A Big Earth Data Platform for Three Poles

**Spatial distribution data set of perfluoroalkyl acids (PFAAs) in the major rivers of the Tibetan Plateau（2020-2021）**

1、Description

This dataset includes the concentration and distribution data of poly- and perfluoroalkyl substances (PFAS) in the Yarlung Tsangpo River and three major rivers in Hengduan Mountain region. The samples were collected in 2020 and 2021 from 83 locations in four major rivers, including the Yarlung Tsangpo, Nu, Lancang and Jinsha Rivers. The water samples were prepared by solid phase extraction, purification, concentration steps, and then determined by HPLC (ThermoFisher Scientific, USA) coupled to a TSQ Quantiva triple quadrupole mass spectrometer. The target compounds included 10 perfluorinated carboxylic acids (PFCAs) and 3 perfluorinated sulfonic acids (PFSAs). Specifically, perfluorobutanoic acid
(PFBA), perfluoropentanoic acid (PFPeA), perfluorohexanoic acid (PFHxA), perfluoroheptanoic acid (PFHpA), perfluorooctanoic acid (PFOA),perfluorononanoic acid (PFNA), perfluorodecanoic acid (PFDA), perfluoroundecanoic acid (PFUnDA), perfluorododecanoic acid (PFDoA) and perfluorotridecanoic acid (PFTrA), perfluorobutanesulfonic acid (PFBS), perfluorohexanesulfonic acid (PFHxS), and perfluorooctanesulfonic acid (PFOS). In the process of sample pretreatment, isotope labeled recovery standards were added, and the sample recovery was calculated to be between 53% and 96%. Conventional water quality test parameters include temperature, dissolved oxygen, pH, conductivity, salinity, and dissolved organic carbon. The accuracy of the parameters were 0.1℃, 0.01mg/L, 0.01, 0.1μS/cm, 0.01ppt and 0.01mg/L, respectively. Among them, the dissolved organic carbon was measured by TOC analyzer, and the other water quality parameters were measured by YSI ProPlus portable multi-parameter water quality instrument. This dataset can provide a scientific basis for mapping the spatial distribution of organic pollution over the Tibetan Plateau and assessing the water quality safety of water towers in Asia.

2、Keywords

Theme：river,Organic pollutants,Water Resources,Environment Pollution and Control
Discipline：Human-nature Relationship
Places：Hengduan Mountains, Salween, Tibet, Jinsha River, Lantsang River, Yarlung Tsangpo
Time：2020-2021

3、Data details

1.Scale：None

2.Projection：

3.Filesize：0.054MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：31.8 | - |
| west：82.9 | - | east：101.8 |
| - | south：25.4 | - |

5、Time frame:None--None

6、Reference method

References to data:

REN Jiao , WANG Xiaoping. Spatial distribution data set of perfluoroalkyl acids (PFAAs) in the major rivers of the Tibetan Plateau（2020-2021）. A Big Earth Data Platform for Three Poles, doi:10.11888/HumanNat.tpdc.2728942022

References to articles:

Ren, J., Yu, M.J., Chen, F., Cui, L., Zhang, Y.Z., Li, J.M., Chen, M.K., Wang, X.P., Fu, J.J. (2023). Occurrence, spatial heterogeneity, and risk assessment of perfluoroalkyl acids (PFAAs) in the major rivers of the Tibetan Plateau. Science of The Total Environment, 856, 159026.

7、Supporting project information

Second Tibetan Plateau Scientific Expedition Program

8、Data resource provider

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