Data Intake Processing and Verification Report

Background Information

- **Original Dataset Name:** ODIAC Fossil Fuel Emission Dataset
- **GHG Center Dataset Title:** ODIAC Fossil Fuel CO_2 Emissions
- **Dataset Provider:** NASA/NIES
- **Date Obtained:** June 5, 2025
- **Location Obtained from:** http://doi.org/10.17595/20170411.001
- **Data Location in GHG Center:** odiac-ffco2-monthgrid-v2024
- **Data POC(s):** Dr. Tomohiro Oda
- **Dataset File Type(s):** GeoTIFF
- **Projection (if different from WGS84):** NA

Data Transfer Confirmation

An MD5 checksum is used to detect high-level errors within data transmissions

- Results for individual checksum file comparisons of pre-transfer and post-transfer for few files are shown below:

Filename	MD5 Original file	MD5 Downloaded file
odiac2024_1km_excl_intl_0001.tif.gz	9c3734b5893a415e24ceea21278a59e7	9c3734b5893a415e24ceea21278a59e7
odiac2024_1km_excl_intl_0005.tif.gz	7678b2807815e3d4cbd133a44d12991f	7678b2807815e3d4cbd133a44d12991f

- All files were transferred successfully
- Report any individual file issues: NA

Data Intake Process

- https://us-ghg-center.github.io/ghgc-docs/data_workflow/odiac-ffco2-monthgrid-v2024_Data_Flow.html

Dataset Statistics for 2023:

- Mean, min, max for 2023:

	Minimum	Maximum	Mean	Standard Deviation
Original Dataset	0.0	1639305.5	0.91	273.823

Cog transformed dataset	0.0	1639305.5	0.91	273.820

- File range (most cases will be all files)
- Bounding Box of all data
- Link to transformation record in Jupyter Notebook: https://github.com/US-GHG-Center/ghgc-docs/blob/main/cog_transformation_scripts/odiac-ffco2-monthgrid-v2024_Transformation_Code.py
- All values are in expected range (catches out of range values)

Specific, Random Checks / Visual Confirmation

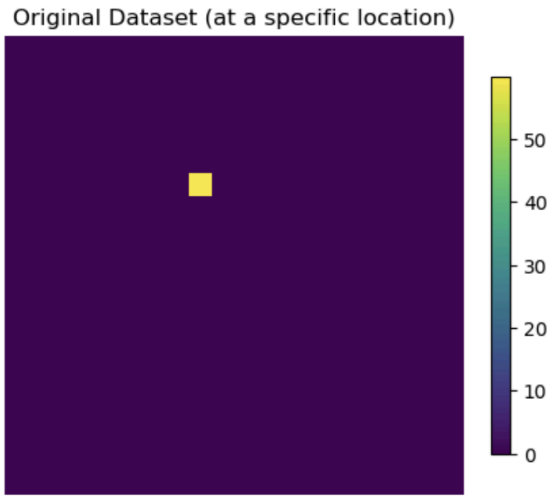
- More detailed statistics for few files are shown below (randomly chosen)
    - Statistics were performed for the following:
        - February, 2000:

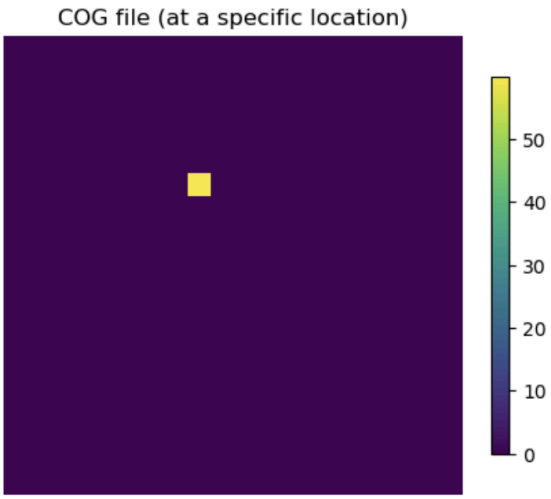
	Minimum	Maximum	Mean	Standard Deviation
Original Dataset	0.0	864731.375	0.585	193.043
Cog transformed dataset	0.0	864731.375	0.585	193.043

        - November, 2023:

	Minimum	Maximum	Mean	Standard Deviation
Original Dataset	0.0	1270559.375	0.859	256.01
Cog transformed dataset	0.0	1270559.375	0.859	256.01

- The data comparison for May, 2010 was performed at a specific location by subsetting using the indices [2430:2450, 1200:1220]





	Minimum	Maximum	Mean	Standard Deviation
Original Dataset	0.0	51.346	0.1283	2.564
Cog transformed dataset	0.0	51.346	0.1283	2.564

Summary

- We are confident that the transformation and display of data in GHG Center is correct
- These are no problems we have identified in the data.
- Link to Data Usage Notebook
- Link to US GHG Center Data Catalog overview page

Report Completed on:
MSFC POC for questions: Deborah Smith, Siddharth Chaudhary