

# Results from the 2023 & 2024 PM2.5 Gravimetric Round Robin

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2024 NAAMC

# PM2.5 Round-Robin (RR) Background

- *PM2.5 method validation study conducted by EPA to evaluate performance of gravimetric labs across the national PM2.5 network. Supported by ORIA/NAREL until 2014; AAMG assumed responsibilities in 2016.*

## 2004-2014: Supported by ORIA/NAREL

- Conducted twice/year
- Included same 5-7 labs + 2 participation slots for a rotational selection of SLT labs.

## 2016-2018: AAMG assumed responsibilities

- Conducted once in 2018.
- OAQPS lab acted as referee for tare weights, filter-blanks, and sample filters.
- 19 SLT labs: Selected based on feedback from Regions.

## 2018-2019: Program stalled

- Data quality concerns w/ contractor resulted in OIG audit & suspension of contractor support.

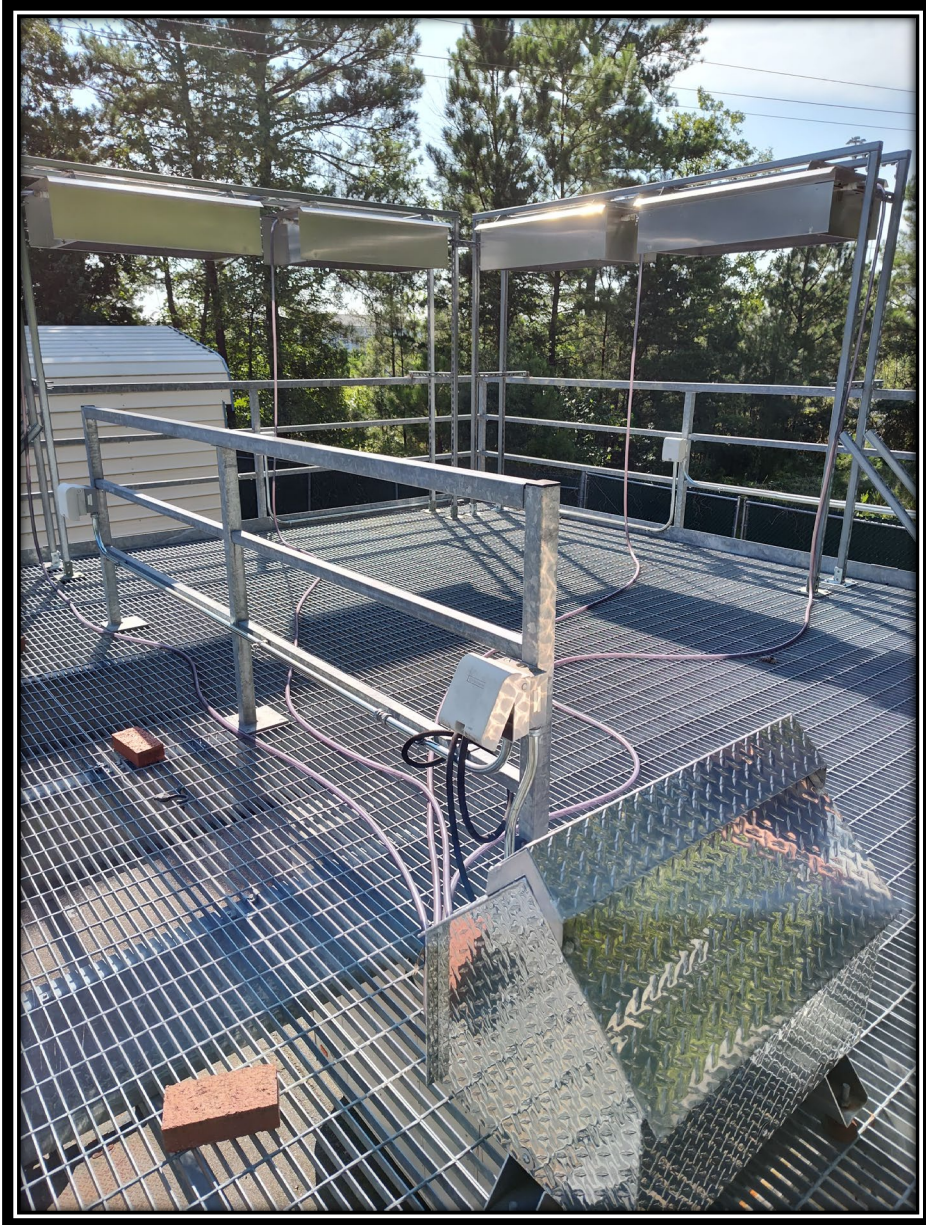
# 2024 Process Overview

| Participating Labs   |   |   |
|--|---|---|
| <b>2023</b>  |   | <b>2024</b>   |
| <ul style="list-style-type: none"><li>• <b>R4_Athens_PEP</b></li><li>• <b>Pace Labs (IML)</b></li><li>• Alaska DEC-Juneau</li><li>• Alaska DEC-Fairbanks</li></ul> | <ul style="list-style-type: none"><li>• Cook County</li></ul> | <ul style="list-style-type: none"><li>• <b>R4_Athens: PEP Lab</b></li><li>• <b>Pace Labs (IML)</b></li><li>• Massachusetts DEP</li><li>• Maryland DEH</li><li>• Hamilton Co, OH</li><li>• Virginia CLS</li><li>• Allegheny Co, PA</li></ul> |

| Sample Package to Test Labs   |
|---|
| <ul style="list-style-type: none"><li>• 3 Loaded Filters - <i>collected using custom PM2.5 sampler.</i></li><li>• 3 Blank Filters</li><li>• 1 Metal Check Weight</li><li>• 1 Trip blank</li></ul> |

| Overall Process  |
|--|
| <ol style="list-style-type: none"><li>1. OAQPS tare weigh of sample filters</li><li>2. OAQPS sample collection: 24hr, 48hr, 72hr</li><li>3. OAQPS post-weight - <i>after 10/30-day equilibration (2023/2024)</i></li><li>4. Shipping -&gt; Test Lab - <i>cold</i></li><li>5. Test lab weigh</li><li>6. Shipping -&gt; OAQPS - <i>not cold</i></li><li>7. OAQPS final weigh</li></ol> |

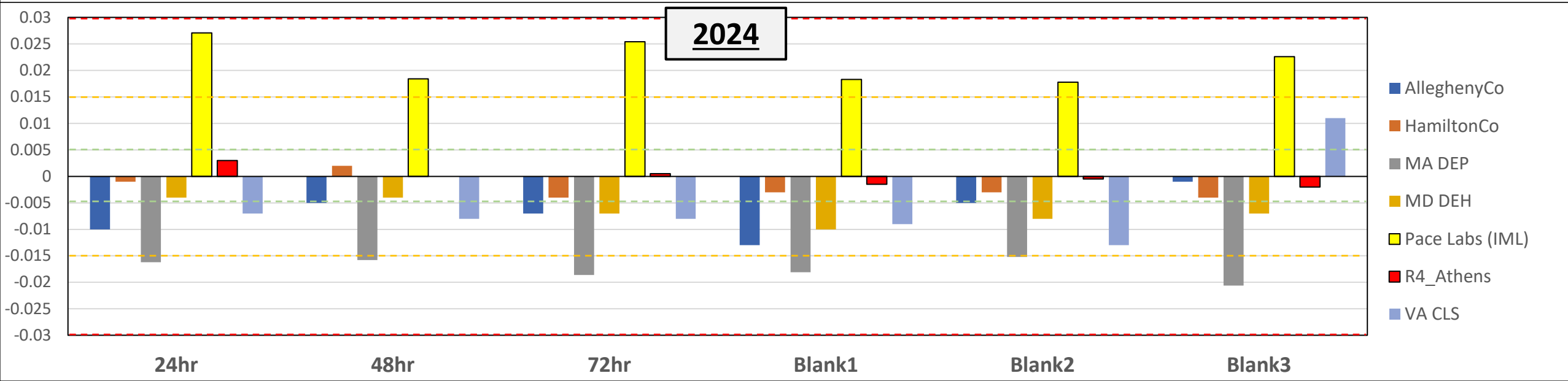
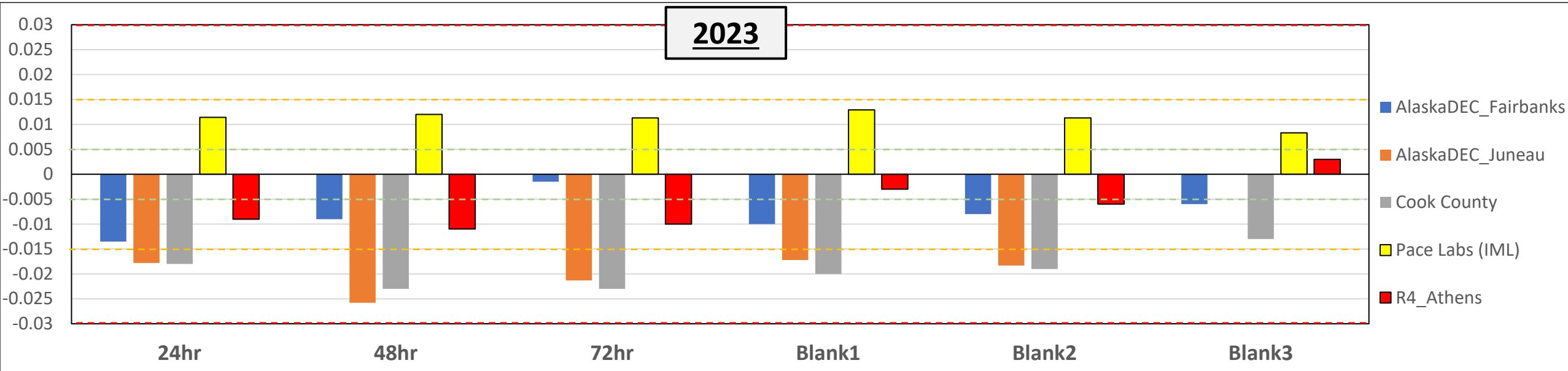
# OAQPS' Custom PM2.5 Sampler



# OAQPS vs Labs: Samples & Blanks

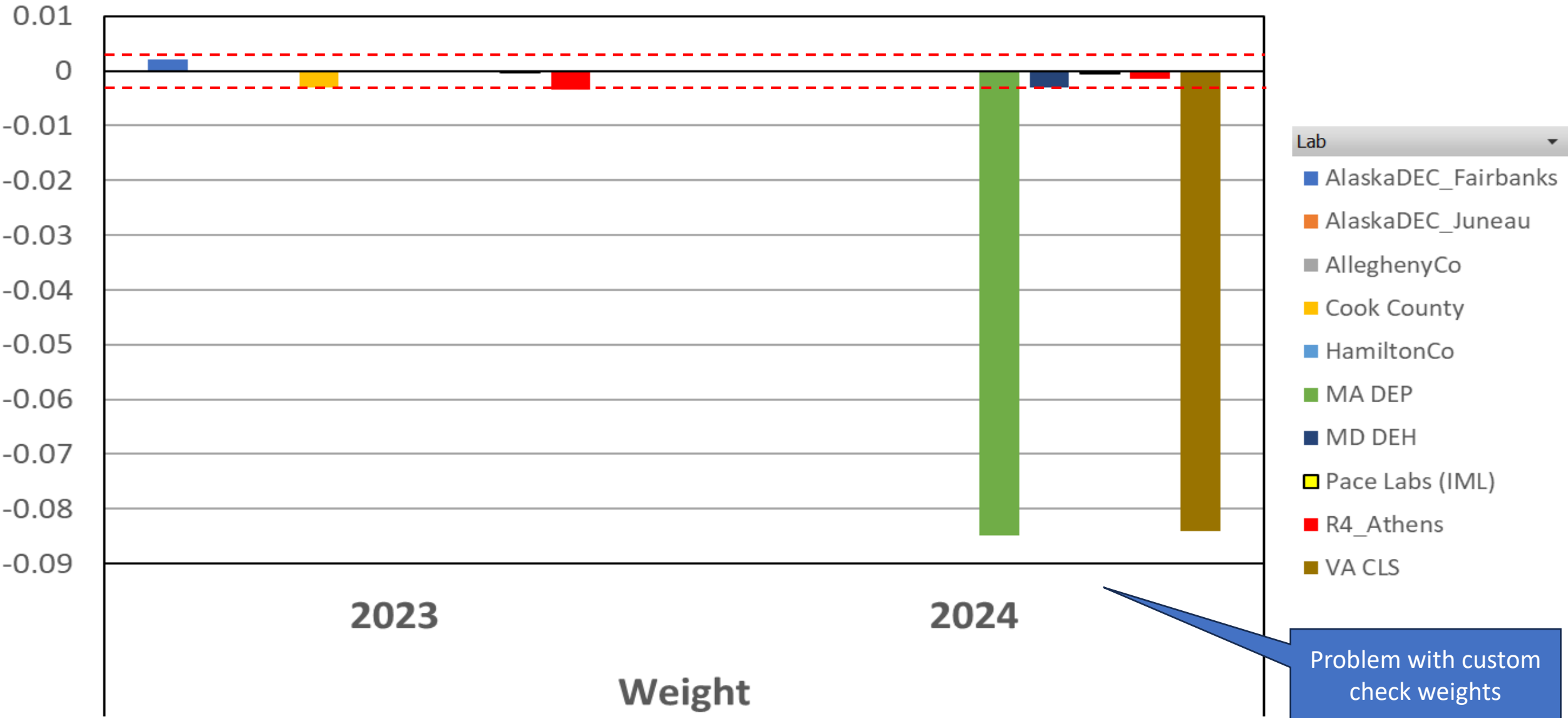
**PEP Criteria:**

- Field Blanks:  $\pm 0.030\text{mg}$
- Batch Duplicates:  $\pm 0.015\text{mg}$
- Blank Replicate :  $\pm 0.005\text{mg}$



# OAQPS vs Labs: Check Weights

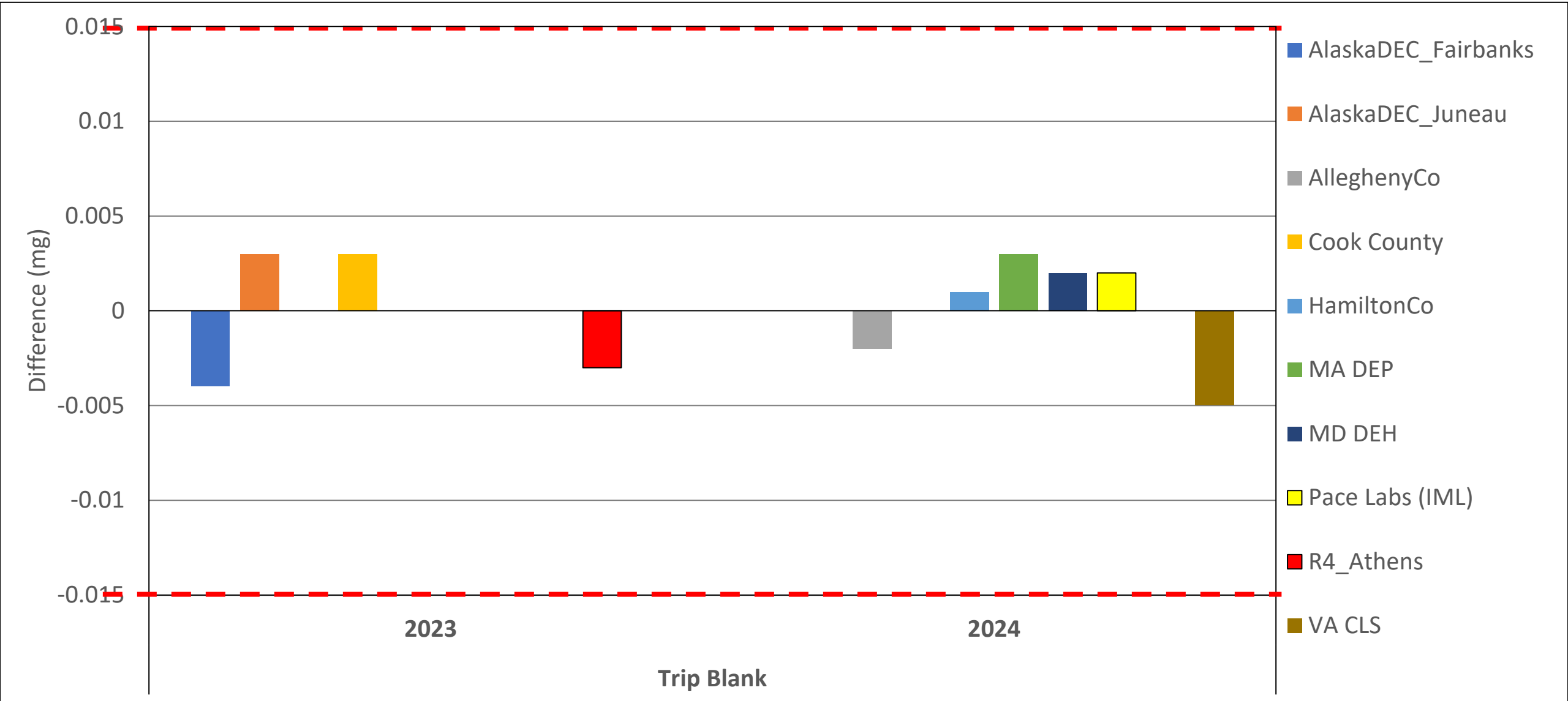
PEP Criterion:  
•  $\pm 0.003\text{mg}$  of certified weight



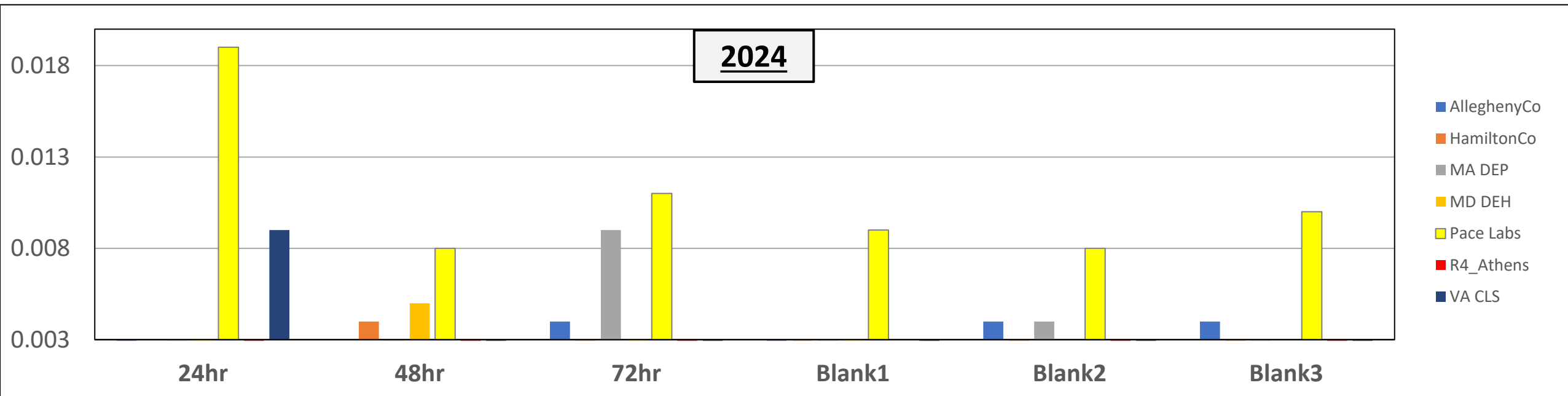
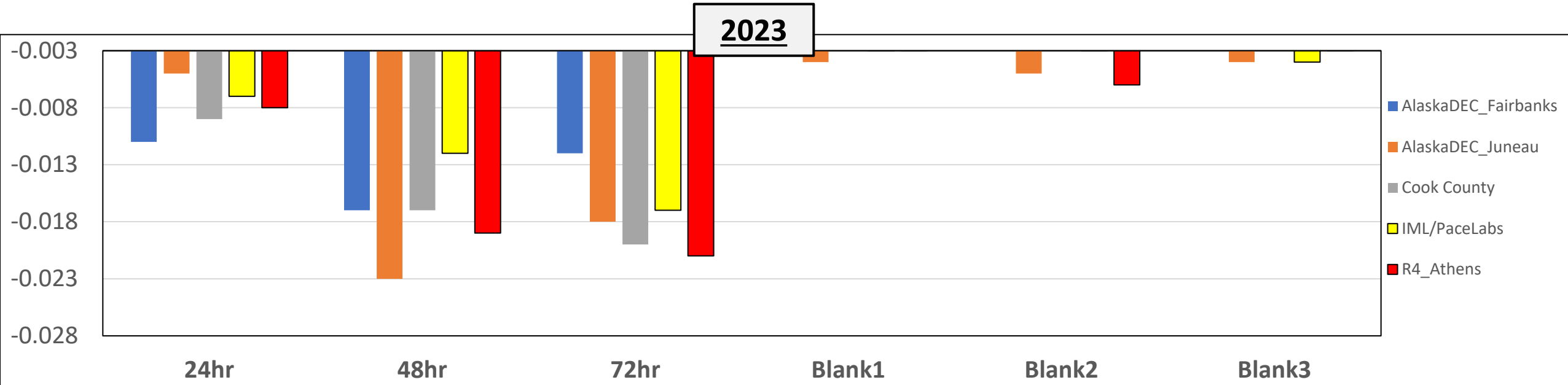
Problem with custom check weights

# OAQPS: Trip Blanks

PEP Criterion:  
• Trip Blanks:  $\pm 0.015\text{mg}$

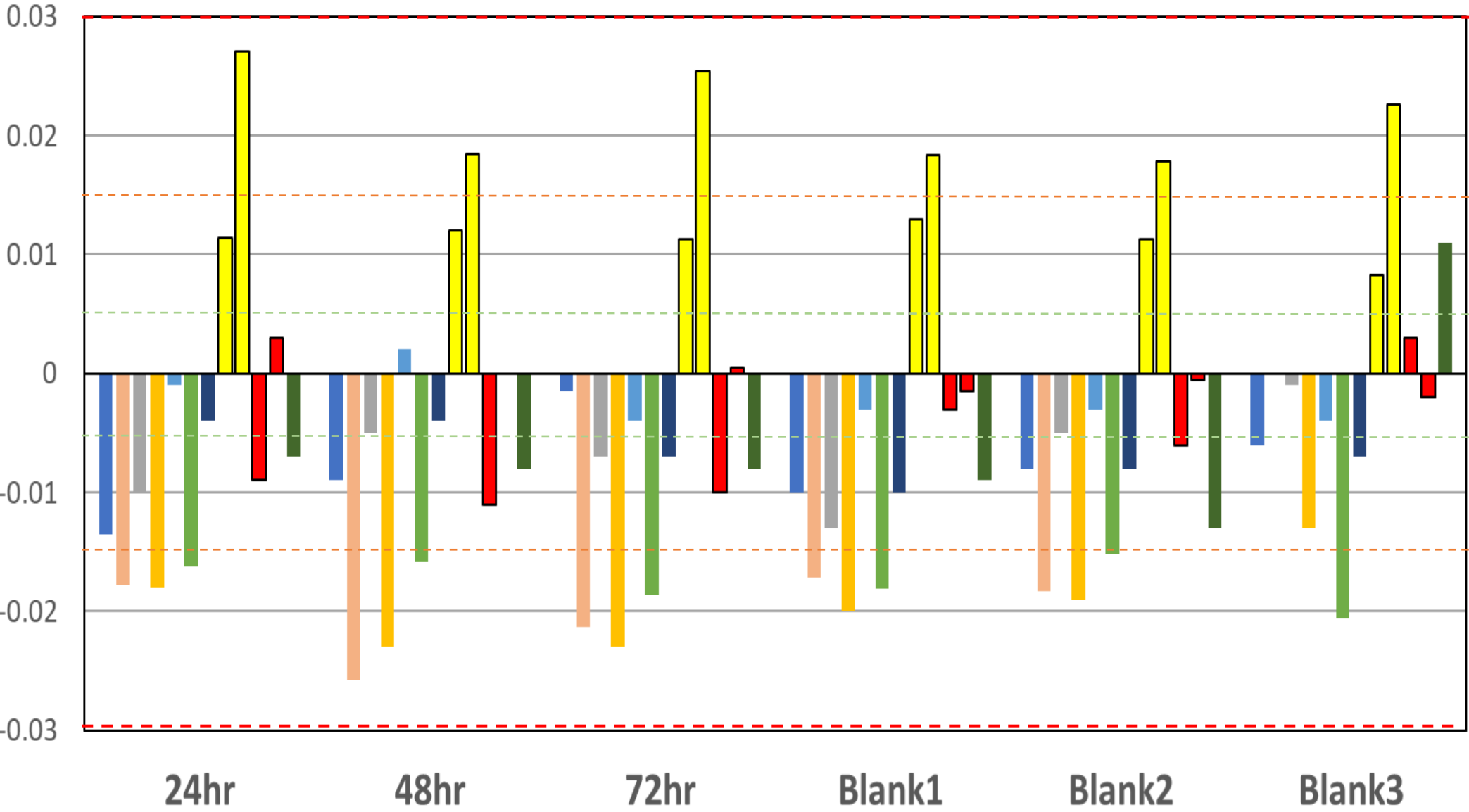


# OAQPS filter post vs final weight





# Questions?



- Lab
- year
- AlaskaDEC\_Fairbanks - 2024
  - AlaskaDEC\_Juneau - 2023
  - AlleghenyCo - 2024
  - Cook County - 2023
  - HamiltonCo - 2024
  - MA DEP - 2024
  - MD DEH - 2024
  - Pace Labs (IML) - 2023
  - Pace Labs (IML) - 2024
  - R4\_Athens - 2023
  - R4\_Athens - 2024
  - VA CLS - 2024