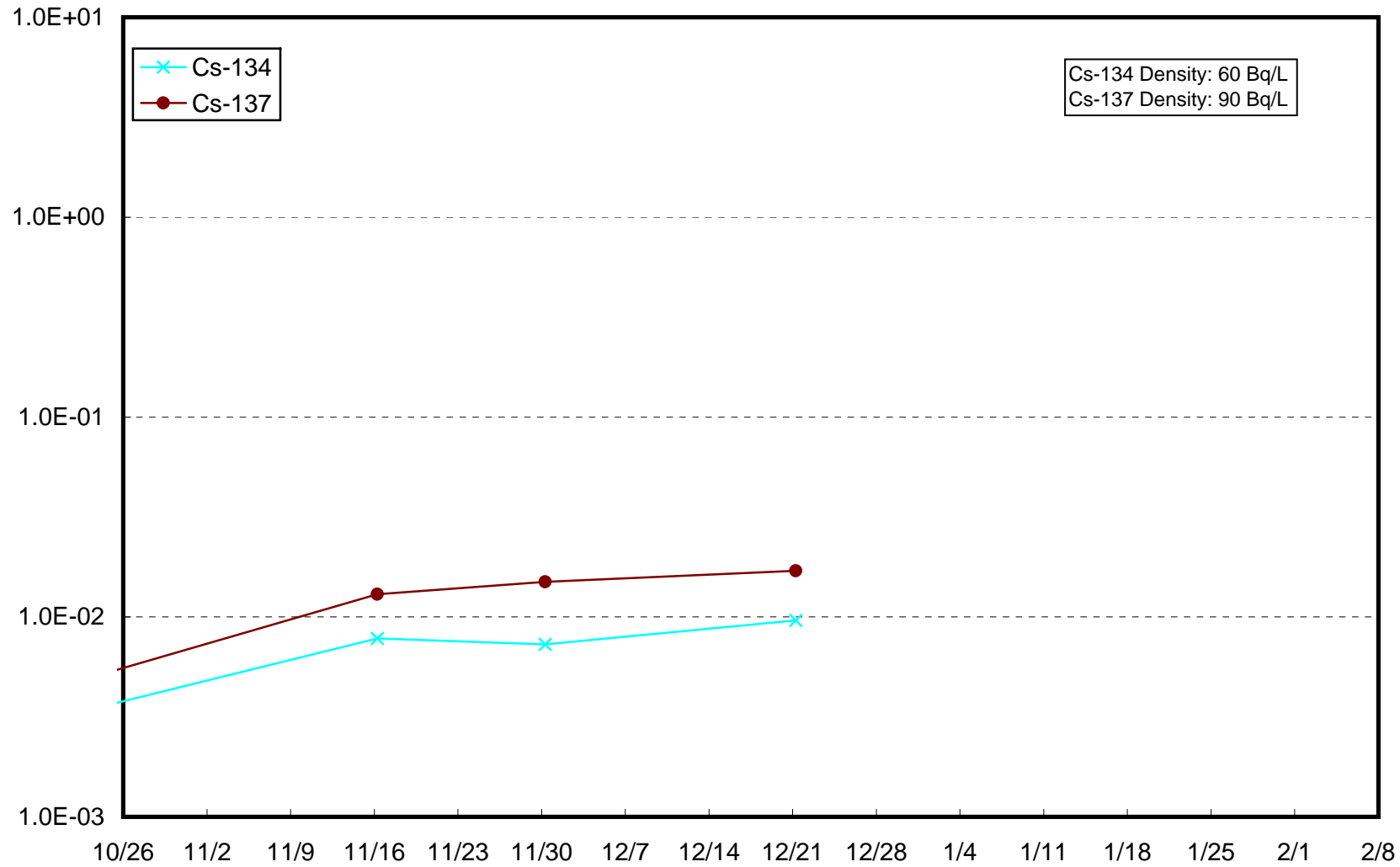


Radioactivity Density of the Seawater at 15km Offshore of Odaka Ward (T-B1) Lower Layer (Bq/L)





Radioactivity Density of the Seawater at 18km Offshore of Ukedo River (T-B2) Upper Layer (Bq/L)



Radioactivity Density of the Seawater at 18km Offshore of Ukedo River (T-B2) Lower Layer (Bq/L)

