**Supplement 2. Measurements used for Ru-106 source identification[[1]](#footnote-1)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Country** | **Station** | **Start date** | **End date** | **Value** | **Reference** |
| Ukraine | Rivne NPP | 24.09.2017 | 28.09.2017 | 0.0[[2]](#footnote-2) | This work[[3]](#footnote-3) |
| Ukraine | Rivne NPP | 29.09.2017 | 06.10.2017 | 0.00139 | Masson et al., 2019[[4]](#footnote-4) |
| Ukraine | Rivne NPP | 04.10.2017 | 06.10.2017 | 0.000028 | This work |
| Ukraine | Zaporizhya NPP | 24.09.2017 | 25.09.2017 | 0.0 | This work1 |
| Ukraine | Zaporizhya NPP | 25.09.2017 | 02.10.2017 | 0.023 | Masson et al., 2019 |
| Ukraine | SouthUkraine NPP | 26.09.2017 | 03.10.2017 | 0.029 | Masson et al., 2019 |
| Ukraine | South Ukraine NPP | 27.09.2017 | 04.10.2017 | 0.024 | Masson et al., 2019 |
| Ukraine | South Ukraine NPP | 28.09.2017 | 05.10.2017 | 0.024 | Masson et al., 2019 |
| Ukraine | South Ukraine NPP | 29.09.2017 | 06.10.2017 | 0.016 | This work |
| Ukraine | Khmelnitsky NPP | 25.09.2017 | 02.10.2017 | 0.006878 | This work1 |
| Ukraine | Khmelnitsky NPP | 26.09.2017 | 04.10.2017 | 0.001413 | This work1 |
| Sweden | Stockholm | 30.09.2017 | 01.10.2017 | 3.90E-05 | Ramebäck et al., 2018 |
| Sweden | Stockholm | 01.10.2017 | 02.10.2017 | 0.0206 | Ramebäck et al., 2018 |
| France | Cadenazzo Ticino | 25.09.2017 | 02.10.2017 | 0.00005 | Masson et al., 2019 |
| France | Grenoble | 03.10.2017 | 04.10.2017 | <0.00005[[5]](#footnote-5) | IRSN[[6]](#footnote-6) |
| Czech | Praha | 29.09.2017 | 02.10.2017 | 0.0131 | Masson et al., 2019 |
| Czech | Praha | 02.10.2017 | 03.10.2017 | 0.00138 | Masson et al., 2019 |
| Czech | Praha | 03.10.2017 | 04.10.2017 | 0.0001 | Masson et al., 2019 |
| Austria | Alt-Prerau | 25.09.2017 | 02.10.2017 | 0.011 | Masson et al., 2019 |
| Austria | Bregenz | 26.09.2017 | 03.10.2017 | <0.000017 | Masson et al., 2019 |
| Austria | Graz | 02.10.2017 | 03.10.2017 | 0.0362 | Masson et al., 2019 |
| Austria | Graz | 03.10.2017 | 04.10.2017 | 0.0124 | Masson et al., 2019 |
| Austria | Graz | 04.10.2017 | 05.10.2017 | 0.0013 | Masson et al., 2019 |
| Austria | Graz | 05.10.2017 | 06.10.2017 | 0.0008 | Masson et al., 2019 |
| Austria | Innsbruck | 02.10.2017 | 04.10.2017 | <0.0003 | Masson et al., 2019 |
| Austria | Innsbruck | 04.10.2017 | 05.10.2017 | <0.001 | Masson et al., 2019 |
| Austria | Innsbruck | 05.10.2017 | 06.10.2017 | <0.001 | Masson et al., 2019 |
| Russia | Dubna | 04.10.2017 | 05.10.2017 |  | CTBTO[[7]](#footnote-7) |
| Russia | Kirov | 06.10.2017 | 07.10.2017 |  | CTBTO5 |
| Russia | Zalesovo | 02.10.2017 | 03.10.2017 |  | CTBTO5 |
| Russia | Zalesovo | 03.10.2017 | 04.10.2017 |  | CTBTO5 |
| Russia | Zalesovo | 04.10.2017 | 05.10.2017 |  | CTBTO5 |
| Russia | Zalesovo | 05.10.2017 | 06.10.2017 |  | CTBTO5 |
| Russia | Zalesovo | 07.10.2017 | 08.10.2017 |  | CTBTO5 |
| Russia | Peleduj | 04.10.2017 | 05.10.2017 |  | CTBTO5 |
| Russia | Peleduj | 05.10.2017 | 06.10.2017 |  | CTBTO5 |
| Russia | Peleduj | 06.10.2017 | 07.10.2017 |  | CTBTO5 |
| Russia | Peleduj | 07.10.2017 | 08.10.2017 |  | CTBTO5 |
| Kuwait | Kuwait City | 03.10.2017 | 04.10.2017 |  | CTBTO5 |
| Kuwait | Kuwait City | 04.10.2017 | 05.10.2017 |  | CTBTO5 |
| Kuwait | Kuwait City | 05.10.2017 | 06.10.2017 |  | CTBTO5 |
| Kuwait | Kuwait City | 07.10.2017 | 08.10.2017 |  | CTBTO5 |
| Sweden | Stockholm | 02.10.2017 | 03.10.2017 | 0.01189 | Ramebäck et al., 2018 |
| Finland | Helsinki | 05.10.2017 | 06.10.2017 | 0.0 | Masson et al., 2019 |
| Finland | Helsinki | 03.10.2017 | 04.10.2017 | 0.000849 | Masson et al., 2019 |
| Finland | Helsinki | 28.09.2017 | 03.10.2017 | 0.000064 | Masson et al., 2019 |
| Germany | Arkona | 25.09.2017 | 02.10.2017 | 0.000014 | Masson et al., 2019 |
| Germany | Gorlitz | 25.09.2017 | 02.10.2017 | 0.00491 | Masson et al., 2019 |
| Germany | Greifswald | 25.09.2017 | 02.10.2017 | 0.000009 | Masson et al., 2019 |
| Germany | Gorlitz | 02.10.2017 | 04.10.2017 | 0.00457 | Masson et al., 2019 |
| Hungary | Budapesht |  |  | 0.0027 | IAEA, 2017[[8]](#footnote-8) |
| Hungary | Budapesht |  |  | 0.0017 | IAEA, 20176 |
| Hungary | Budapesht |  |  | 0.00199 | IAEA, 20176 |
| Hungary | Budapesht |  |  | 0.01195 | IAEA, 20176 |
| Hungary | Budapesht | 29.09.2017 | 02.10.2017 | 0.03376 | Masson et al., 2019 |
| Hungary | Budapesht | 02.10.2017 | 03.10.2017 | 0.02758 | Masson et al., 2019 |
| Hungary | Budapesht | 03.10.2017 | 04.10.2017 | 0.0099 | Masson et al., 2019 |
| Hungary | Budapesht | 04.10.2017 | 05.10.2017 | 0.00208 | Masson et al., 2019 |
| Russia | Peterburg | 02.10.2017 | 06.10.2017 | 0.000115 | Rosdhydromet, 2017b |
| Russia | Ekaterenburg | 26.09.2017 | 05.10.2017 | 0.0 | Rosdhydromet, 2017a |
| Russia | Obninsk |  |  | 0.0 | IAEA, 20176 |
| Russia | Murmansk |  |  | 0.0001 | IAEA, 20176 |
| Belarus | Braslaw | 03.10.2017 | 04.10.2017 | 0.0027 | Masson et al., 2019 |
| Greece | Athens | 27.09.2017 | 03.10.2017 | 0.00264 | Masson et al., 2019 |
| Greece | Athens |  |  | 0.00285 | IAEA, 20176 |
| France | Orsay |  |  | 0.0 | IAEA, 20176 |
| France | Charleville- Mézières | 26.09.2017 | 03.10.2017 | 0.0 | Masson et al., 2019 |
| Germany | Angermünde | 25.09.2017 | 02.10.2017 | 0.00016 | Masson et al., 2019 |
| Norway | Orland | 25.09.2017 | 02.10.2017 | 0.000074 | Masson et al., 2019 |
| Norway | Orland | 02.10.2017 | 03.10.2017 | 0.000213 | Masson et al., 2019 |
| Norway | Skibotn | 25.09.2017 | 02.10.2017 | 0.000003 | Masson et al., 2019 |
| Turkey | Istanbul |  |  | 0.0003 | IAEA, 20176 |
| Italy | Milano | 29.09.2017 | 02.10.2017 | 0.00249 | Masson et al., 2019 |
| Italy | Milano | 02.10.2017 | 03.10.2017 | 0.00496 | Masson et al., 2019[[9]](#footnote-9) |
| Italy | Milano | 03.10.2017 | 04.10.2017 | 0.0035 | Masson et al., 2019 |
| Italy | Milano | 04.10.2017 | 05.10.2017 | 0.00309 | Masson et al., 2019 |
| Italy | Milano | 05.10.2017 | 06.10.2017 | 0.0017 | Masson et al., 2019 |
| Italy | Milano | 06.10.2017 | 08.10.2017 | <0.00062 | Masson et al., 2019 |
| Italy | Firenze | 30.09.2017 | 02.10.2017 | 0.0005 | Masson et al., 2019 |
| Italy | Firenze | 02.10.2017 | 03.10.2017 | 0.0014 | Masson et al., 2019 |
| Italy | Firenze | 03.10.2017 | 04.10.2017 | 0.0002 | Masson et al., 2019 |
| Italy | Firenze | 04.10.2017 | 05.10.2017 | 0.0003 | Masson et al., 2019 |
| Romania | Arad | 30.09.2017 | 02.10.2017 | 3.22E-02 | Masson et al., 2019 |
| Romania | Bucuresti | 28.09.2017 | 01.10.2017 | 4.80E-02 | Masson et al., 20196 |
| Romania | Constanta | 28.09.2017 | 30.09.2017 | 4.40E-02 | Masson et al., 20196 |
| BosniaHercegovina | Sarajevo | 24.09.2017 | 08.10.2017 | 4.02E-03 | Masson et al., 20196 |
| Croatia | Zagreb | 29.09.2017 | 08.10.2017 | 1.33E-02 | Masson et al., 2019 |
| Ukraine | Baryshevka | 29.09.2017 | 03.10.2017 | 1.39E-02 | Masson et al., 2019 |
| Romania | Baia\_Mare | 30.09.2017 | 03.10.2017 | 5.71E-02 | Masson et al., 20196 |
| Russia | Volgograd | 26.09.2017 | 01.10.2017 | 1.36E-02 | Roshydromet, 2017b |
| Russia | Tsymliansk | 26.09.2017 | 01.10.2017 | 1.90E-02 | Roshydromet, 2017b |
| Russia | Kursk | 27.09.2017 | 28.09.2017 | 1.20E-04 | Roshydromet, 2017b |
| Russia | Bolshaya Murta | 04.10.2017 | 05.10.2017 | 7.85E-05 | Roshydromet, 2017b |
| Russia | Bolshaya Murta | 06.10.2017 | 07.10.2017 | 0.000113 | Roshydromet, 2017b |
| Russia | Suhobzinskoe | 06.10.2017 | 07.10.2017 | 0.000208 | Roshydromet, 2017b |
| Russia | Zasheek | 03.10.2017 | 04.10.2017 | 8.20E-05 | Roshydromet, 2017b |
| Russia | Zasheek | 04.10.2017 | 05.10.2017 | 2.40E-05 | Roshydromet, 2017b |
| Russia | Murmansk | 04.10.2017 | 05.10.2017 | 1.37E-04 | Roshydromet, 2017b |
| Russia | Samara | 01.10.2017 | 02.10.2017 | 3.40E-05 | Roshydromet, 2017b |
| Russia | Samara | 02.10.2017 | 03.10.2017 | 1.15E-04 | Roshydromet, 2017b |
| Russia | Samara | 03.10.2017 | 04.10.2017 | 3.20E-05 | Roshydromet, 2017b |
| Russia | Samara | 04.10.2017 | 05.10.2017 | 5.10E-05 | Roshydromet, 2017b |
| Russia | Samara | 05.10.2017 | 06.10.2017 | 2.60E-05 | Roshydromet, 2017b |
| Russia | Samara | 06.10.2017 | 07.10.2017 | 2.50E-05 | Roshydromet, 2017b |
| Russia | Samara | 07.10.2017 | 08.10.2017 | 5.10E-05 | Roshydromet, 2017b |
| Russia | Balakovo | 01.10.2017 | 08.10.2017 | 2.10E-05 | Roshydromet, 2017b |
| Russia | Kalinin NPP | 24.09.2017 | 03.10.2017 | 1.40E-06 | Roshydromet, 2017b |
| Russia | Novovoronezh NPP | 26.09.2017 | 02.10.2017 | 4.30E-04 | Roshydromet, 2017b |
| Russia | Novovoronezh NPP | 02.10.2017 | 07.10.2017 | 1.00E-04 | Roshydromet, 2017b |
| Russia | Rostov NPP | 29.09.2017 | 08.10.2017 | 3.60E-03 | Roshydromet, 2017b |
| Russia | JSC «SSC RIAR» | 24.09.2017 | 29.09.2017 | 2.75E-02 | Roshydromet, 2017b |
| Russia | JSC «SSC RIAR» | 29.09.2017 | 06.10.2017 | 0.0 | Roshydromet, 2017b |
| Russia | Atomflot | 25.09.2017 | 02.10.2017 | 0.0 | Roshydromet, 2017b |
| Russia | Atomflot | 02.10.2017 | 08.10.2017 | 3.16E-05 | Roshydromet, 2017b |
| Russia | El-Dabaa | 30.09.2017 | 08.10.2017 | 3.80E-04 | Roshydromet, 2017b |
| Russia | Smolensk NPP | 24.09.2017 | 08.10.2017 | 5.00E-06 | Roshydromet, 2017b |
| Russia | Kalskaya NPP | 28.09.2017 | 05.10.2017 | 1.79E-02 | Roshydromet, 2017b |
| Russia | Leningrad NPP | 25.09.2017 | 06.10.2017 | 7.30E-05 | Roshydromet, 2017b |

1. Please, refer to original works, when using measurement values [↑](#footnote-ref-1)
2. ‘Zero’ measurement means that the value was less than the unknown lower detection limit; in such case we used the value of 1·10-6 Bq·m-3 [↑](#footnote-ref-2)
3. Averaged over all measurements performed by NPP for the corresponding date [↑](#footnote-ref-3)
4. References are provided in paper [↑](#footnote-ref-4)
5. If upper limit of measurement is indicated in this case table, then we used the corresponding value in calculations [↑](#footnote-ref-5)
6. <https://www.irsn.fr/EN/newsroom/News/Pages/20171004-Detection-ruthenium-106-in-the-air-in-Europe.aspx#1> [↑](#footnote-ref-6)
7. Unpublished value measured by CTBTO station and provided to authors by State Nuclear Inspectorate of Ukraine; value not displayed [↑](#footnote-ref-7)
8. The value is available in IAEA, 2017, however the sampling time of measurements was available to authors through private communication and is not displayed here [↑](#footnote-ref-8)
9. Derived value from the data in the cited work by merging measurements collected during different time intervals [↑](#footnote-ref-9)