

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

(Data summarized on April 18)

| Place of Sampling (Place No.) | Offshore of Minamisanriku (T-MG0) |                      |                           |                      |                           |                      | Ishinomaki Bay (T-MG1)    |                      |                           |                      |                           |                      | ② Density Limit Specified by the Reactor Regulation (Bq/L)<br><br>(The density limit in the water outside the surrounding monitored areas is provided in section 6 of Appendix 2.) |
|-------------------------------|-----------------------------------|----------------------|---------------------------|----------------------|---------------------------|----------------------|---------------------------|----------------------|---------------------------|----------------------|---------------------------|----------------------|--|
|                               | Upper Layer                       |                      | Middle Layer              |                      | Lower Layer               |                      | Upper Layer               |                      | Middle Layer              |                      | Lower Layer               |                      |  |
| Time of Sampling              | Mar 5, 2013<br>9:55 AM            |                      | Mar 5, 2013<br>10:53 AM   |                      | Mar 5, 2013<br>10:35 AM   |                      | Mar 5, 2013<br>10:02 AM   |                      | Mar 5, 2013<br>10:16 AM   |                      | Mar 5, 2013<br>10:04 AM   |                      |  |
| Detected Nuclides (Half-life) | ①Density of Sample (Bq/L)         | Scaling Factor (①/②) | ①Density of Sample (Bq/L) | Scaling Factor (①/②) | ①Density of Sample (Bq/L) | Scaling Factor (①/②) | ①Density of Sample (Bq/L) | Scaling Factor (①/②) | ①Density of Sample (Bq/L) | Scaling Factor (①/②) | ①Density of Sample (Bq/L) | Scaling Factor (①/②) |  |
| Cs-134 (Approx. 2 years)      | ND                                | -                    | ND                        | -                    | ND                        | -                    | 0.0032                    | 0.00                 | 0.0041                    | 0.00                 | 0.0033                    | 0.00                 | 60   |
| Cs-137 (Approx. 30 years)     | 0.0019                            | 0.00                 | 0.0018                    | 0.00                 | 0.0021                    | 0.00                 | 0.0079                    | 0.00                 | 0.0093                    | 0.00                 | 0.0073                    | 0.00                 | 90   |

| Place of Sampling (Place No.) | Offshore of Kinkasan East (T-MG2) |                      |                           |                      |                           |                      | Offshore of Kinkasan South (T-MG3) |                      |                           |                      |                           |                      | ② Density Limit Specified by the Reactor Regulation (Bq/L)<br><br>(The density limit in the water outside the surrounding monitored areas is provided in section 6 of Appendix 2.) |
|-------------------------------|-----------------------------------|----------------------|---------------------------|----------------------|---------------------------|----------------------|------------------------------------|----------------------|---------------------------|----------------------|---------------------------|----------------------|--|
|                               | Upper Layer                       |                      | Middle Layer              |                      | Lower Layer               |                      | Upper Layer                        |                      | Middle Layer              |                      | Lower Layer               |                      |  |
| Time of Sampling              | Mar 5, 2013<br>7:51 AM            |                      | Mar 5, 2013<br>8:11 AM    |                      | Mar 5, 2013<br>7:58 AM    |                      | Mar 5, 2013<br>8:42 AM             |                      | Mar 5, 2013<br>8:55 AM    |                      | Mar 5, 2013<br>8:45 AM    |                      |  |
| Detected Nuclides (Half-life) | ①Density of Sample (Bq/L)         | Scaling Factor (①/②) | ①Density of Sample (Bq/L) | Scaling Factor (①/②) | ①Density of Sample (Bq/L) | Scaling Factor (①/②) | ①Density of Sample (Bq/L)          | Scaling Factor (①/②) | ①Density of Sample (Bq/L) | Scaling Factor (①/②) | ①Density of Sample (Bq/L) | Scaling Factor (①/②) |  |
| Cs-134 (Approx. 2 years)      | ND                                | -                    | ND                        | -                    | ND                        | -                    | ND                                 | -                    | ND                        | -                    | ND                        | -                    | 60   |
| Cs-137 (Approx. 30 years)     | 0.0019                            | 0.00                 | 0.0019                    | 0.00                 | 0.0019                    | 0.00                 | 0.0036                             | 0.00                 | 0.0032                    | 0.00                 | 0.0025                    | 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.

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

Cs-134: Approx.0.0015Bq/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.

\* Analysis results by detail analysis (Phosphomolybdic acid ammonium adsorption sampling method) are noted. (Since the announcement on June 15, 2012.)

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

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

(Data summarized on April 18)

| Place of Sampling (Place No.) | Offshore of Shichigahama (T-MG4) |                      |                           |                      |                           |                      | Central Area of Sendai Bay (T-MG5) |                      |                           |                      |                           |                      | ② Density Limit Specified by the Reactor Regulation (Bq/L)<br>(The density limit in the water outside the surrounding monitored areas is provided in section 6 of Appendix 2.) |
|-------------------------------|----------------------------------|----------------------|---------------------------|----------------------|---------------------------|----------------------|------------------------------------|----------------------|---------------------------|----------------------|---------------------------|----------------------|--|
|                               | Upper Layer                      |                      | Middle Layer              |                      | Lower Layer               |                      | Upper Layer                        |                      | Middle Layer              |                      | Lower Layer               |                      |  |
| Time of Sampling              | Mar 5, 2013<br>9:25 AM           |                      | Mar 5, 2013<br>9:40 AM    |                      | Mar 5, 2013<br>9:30 AM    |                      | Mar 5, 2013<br>9:01 AM             |                      | Mar 5, 2013<br>8:53 AM    |                      | Mar 5, 2013<br>8:43 AM    |                      |  |
| Detected Nuclides (Half-life) | ①Density of Sample (Bq/L)        | Scaling Factor (①/②) | ①Density of Sample (Bq/L) | Scaling Factor (①/②) | ①Density of Sample (Bq/L) | Scaling Factor (①/②) | ①Density of Sample (Bq/L)          | Scaling Factor (①/②) | ①Density of Sample (Bq/L) | Scaling Factor (①/②) | ①Density of Sample (Bq/L) | Scaling Factor (①/②) |  |
| Cs-134 (Approx. 2 years)      | 0.0054                           | 0.00                 | 0.0048                    | 0.00                 | 0.0049                    | 0.00                 | 0.0029                             | 0.00                 | ND                        | -                    | 0.0021                    | 0.00                 | 60   |
| Cs-137 (Approx. 30 years)     | 0.0099                           | 0.00                 | 0.0095                    | 0.00                 | 0.010                     | 0.00                 | 0.0069                             | 0.00                 | 0.0061                    | 0.00                 | 0.0067                    | 0.00                 | 90   |

| Place of Sampling (Place No.) | Offshore of Abukuma River (T-MG6) |                      |                           |                      |                           |                      |                           |                      |                           |                      |                           |                      | ② Density Limit Specified by the Reactor Regulation (Bq/L)<br>(The density limit in the water outside the surrounding monitored areas is provided in section 6 of Appendix 2.) |
|-------------------------------|-----------------------------------|----------------------|---------------------------|----------------------|---------------------------|----------------------|---------------------------|----------------------|---------------------------|----------------------|---------------------------|----------------------|--|
|                               | Upper Layer                       |                      | Middle Layer              |                      | Lower Layer               |                      | Upper Layer               |                      | Middle Layer              |                      | Lower Layer               |                      |  |
| Time of Sampling              | Mar 5, 2013<br>10:27 AM           |                      | Mar 5, 2013<br>10:34 AM   |                      | Mar 5, 2013<br>10:29 AM   |                      |                           |                      |                           |                      |                           |                      |  |
| Detected Nuclides (Half-life) | ①Density of Sample (Bq/L)         | Scaling Factor (①/②) | ①Density of Sample (Bq/L) | Scaling Factor (①/②) | ①Density of Sample (Bq/L) | Scaling Factor (①/②) | ①Density of Sample (Bq/L) | Scaling Factor (①/②) | ①Density of Sample (Bq/L) | Scaling Factor (①/②) | ①Density of Sample (Bq/L) | Scaling Factor (①/②) |  |
| Cs-134 (Approx. 2 years)      | 0.0043                            | 0.00                 | 0.012                     | 0.00                 | 0.0034                    | 0.00                 |                           |                      |                           |                      |                           |                      | 60   |
| Cs-137 (Approx. 30 years)     | 0.0087                            | 0.00                 | 0.024                     | 0.00                 | 0.0083                    | 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.

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

Cs-134: Approx.0.0016Bq/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.

\* Analysis results by detail analysis (Phosphomolybdic acid ammonium adsorption sampling method) are noted. (Since the announcement on June 15, 2012.)

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

## Nuclides Analysis Result of Radioactive Materials in the Seawater

(Data summarized on April 18)

| Place of Sampling<br>(Place No.) | Central Area of Sendai Bay (T-MG5)<br>Upper Layer |                         | 3km Offshore of Oarai Shore (T-C)<br>Upper Layer |                         | /                            |                         | ② Density Limit Specified<br>by the Reactor Regulation<br>(Bq/L)<br><br>(The density limit in the<br>water outside the<br>surrounding monitored<br>areas is provided in section<br>6 of Appendix 2.) |
|----------------------------------|---|-------------------------|--|-------------------------|------------------------------|-------------------------|--|
|                                  | ①Density of Sample<br>(Bq/L)                      | Scaling Factor<br>(①/②) | ①Density of Sample<br>(Bq/L)                     | Scaling Factor<br>(①/②) | ①Density of Sample<br>(Bq/L) | Scaling Factor<br>(①/②) |  |
| Date of Sampling                 | Mar 5, 2013                                       |                         | Mar 12, 2013                                     |                         | /                            |                         |  |
| I-131<br>(Approx. 8 days)        | —   | —                       | ND   | —                       | /                            |                         | 40   |
| Cs-134<br>(Approx. 2 years)      | 0.0029  | 0.00                    | ND   | —                       | /                            |                         | 60   |
| Cs-137<br>(Approx. 30 years)     | 0.0069  | 0.00                    | ND   | —                       | /                            |                         | 90   |
| Sr-89<br>(Approx. 51 days)       | ND  | —                       | ND   | —                       | /                            |                         | 300  |
| Sr-90<br>(Approx. 29 years)      | ND  | —                       | ND   | —                       | /                            |                         | 30   |

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

\* Radioactivity Density "—" means "not applicable".

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

\* Analysis result of I-131, Cs-134, Cs-137 obtained at 3km Offshore of Oarai Shore was released on March 26.

\* When the measurement value is below the detection limit, "ND" is marked. The detection limits are as follows.

I-131: Approx. 0.89Bq/L, Cs-134: Approx.1.1Bq/L, Cs-137: Approx.1.1Bq/L, Sr-89: Approx. 0.02Bq/L, Sr-90: Approx. 0.009Bq/L

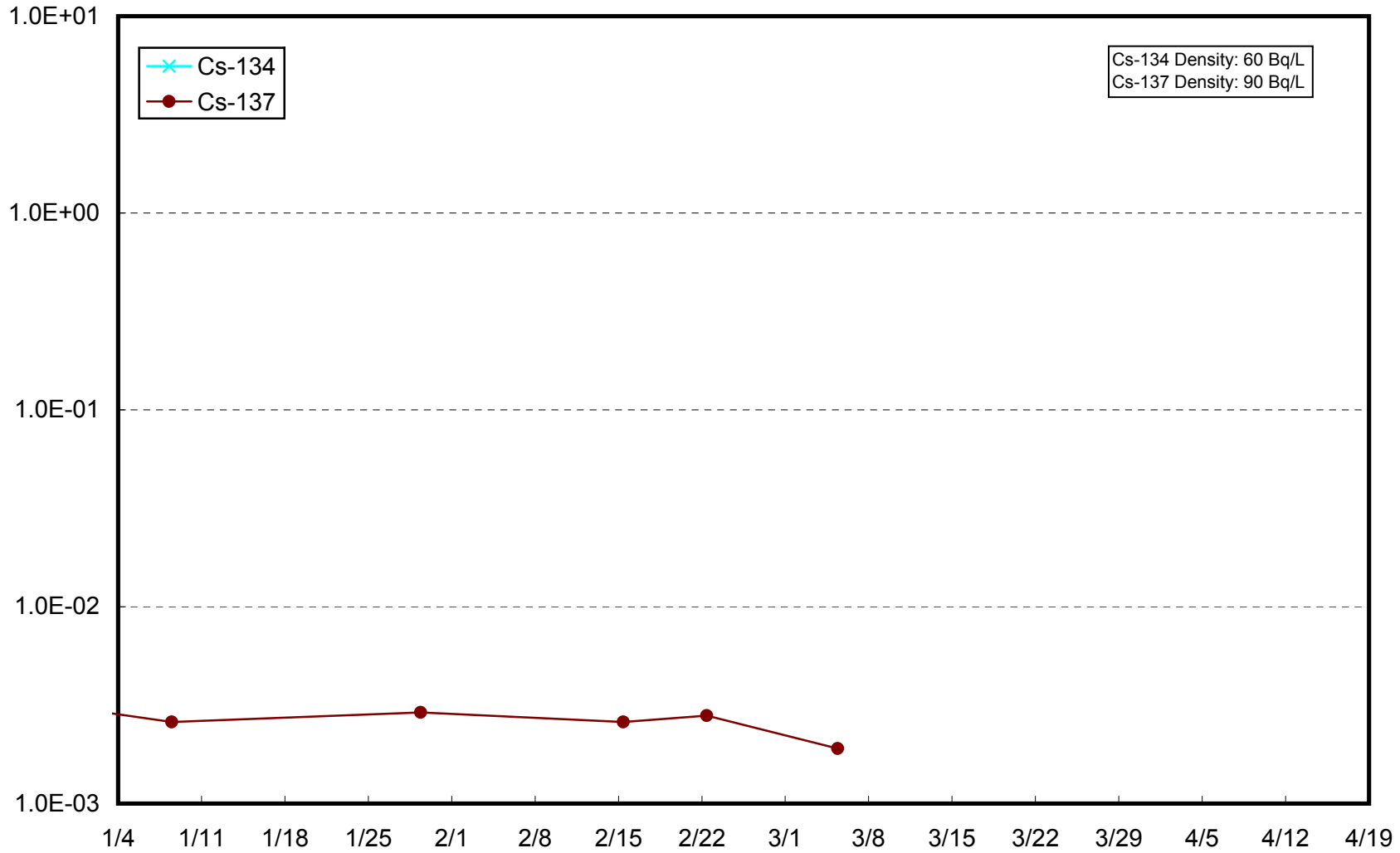
As the detection limit may vary depending on the detectors and sample properties, there are cases where nuclides below the detection limit are detected.

\* Sr-89 and Sr-90 was analyzed by: Japan Chemical Analysis Center

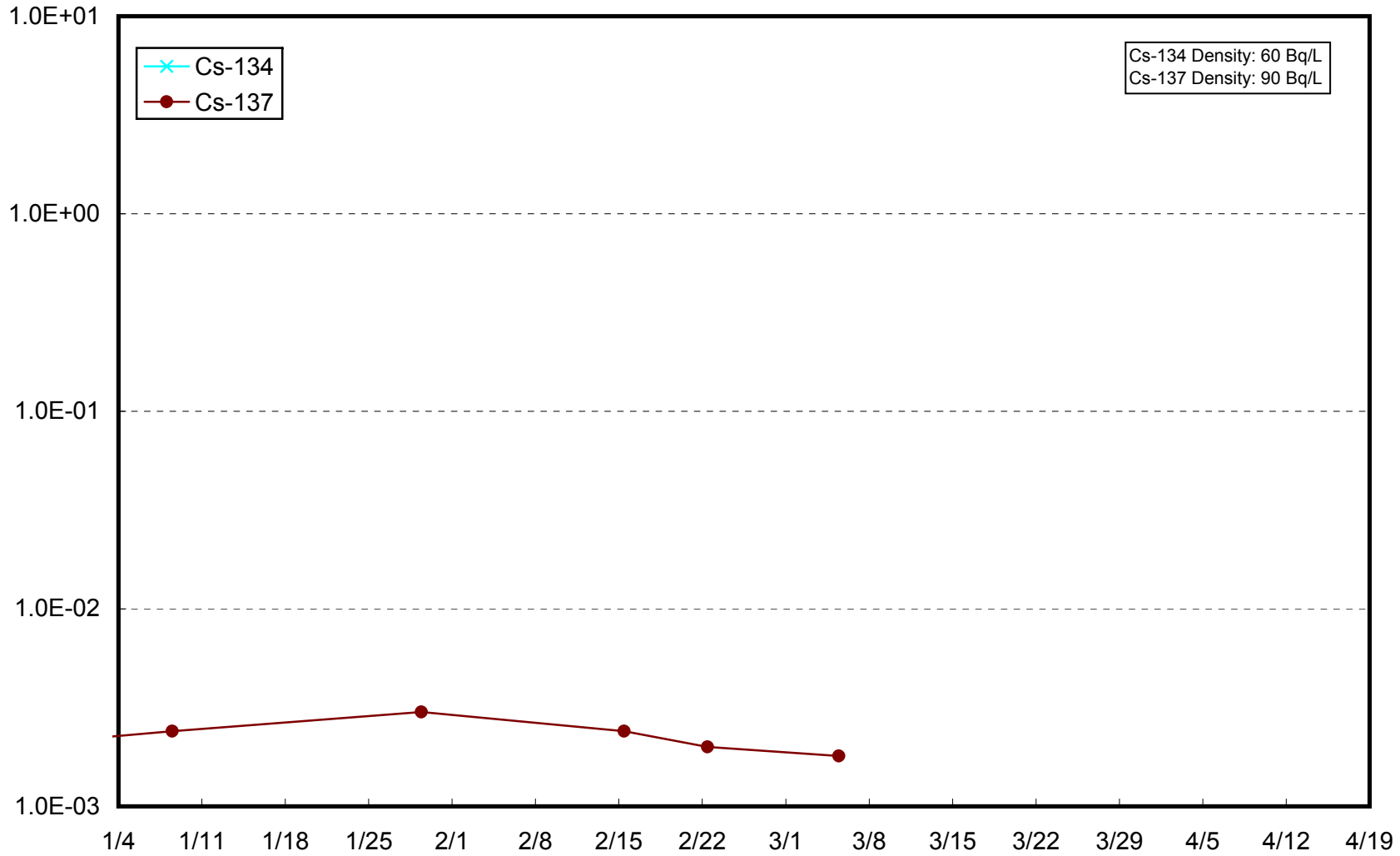
(Evaluation)

Sr-89 and Sr-90 were not detected in the sample collected this time.

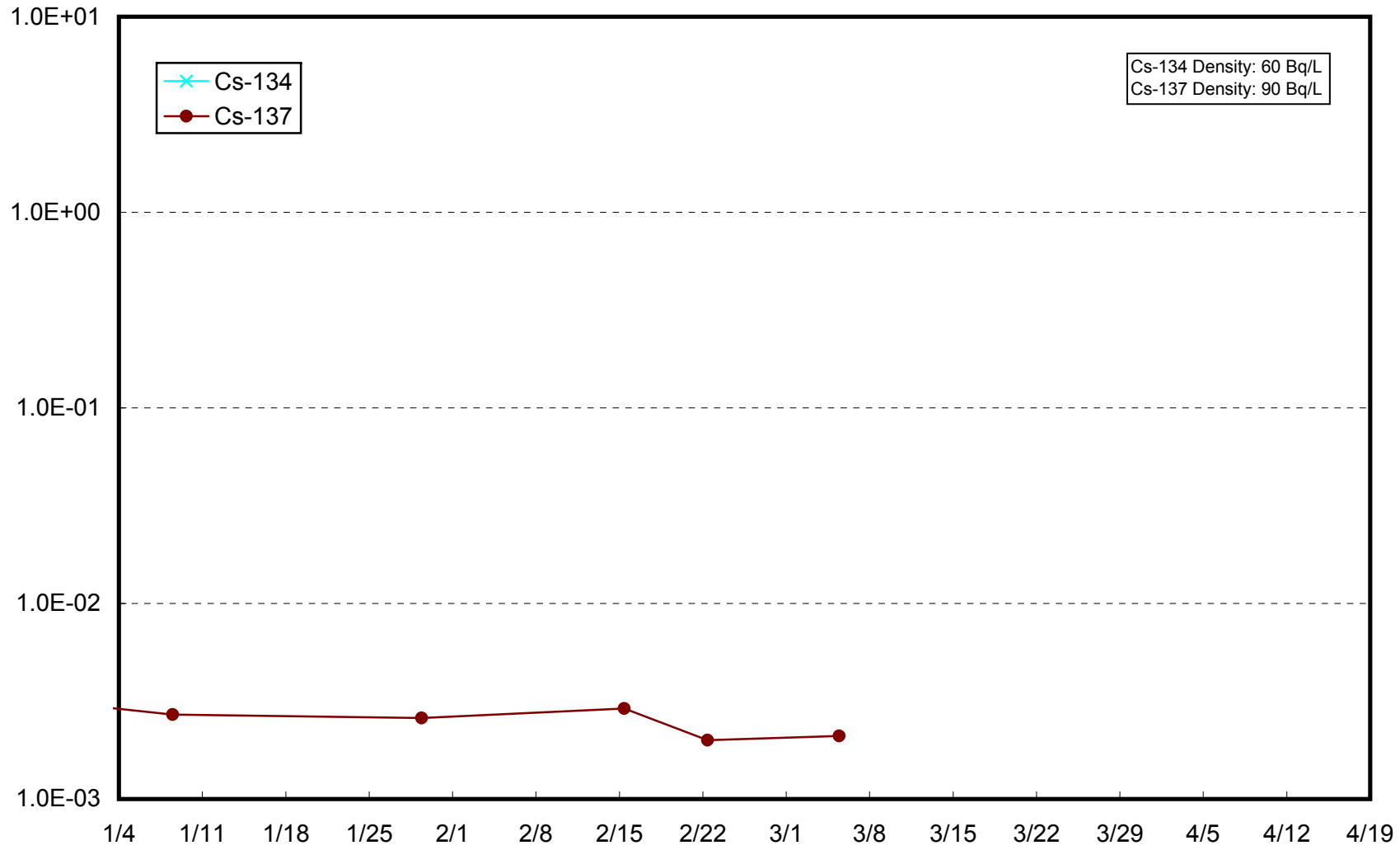
Radioactivity Density of the Seawater at Offshore of Minamisanriku (T-MG0) Upper Layer (Bq/L)



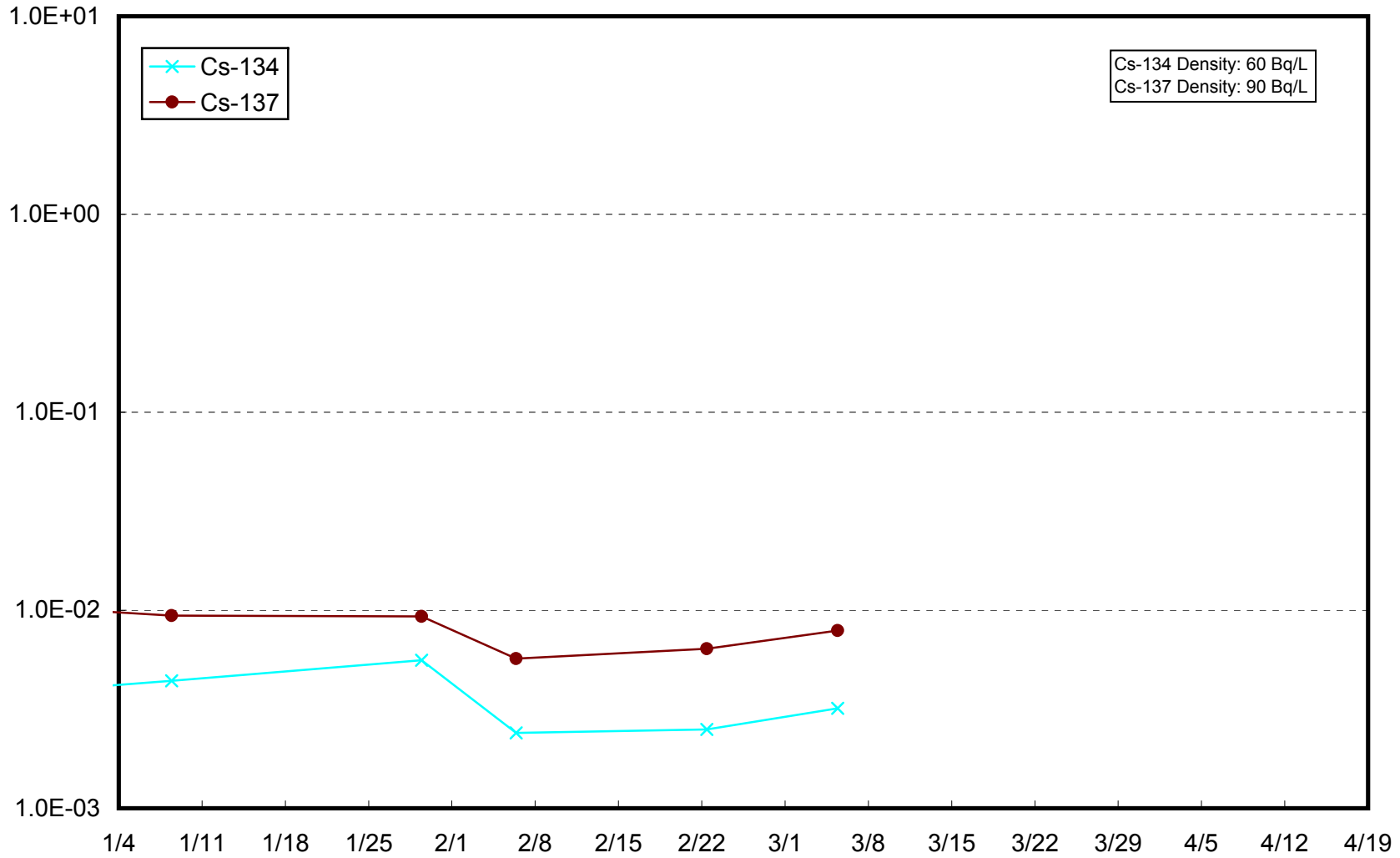
Radioactivity Density of the Seawater at Offshore of Minamisanriku (T-MG0) Middle Layer (Bq/L)



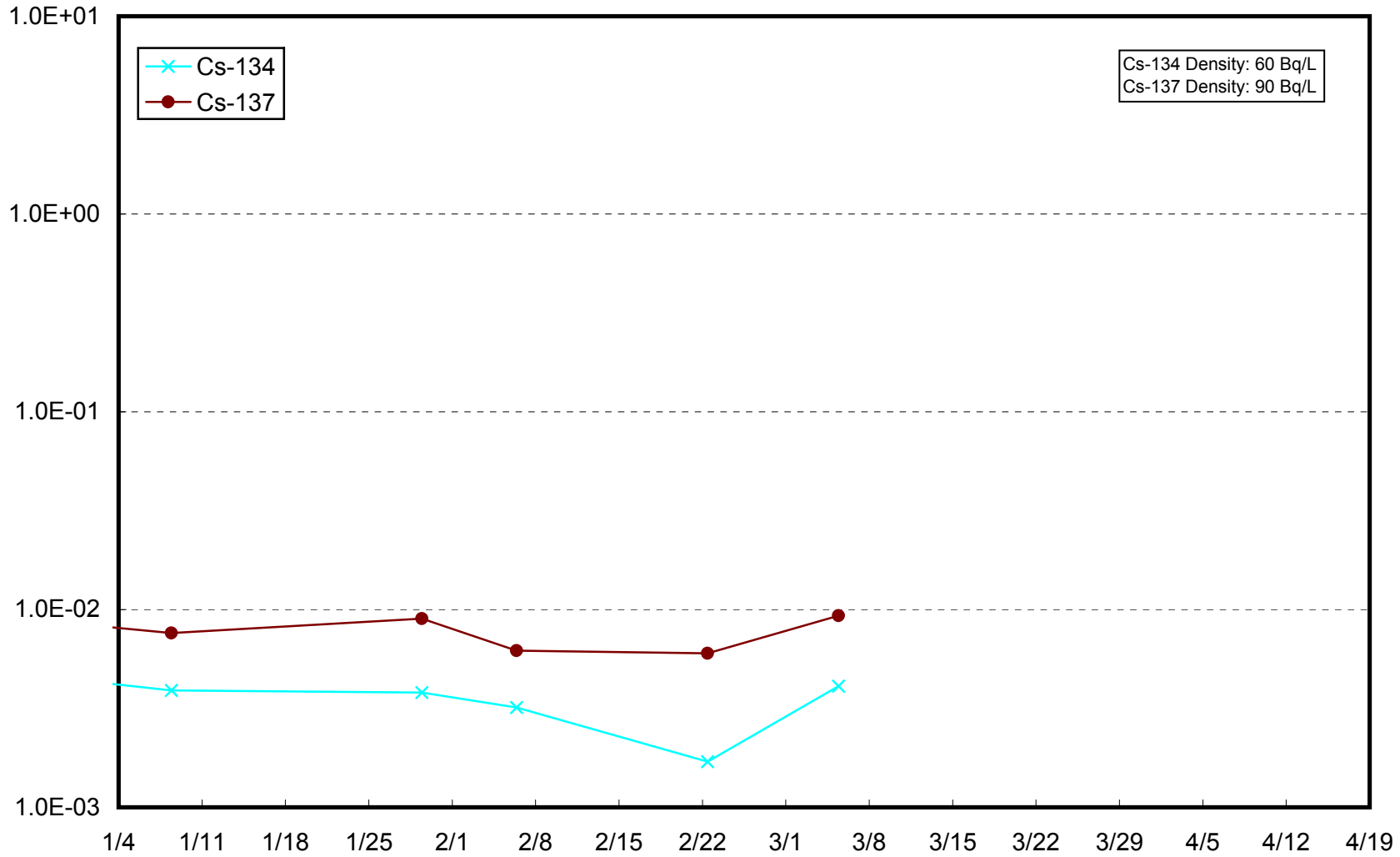
Radioactivity Density of the Seawater at Offshore of Minamisanriku (T-MG0) Lower Layer (Bq/L)



Radioactivity Density of the Seawater in Ishinomaki Bay (T-MG1) Upper Layer (Bq/L)

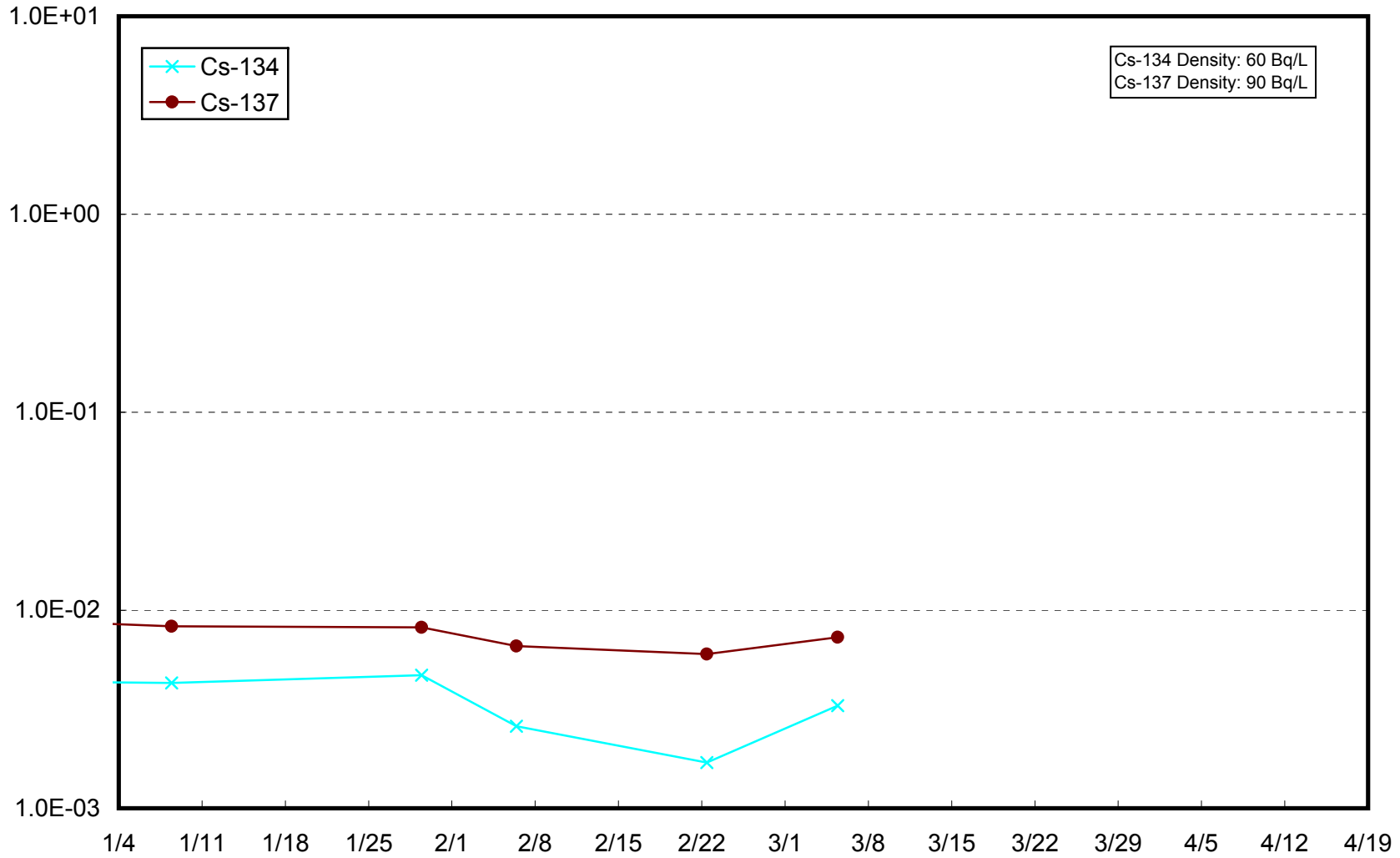


Radioactivity Density of the Seawater in Ishinomaki Bay (T-MG1) Middle Layer (Bq/L)

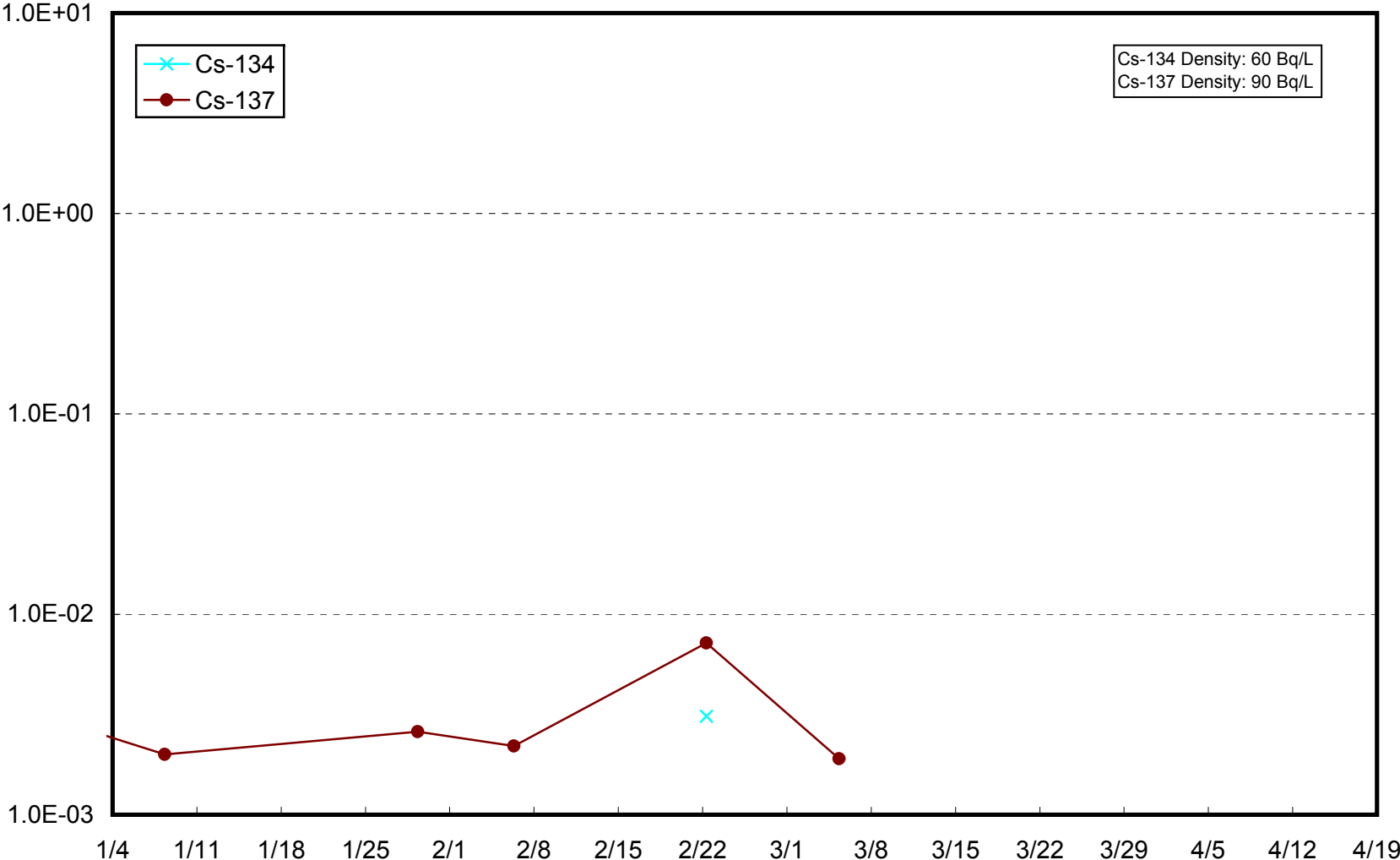




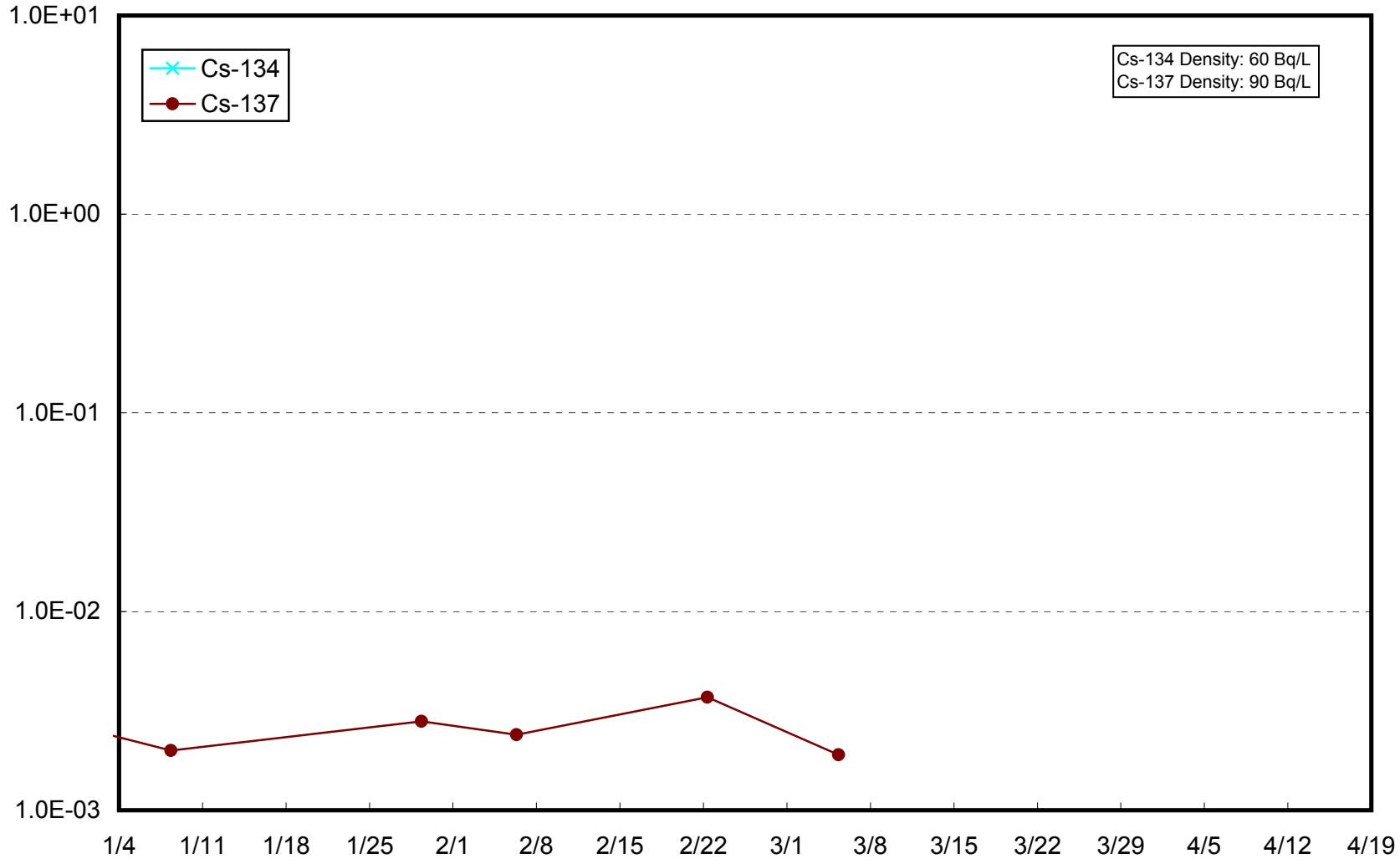
Radioactivity Density of the Seawater in Ishinomaki Bay (T-MG1) Lower Layer (Bq/L)



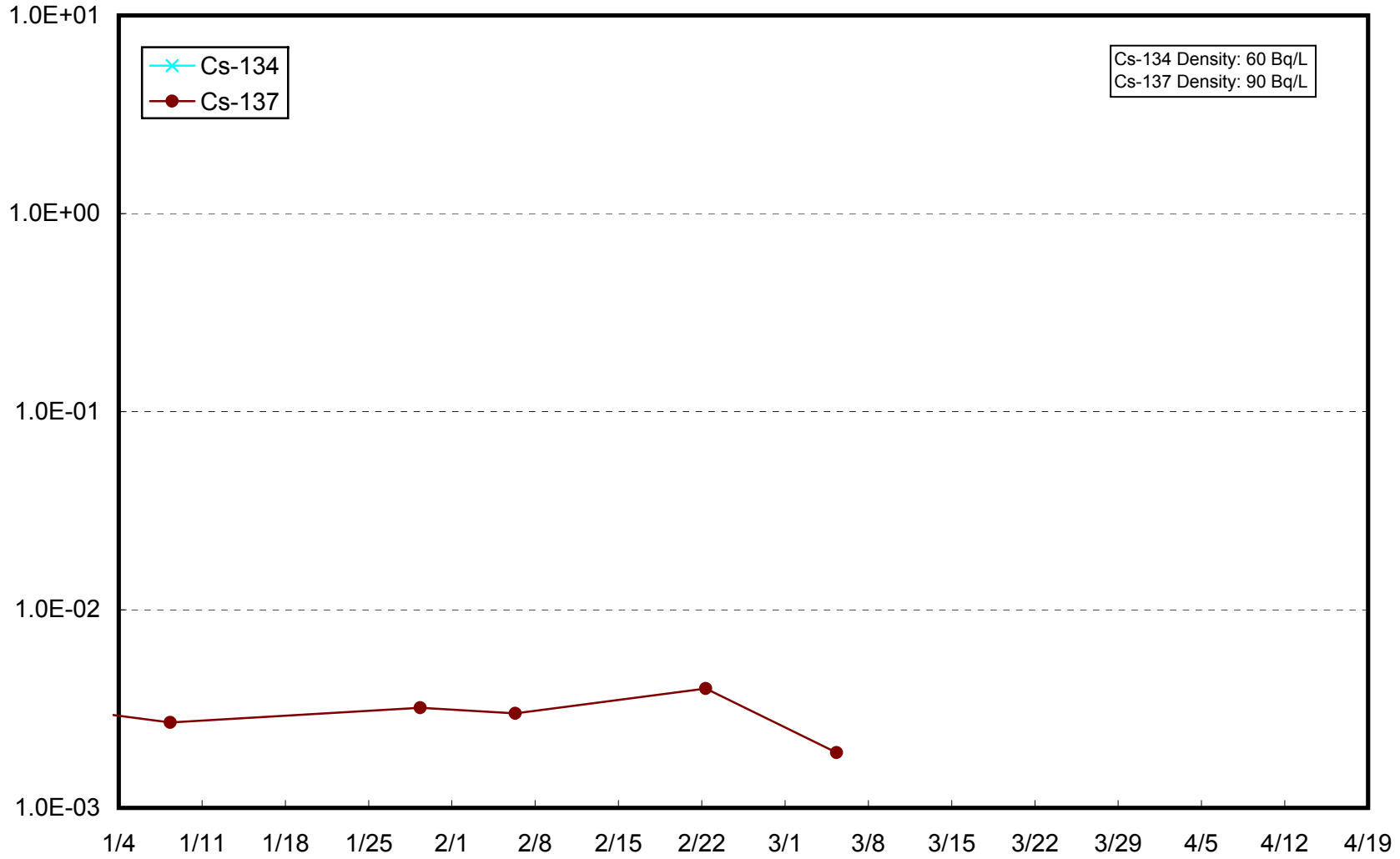
Radioactivity Density of the Seawater at Offshore of Kinkasan East (T-MG2) Upper Layer (Bq/L)



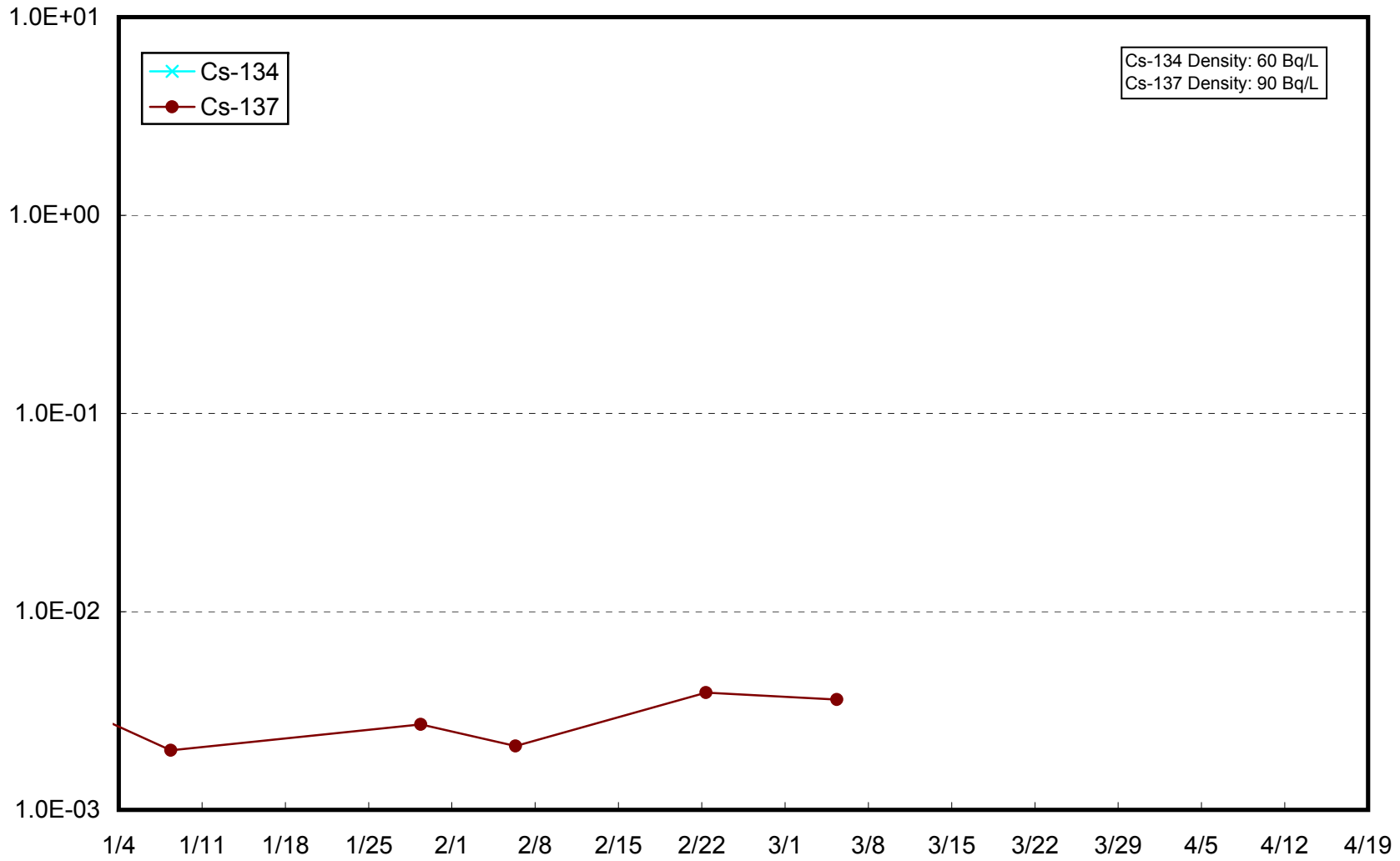
Radioactivity Density of the Seawater at Offshore of Kinkasan East (T-MG2) Middle Layer (Bq/L)



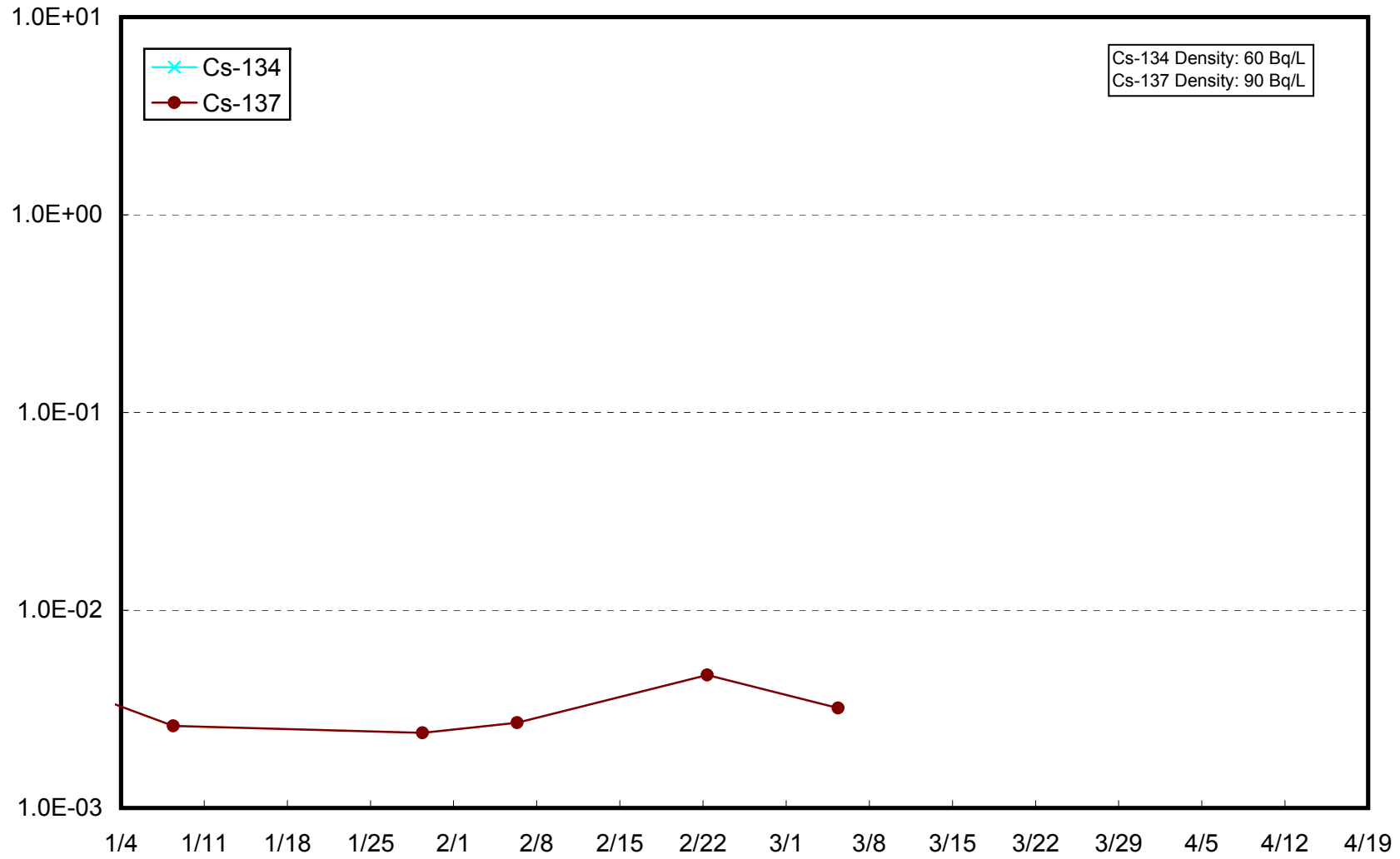
Radioactivity Density of the Seawater at Offshore of Kinkasan East (T-MG2) Lower Layer (Bq/L)



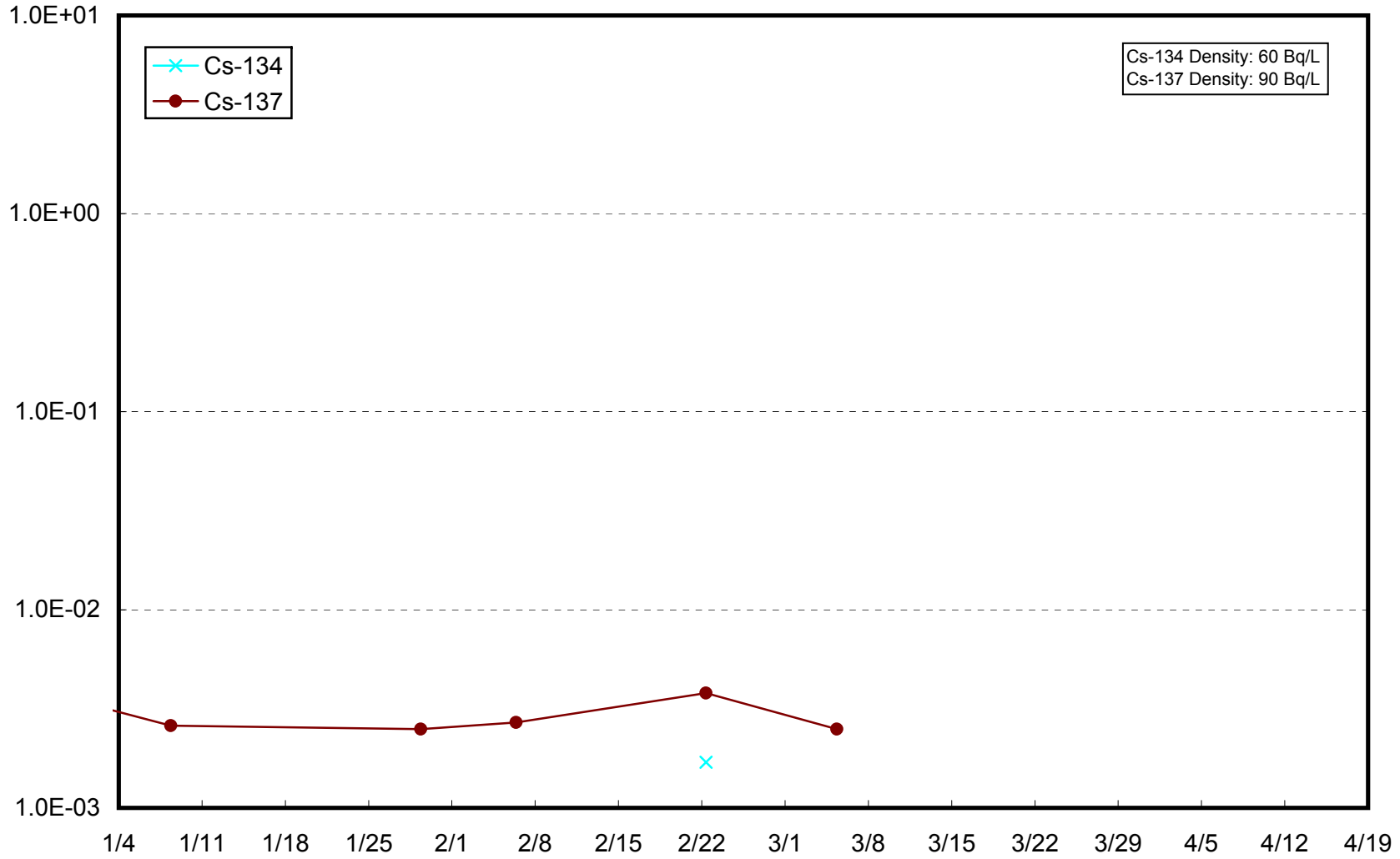
Radioactivity Density of the Seawater at Offshore of Kinkasan South (T-MG3) Upper Layer (Bq/L)



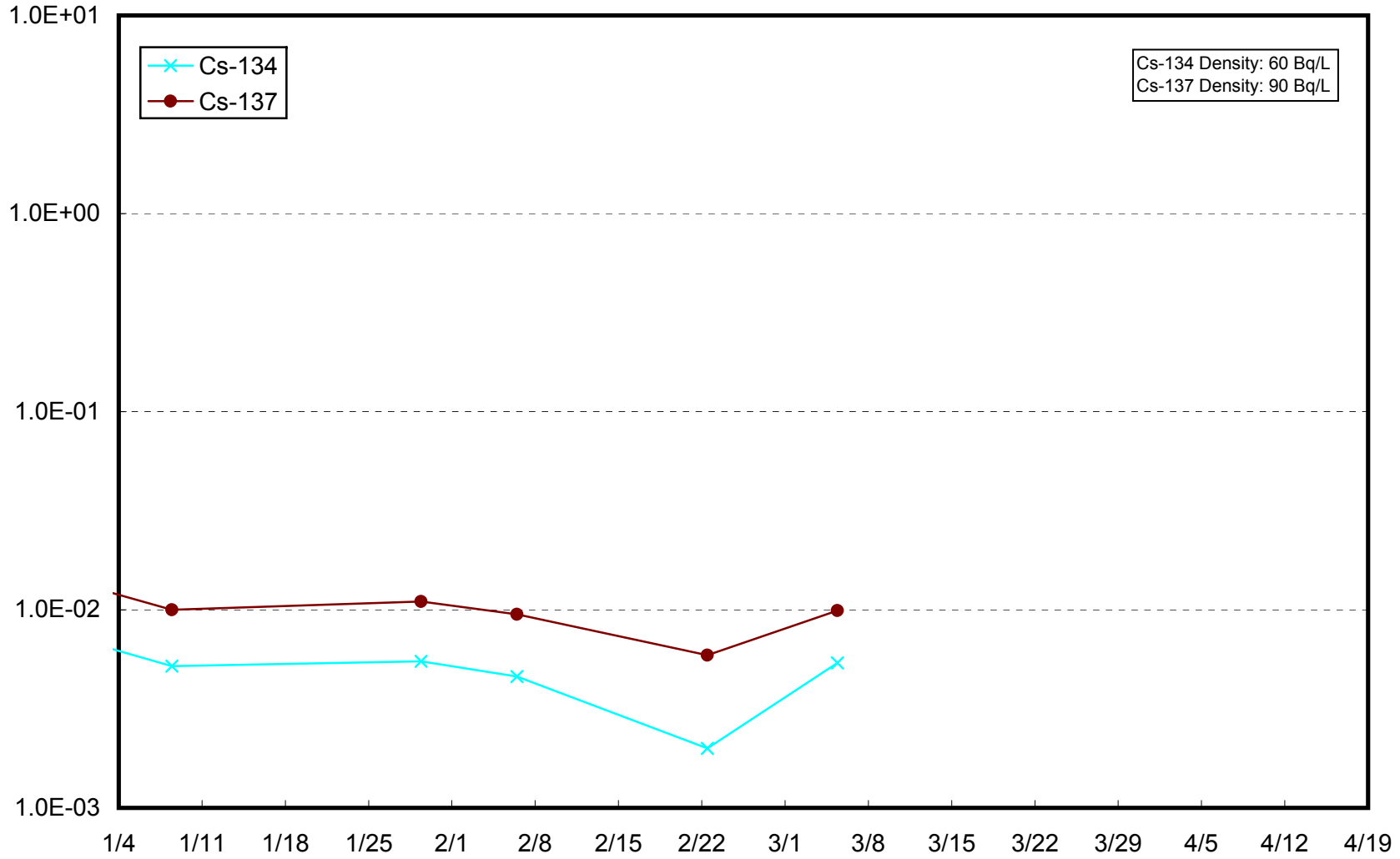
Radioactivity Density of the Seawater at Offshore of Kinkasan South (T-MG3) Middle Layer (Bq/L)



Radioactivity Density of the Seawater at Offshore of Kinkasan South (T-MG3) Lower Layer (Bq/L)

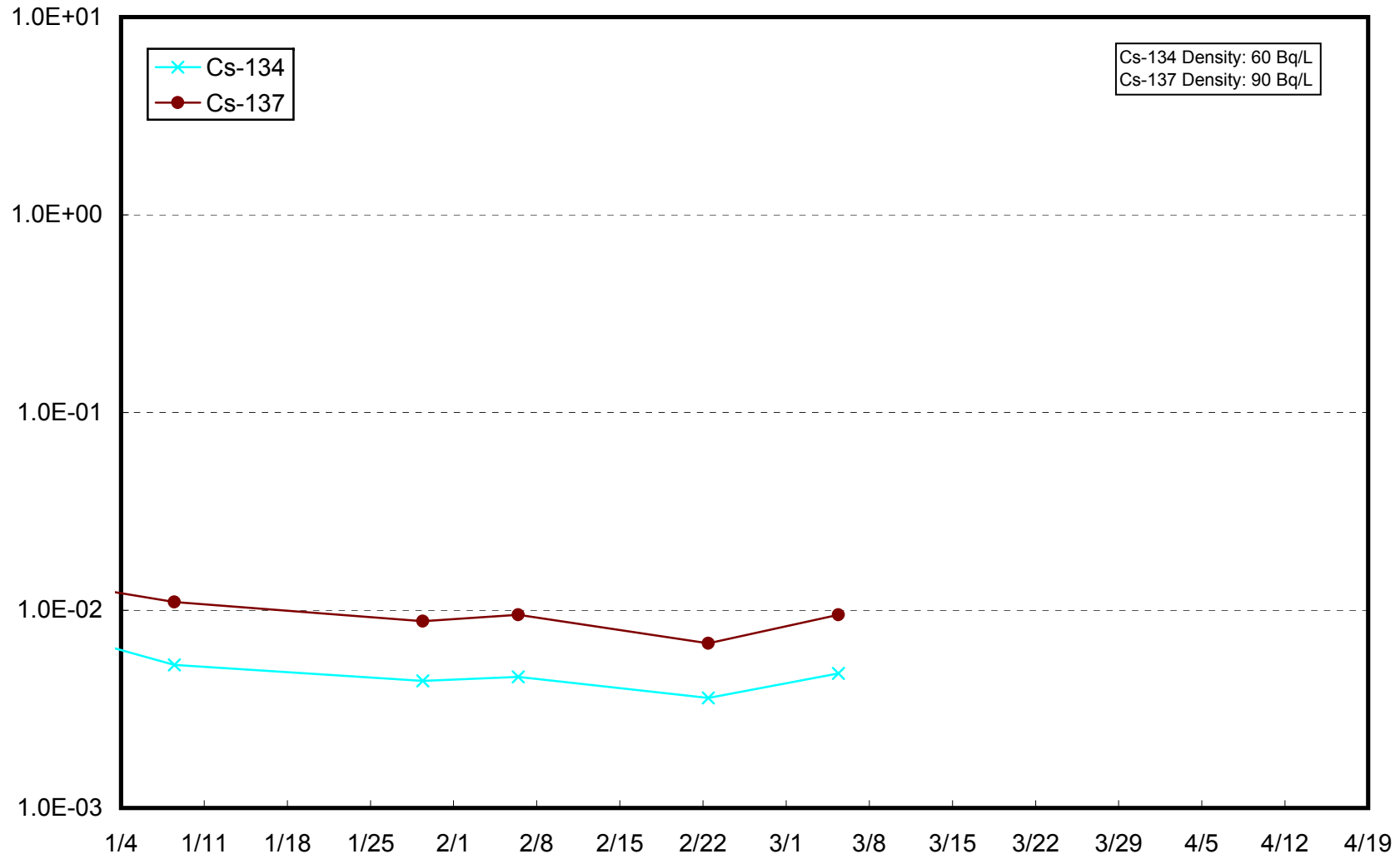


Radioactivity Density of the Seawater at Offshore of Shichigahama (T-MG4) Upper Layer (Bq/L)

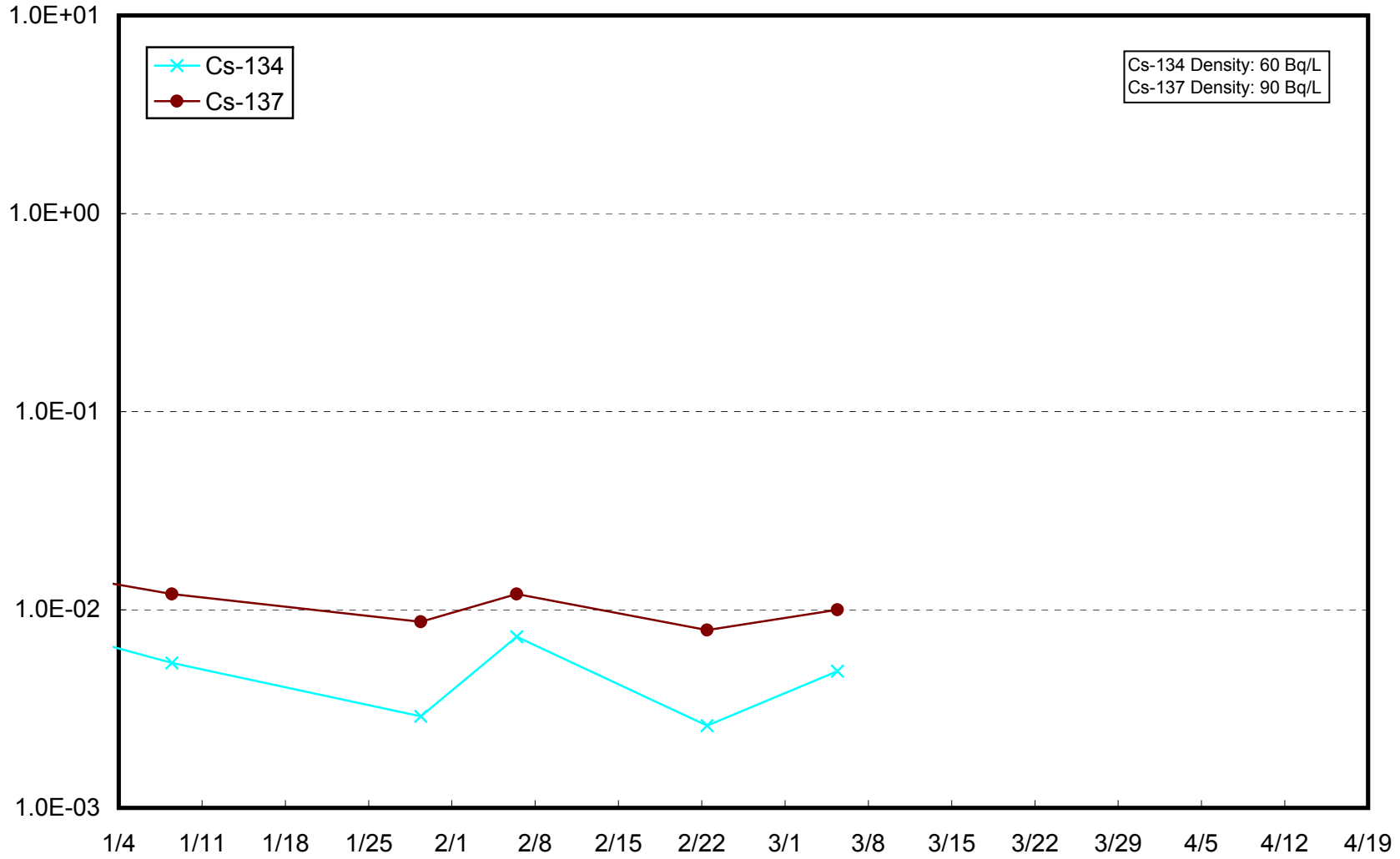




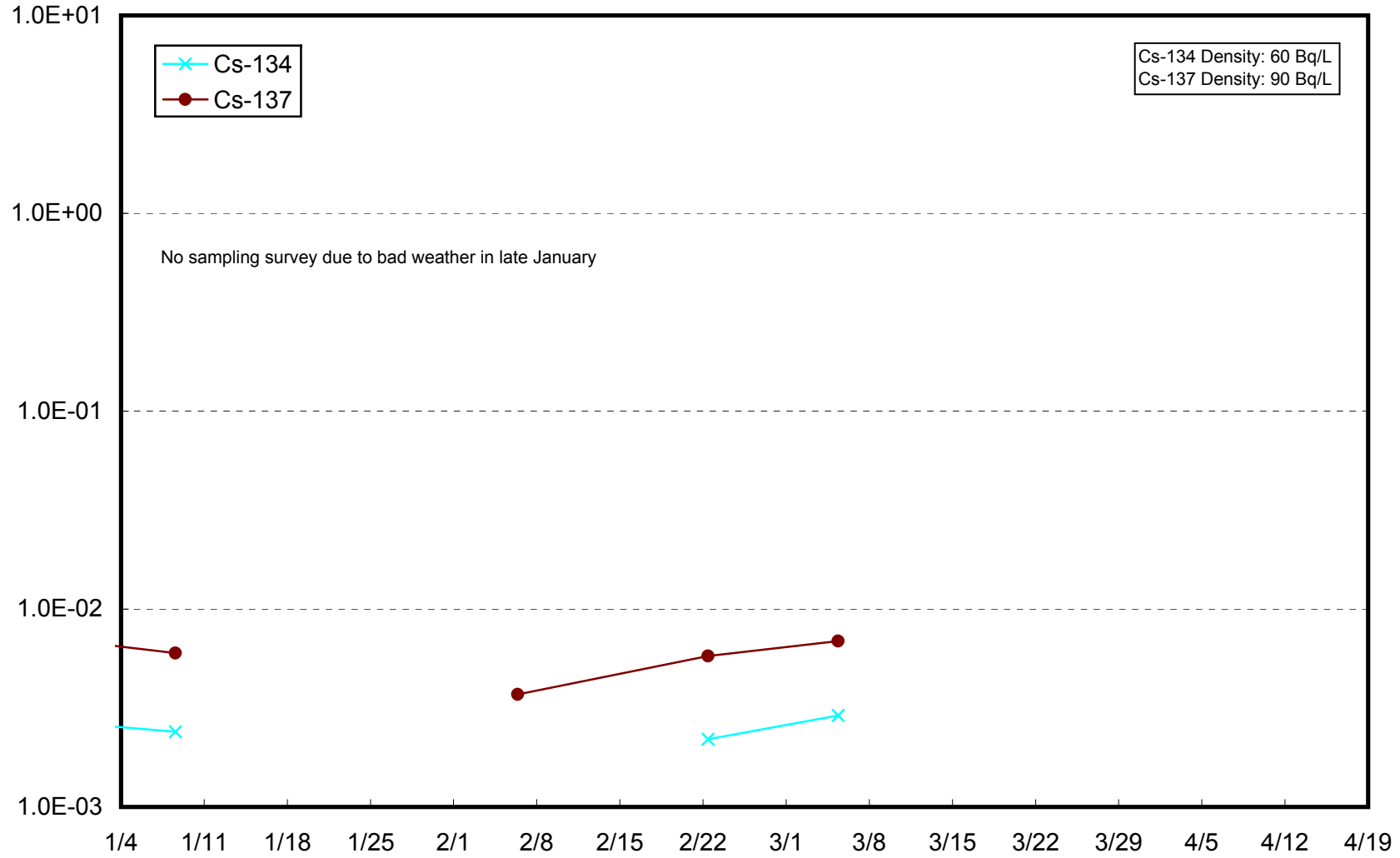
Radioactivity Density of the Seawater at Offshore of Shichigahama (T-MG4) Middle Layer (Bq/L)



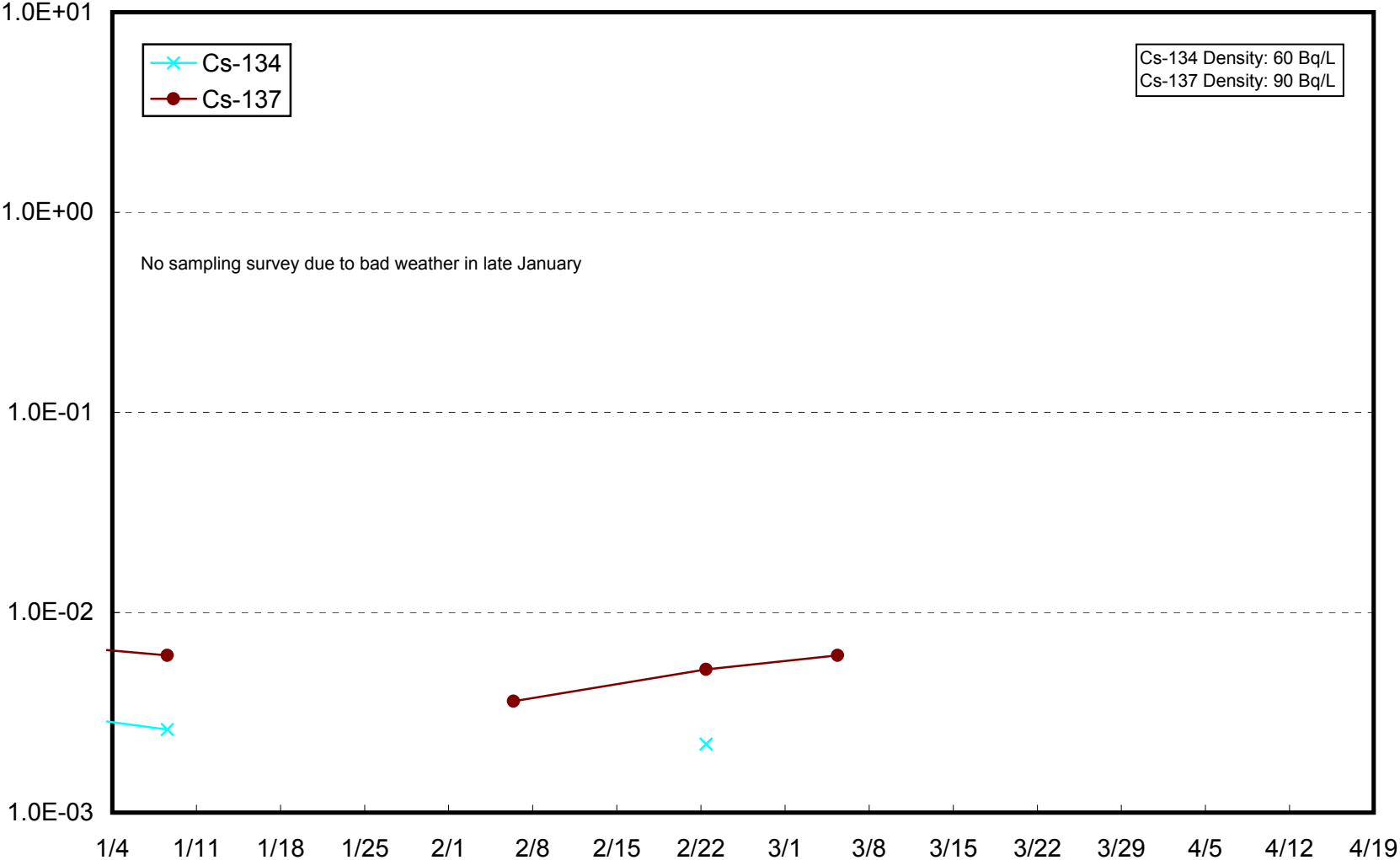
Radioactivity Density of the Seawater at Offshore of Shichigahama (T-MG4) Lower Layer (Bq/L)



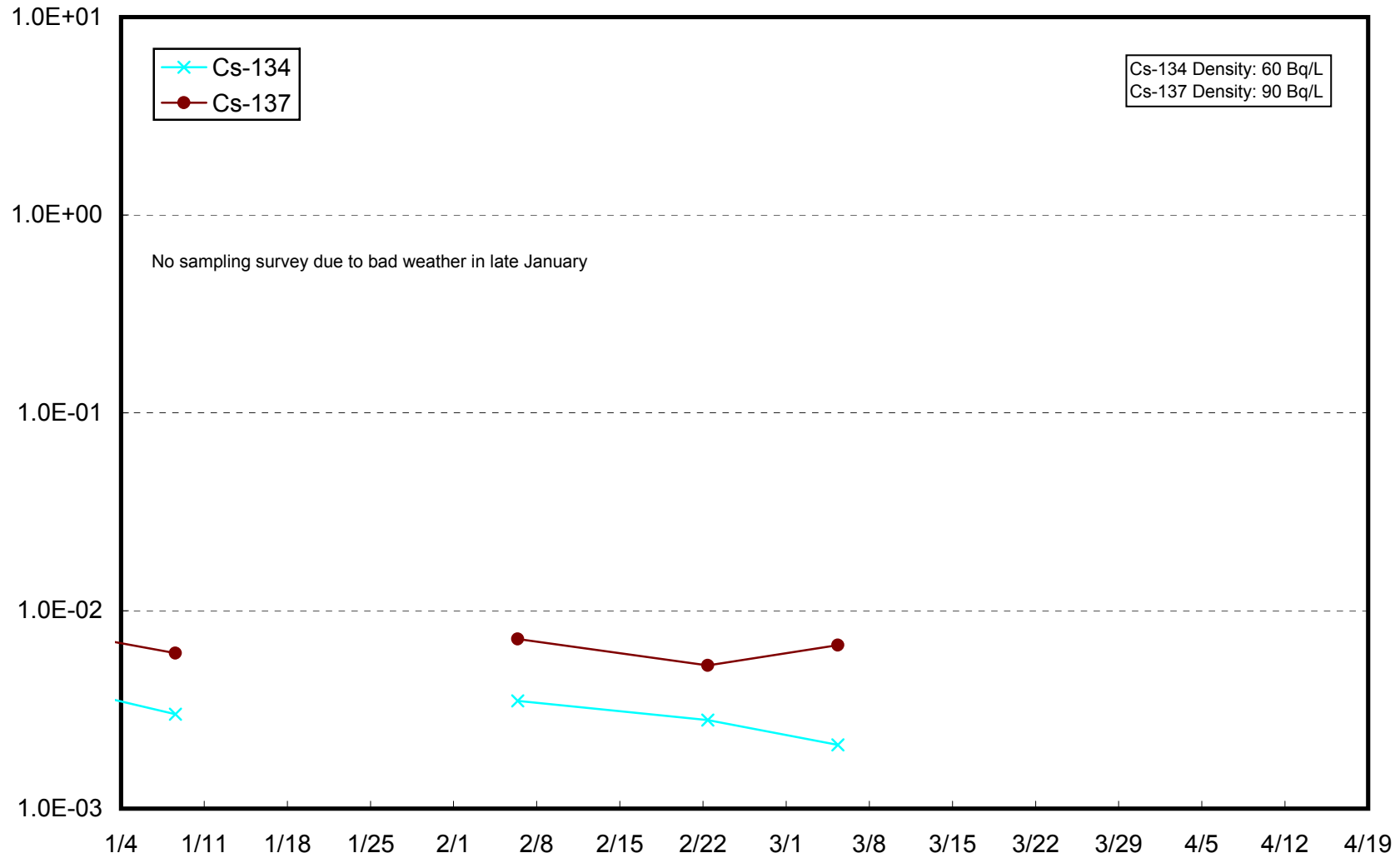
Radioactivity Density of the Seawater in the Central Area of Sendai Bay (T-MG5) Upper Layer (Bq/L)



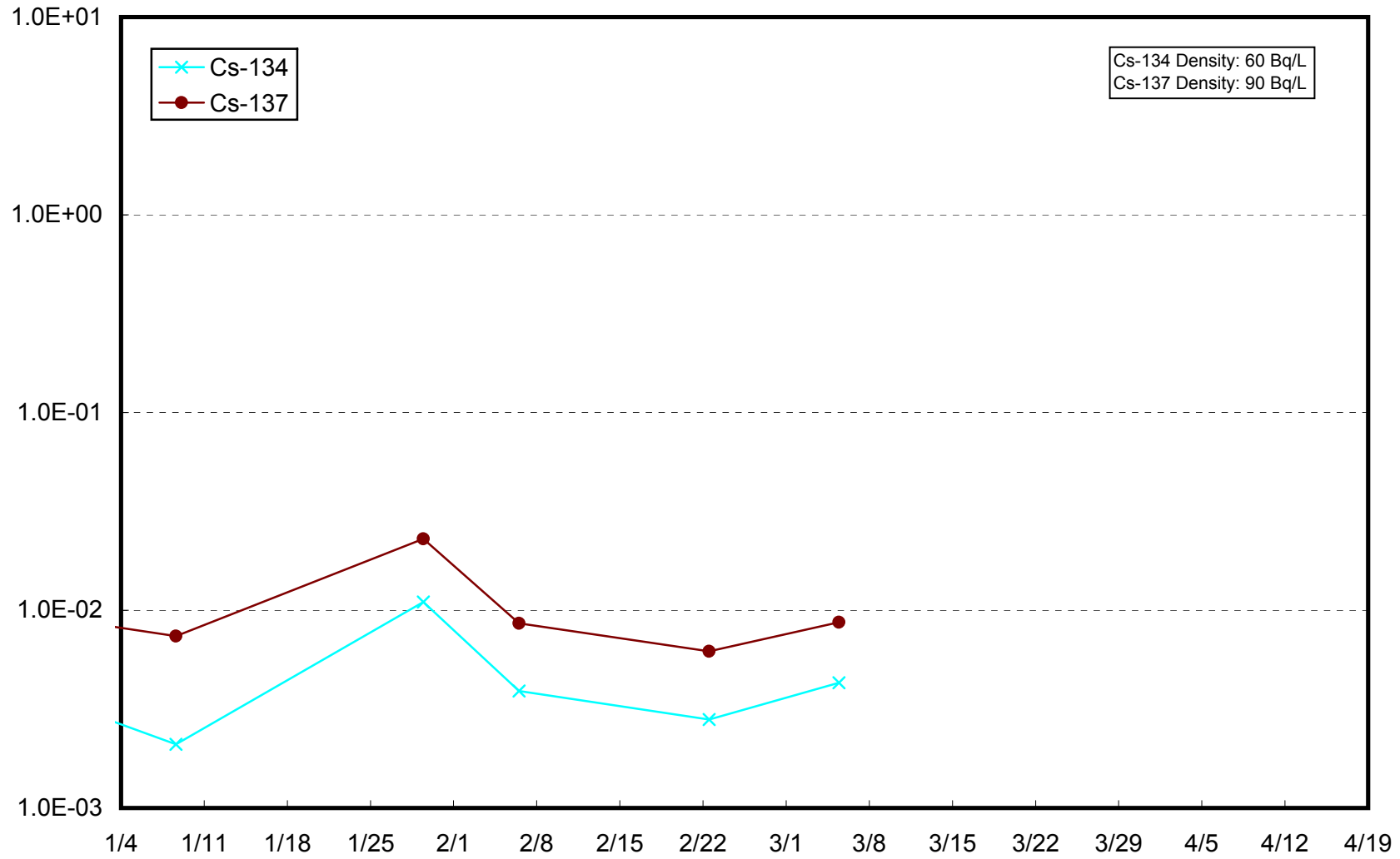
Radioactivity Density of the Seawater in the Central Area of Sendai Bay (T-MG5) Middle Layer (Bq/L)



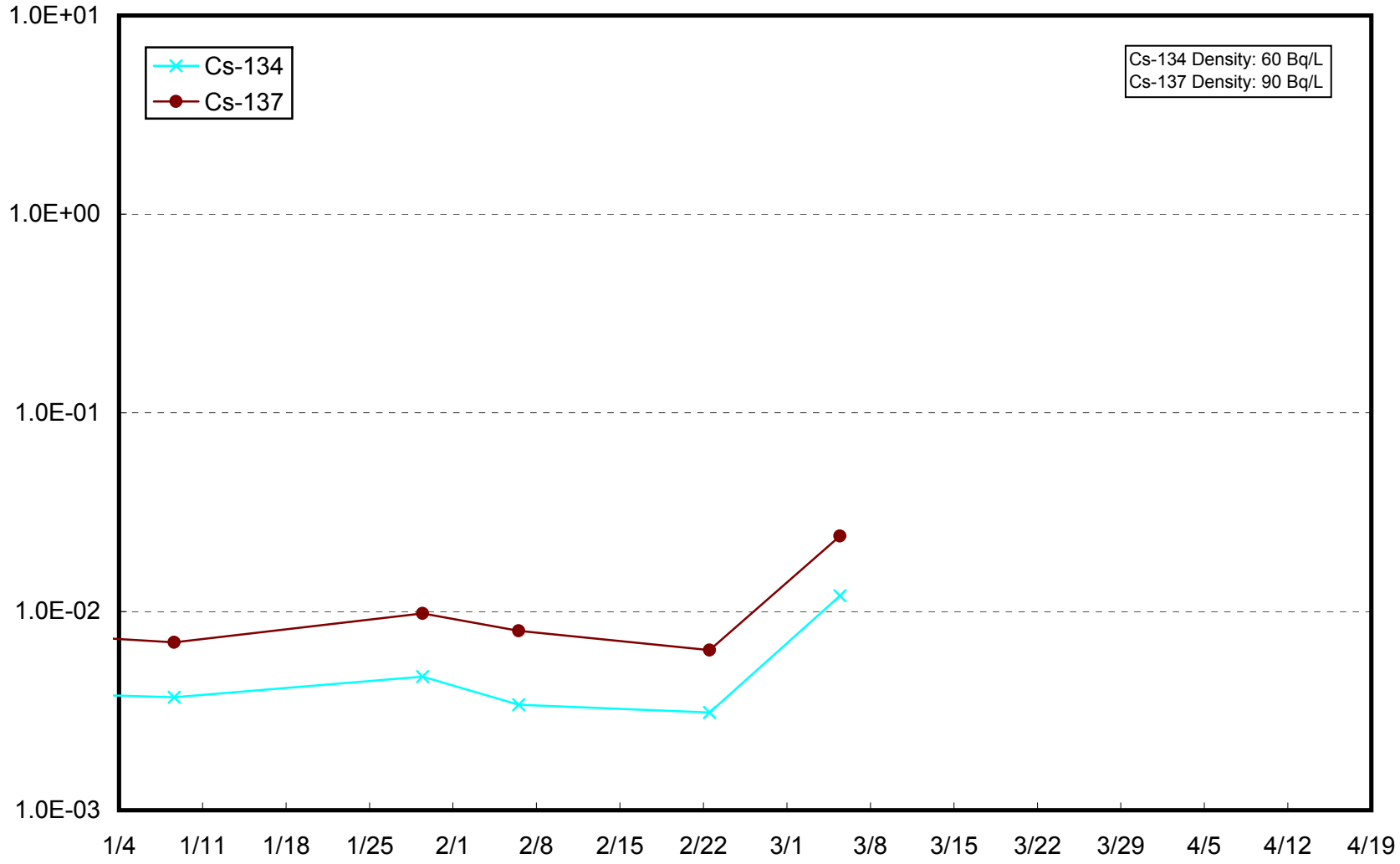
Radioactivity Density of the Seawater in the Central Area of Sendai Bay (T-MG5) Lower Layer (Bq/L)



Radioactivity Density of the Seawater at Offshore of Abukuma River (T-MG6) Upper Layer (Bq/L)



Radioactivity Density of the Seawater at Offshore of Abukuma River (T-MG6) Middle Layer (Bq/L)



Radioactivity Density of the Seawater at Offshore of Abukuma River (T-MG6) Lower Layer (Bq/L)

