Data Intake Processing and Verification Report

Background Information

- **Original Dataset Name:** CarbonTracker-CH4 2023
- **GHG Center Dataset Title:** CarbonTracker-CH$_4$ Isotopic Methane Inverse Fluxes
- **Dataset Provider:** NOAA
- **Date Obtained:** November 2024
- **Location Obtained From:** https://doi.org/10.25925/40jt-qd67
    - "Fluxes" data only
      (https://gml.noaa.gov/aftp/products/carbontracker/ch4/CT-CH4-2023/fluxes/)
    - A total methane emissions layer was calculated by the data provider and delivered directly to the US GHG Center.
- **Data Location in GHG Center:** ct-ch4-monthgrid-v2023
- **Data POC(s):** Dr. Lori Bruhwiler, Dr. Youmi Oh, Dr. Sourish Basu
- **Dataset File Type(s):** NetCDF
- **Projection (if different from WGS84):** NA

Data Transfer Confirmation

An SHA-256 checksum is used to detect high-level errors within data transmissions. Results from individual checksum file comparisons of pre-transfer and post-transfer shows all files were transferred successfully and no individual files had any transfer issues.

Data Intake Process

- https://us-ghg-center.github.io/ghgc-docs/data_workflow/ct-ch4-monthgrid-v2023_Data_Flow.html

Overall Dataset Statistics

- Statistics across all files for all variables:

	Minimum (g CH$_4$/m²/year)	Maximum (g CH$_4$/m²/year)	Mean (g CH$_4$/m²/year)	Standard Deviation
Original Data	0.0	759.428	0.405	0.81
Transformed Data	0.0	759.428	0.405	0.81

- Distribution of values in g $CH_4/m^2/year$ across all files for Total CH_4 emission variable and Microbial CH_4 emission variable:

- Statistics for Fossil CH_4 emission in 2015:

	Minimum (g $CH_4/m^2/year$)	Maximum (g $CH_4/m^2/year$)	Mean (g $CH_4/m^2/year$)	Standard Deviation
Original Data	0.0	340.215	0.231	0.112
Transformed Data	0.0	340.215	0.231	0.112

- Link to transformation record in [Jupyter Notebook](#)
- All values are in expected range

Summary

- We are confident that the transformation and display of data in the GHG Center is correct
- There were no problems identified in the data
- Link to [Data Usage Notebook](#)
- Link to [US GHG Center Data Catalog overview page](#)

Report Completed on: 11/19/2024
MSFC POC for questions: [Jeanné le Roux](#), [Siddharth Chaudhary](#)