

# GHG Soil Daily Analysis Report

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May 13, 2025

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1	CO2 flux flags are classified as Missing, Negative ( $< 0$ ), Very Low ( $< 100$ ), Plausible (100 - 4000), and Extremely High ( $> 4000$ ), with units in <b>**mg C m<sup>-2</sup> day<sup>-1</sup></b> .	8
2	N2O flux flags are classified as Missing, Negative ( $< 0$ ), Below Detection ( $< 0.01$ ), Plausible (0.01 - 5), and Extremely High ( $> 5$ ), with units in <b>**mg N m<sup>-2</sup> day<sup>-1</sup></b> .	8

### 0.1 1. Load and Process Data

```
## Number of rows in final_data: 101
```

### 0.2 2. Checking Valid & Invalid

```
## Rows after filtering missing and -9999 values: 100
```

Table 1: Summary of Invalid or Missing Rows

Row Type	Count	Percentage (%)
Valid Row	100	100

<sup>a</sup> 'Has -9999 Only' indicates rows with placeholder values (-9999), but no other missing data.

Table 2: Monthly Summary of Rows with -9999 in Specific Columns

MonthYear	TotalRows	RowsWith_One_Column	RowsWith_Multiple_Columns	RowsWith_All_Columns
2025-04	100	0	0	0

0.3 3. Sensor Failures

0.4 4. Time Gap Categorization & Flagging

```
## [1] DateTime      TimeDiff_min GapCategory  TimeGapFlag
## <0 rows> (or 0-length row.names)
```

0.5 5. Summary & Visualization

```
## [1] "Skewness of TimeDiff_min: NaN"
```

**Figure 1: Distribution of Time Gap Durations**  
Filtered to gaps > 2 hour across sampling period

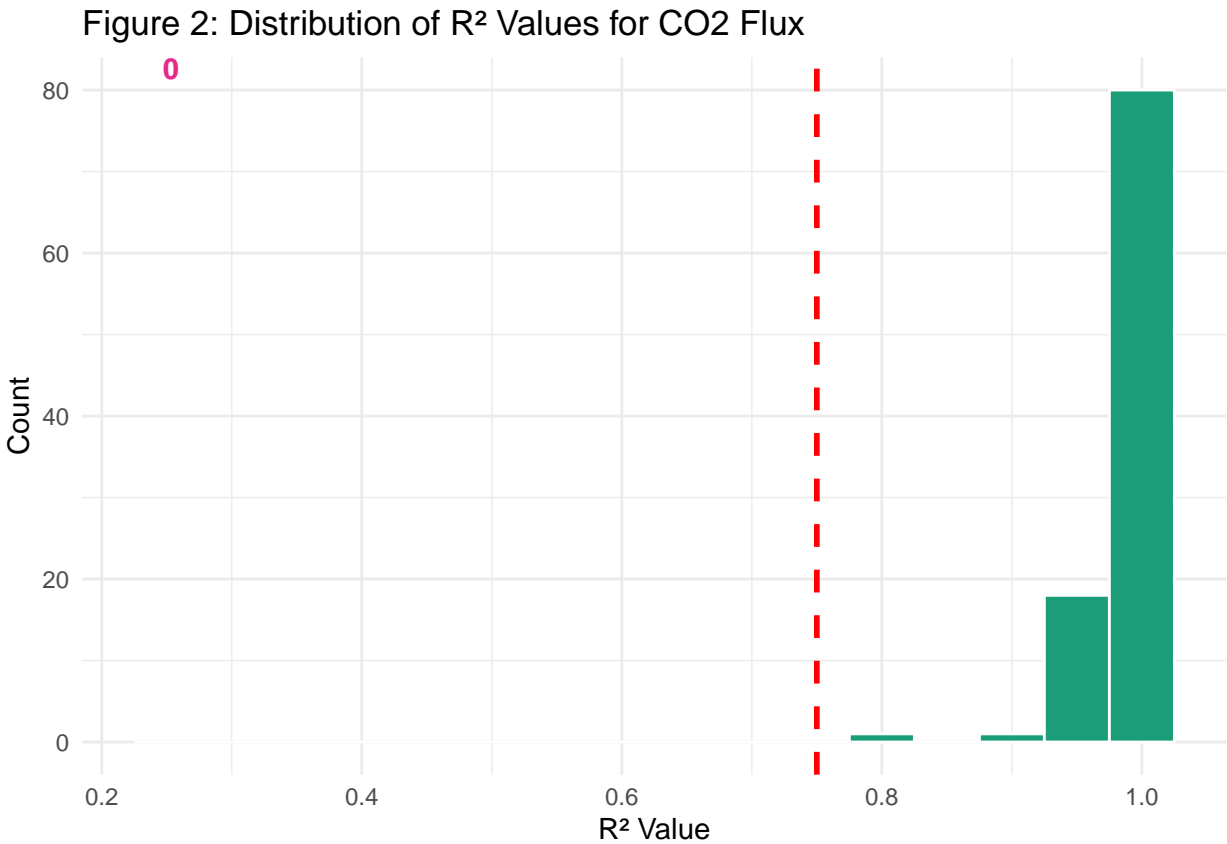
Count

Gap Duration Category

0.6 6. R2 Analysis

Table 3: Summary of R<sup>2</sup> Values for CO2 Flux (FCO2)

Total Records	R <sup>2</sup> >= 0.75	R <sup>2</sup> < 0.75	Percentage >= 0.75	Percentage < 0.75
100	100	0	100	0



## 7. CV Analysis

Table 4: Summary of CO2 Flux CV Flags

CO2 Flux CV Flag	Count	Percentage
Acceptable	83	83
Issue	1	1
Plausible	16	16

Table 5: Summary of N2O Flux CV Flags

N2O Flux CV Flag	Count	Percentage
Acceptable	31	31
Issue	50	50
Plausible	19	19

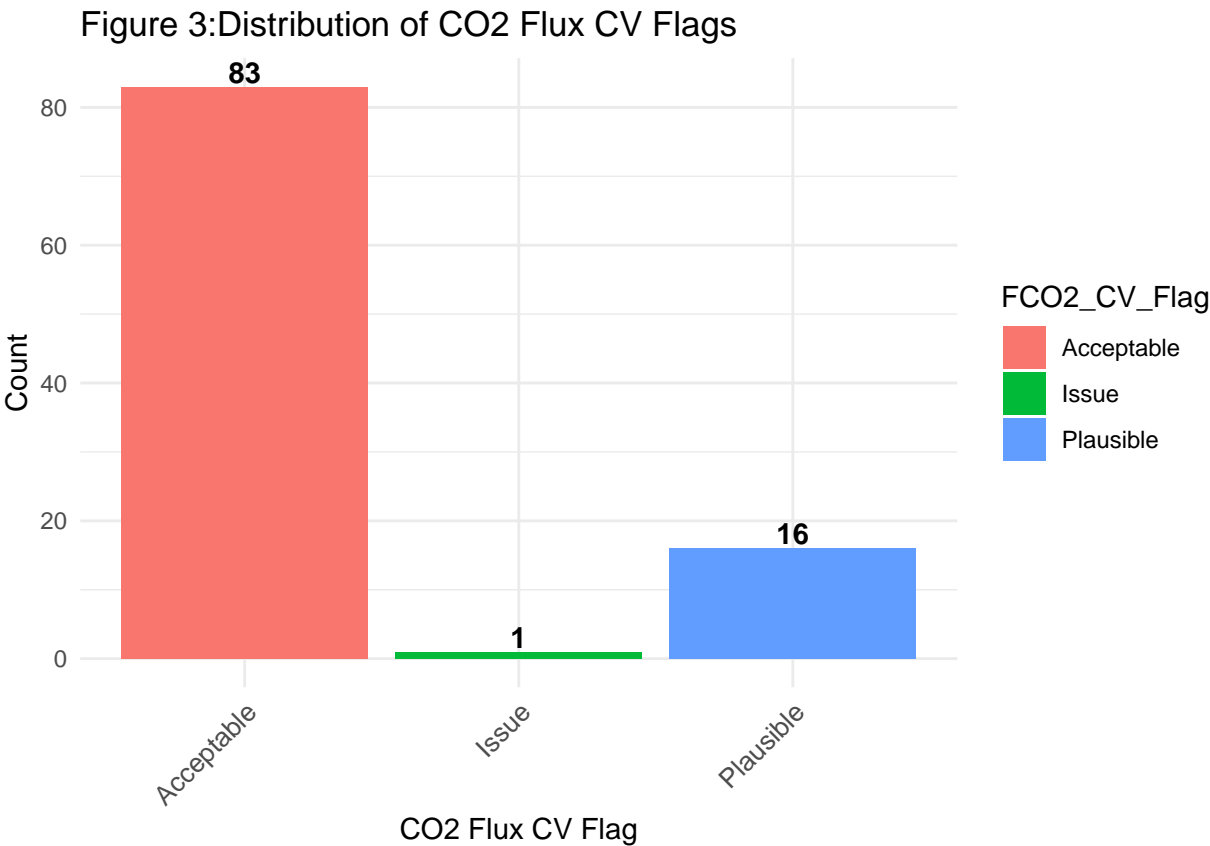
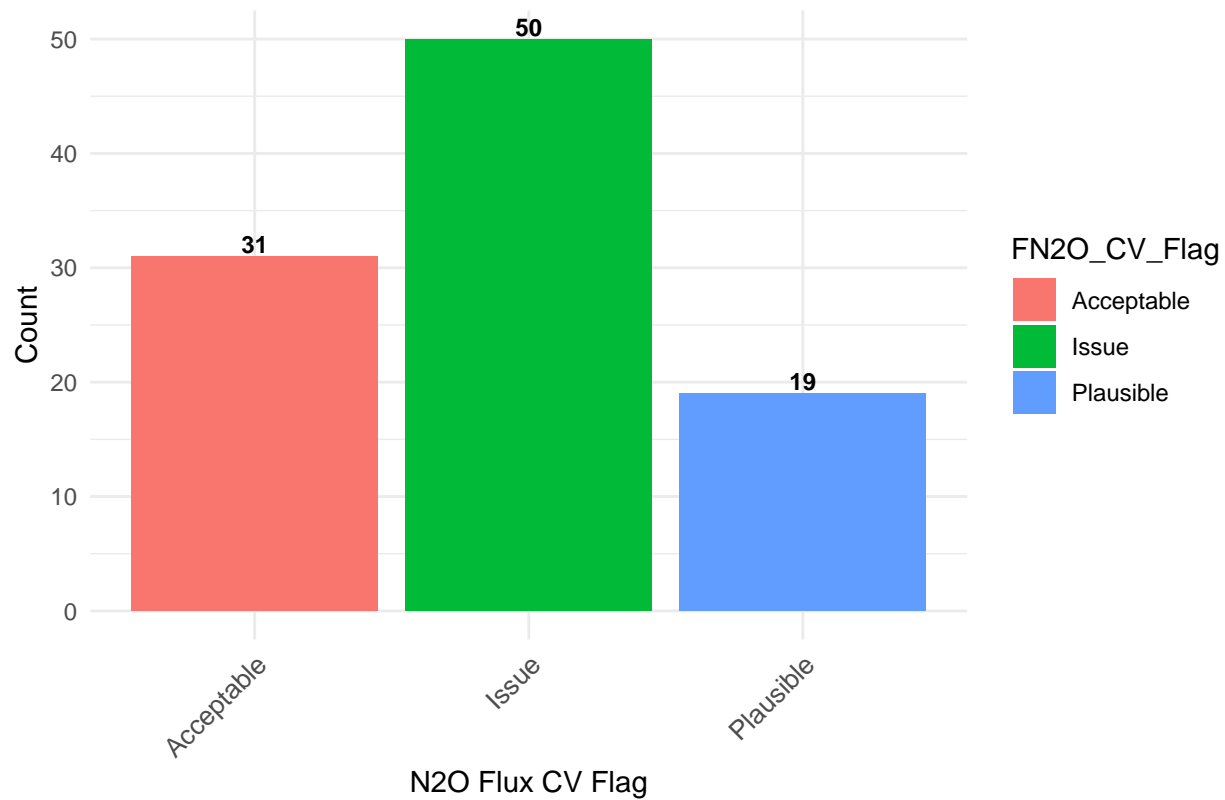


Table 6: Summary of CO<sub>2</sub> Flux Flags

CO Flux Flag	Count	Percentage
Very Low (<100)	100	100

Table 7: Summary of N<sub>2</sub>O Flux Flags

NO Flux Flag	Count	Percentage
Below Detection (<0.01)	22	22
Negative	36	36
Plausible	42	42

Figure 4: Distribution of N<sub>2</sub>O Flux CV Flags

# CO<sub>2</sub> and N<sub>2</sub>O flux CVs are classified as follows: **Ideal** (< 0.5), **Acceptable** (0.5 – 2), **Plausible** (2 – 3), and **Issue** (> 3), based on the level of variability in the measurements.



## 0.7 8. Flux Control

Figure 5: Distribution of CO<sub>2</sub> Flux Flags

Flagging based on FCO<sub>2</sub> flux values

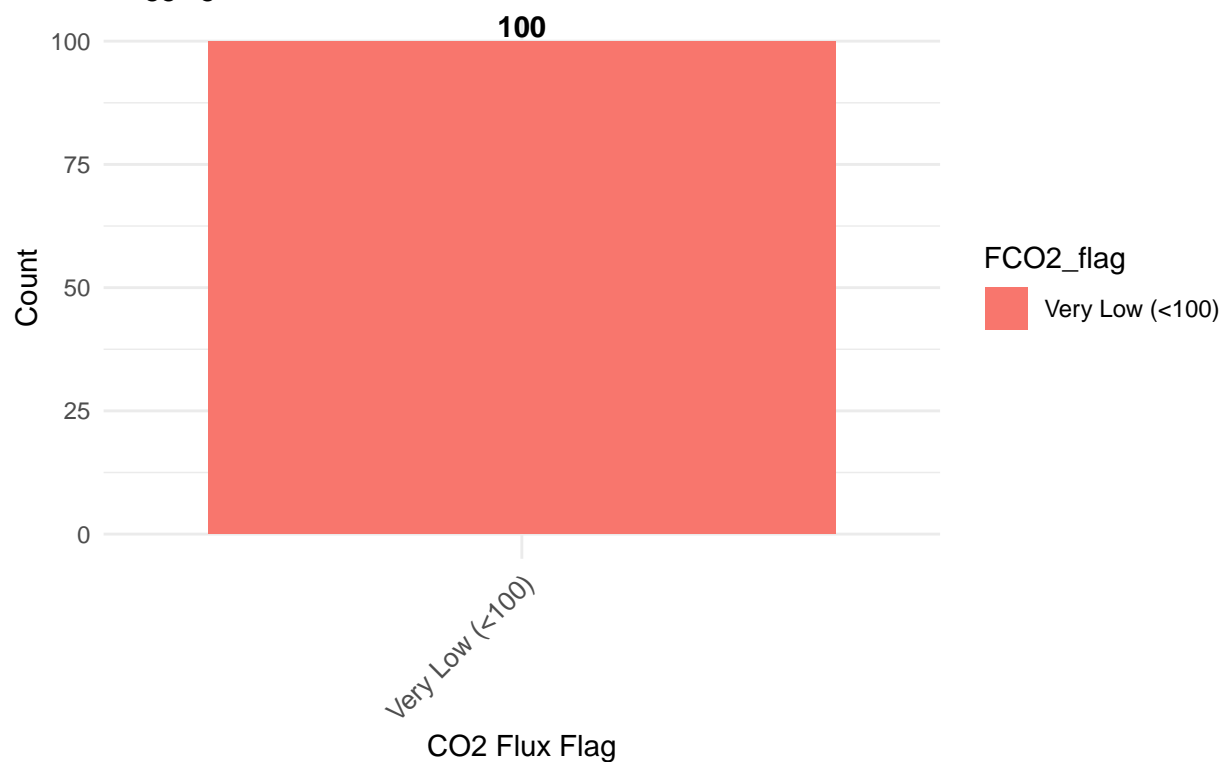
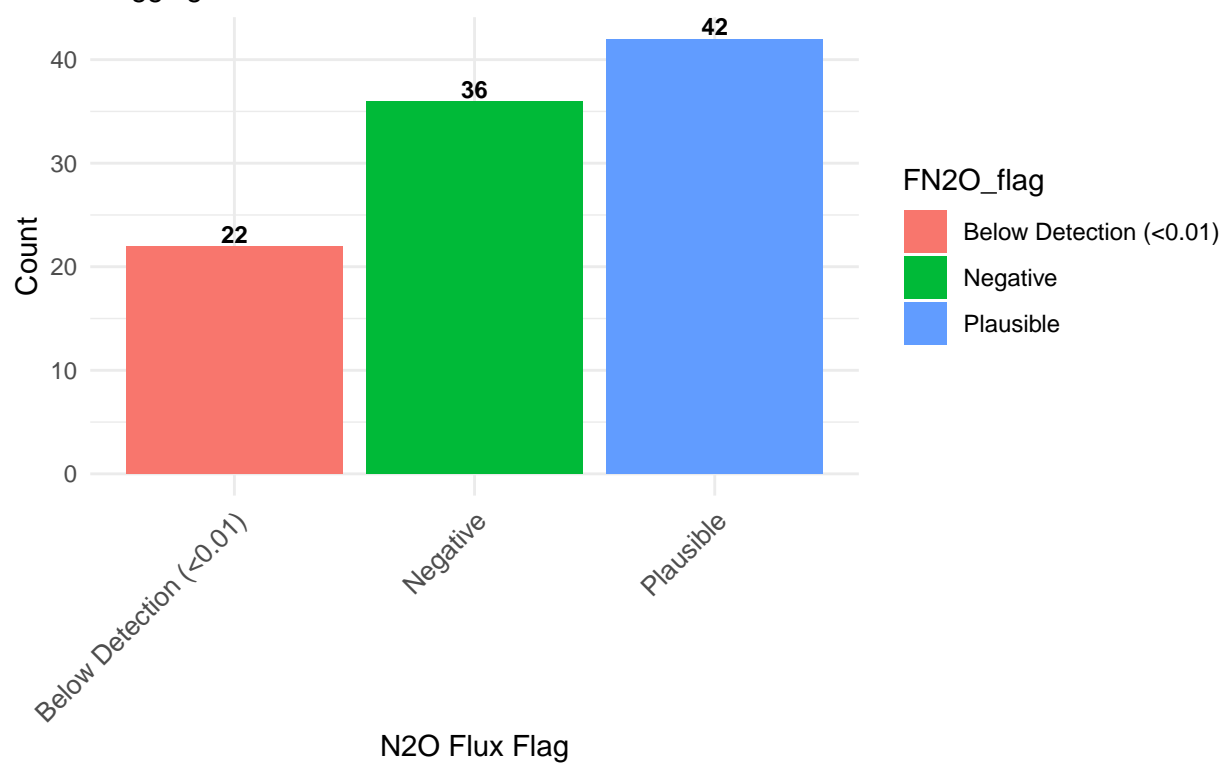


Figure 6: Distribution of N<sub>2</sub>O Flux Flags

Flagging based on FN<sub>2</sub>O flux values



- 1 CO<sub>2</sub> flux flags are classified as Missing, Negative ( $< 0$ ), Very Low ( $< 100$ ), Plausible (100 - 4000), and Extremely High ( $> 4000$ ), with units in **\*\*mg C m<sup>-2</sup> day<sup>-1</sup>**.
- 2 N<sub>2</sub>O flux flags are classified as Missing, Negative ( $< 0$ ), Below Detection ( $< 0.01$ ), Plausible (0.01 - 5), and Extremely High ( $> 5$ ), with units in **\*\*mg N m<sup>-2</sup> day<sup>-1</sup>**.