Evaluating Impacts of AERMET & AERMOD Options on Modeled Concentration

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Action Plan

- Generate new met data
  - Using the AERMET ver.12345
- Perform AERMOD ver.12345 runs
  - Using the new processed met sets.
- Compare Results
- Prepare Conclusion / Justification
- Finally Update AERMOD /AERMET guidance

AERMET Datasets

- **Met Set 1 - Base Case – Without 1-min data**
- **Met Set 2 - Base Case – Without 1-min data + ADJ_U***
- **Met Set 3 - THRESH_1MIN 0.257 m/sec (0.5 Knots)**
- **Met Set 4 - THRESH_1MIN 0.5 m/sec (1.0 knots)**
- **Met Set 5 - THRESH_1MIN 0.99 m/sec (1.92 knots)**
- **Met Set 6 - THRESH_1MIN 0.257 m/sec (0.5 Knots) + ADJ_U***
- **Met Set 7 - THRESH_1MIN 0.5 m/sec (1.0 knots) + ADJ_U***
- **Met Set 8 - THRESH_1MIN 0.99 m/sec (1.92 knots) + ADJ_U***
- **Met Set 9 - With 1-min data + NO THRESH + NO ADJ_U***
- **Met Set 10 - With 1-min data + NO THRESH + ADJ_U***

AERMOD Runs

- Case 1 – Regulatory Default Option Only
- Case 2 – ADJ_U
- Case 3 – ADJ_U* + LOW WIND1
- Case 4 – ADJ_U* + LOW WIND2

*1) VECTORWS keyword is not used as per MCB#8 all wind speeds derived from NWS or FAA airport data represent scalar mean wind speeds.

Receptor Grid

- 25m spacing out to 100m
- 50m spacing out to 200m
- 100m spacing out to 400m
- 200m spacing out to 800m
- 400m spacing out to 1600m
- 800m spacing out to 3200m
- 1600m spacing out to 3200m
- To ~10km (13,736 receptors)

Sources Modeled

- Eight Point Sources (Flare, IC Engine, Tall & Short Stacks)
- One Volume Source
- One Open Pit Source
- One Area Source
- One Area Circle Source
- One Area Polygon Source

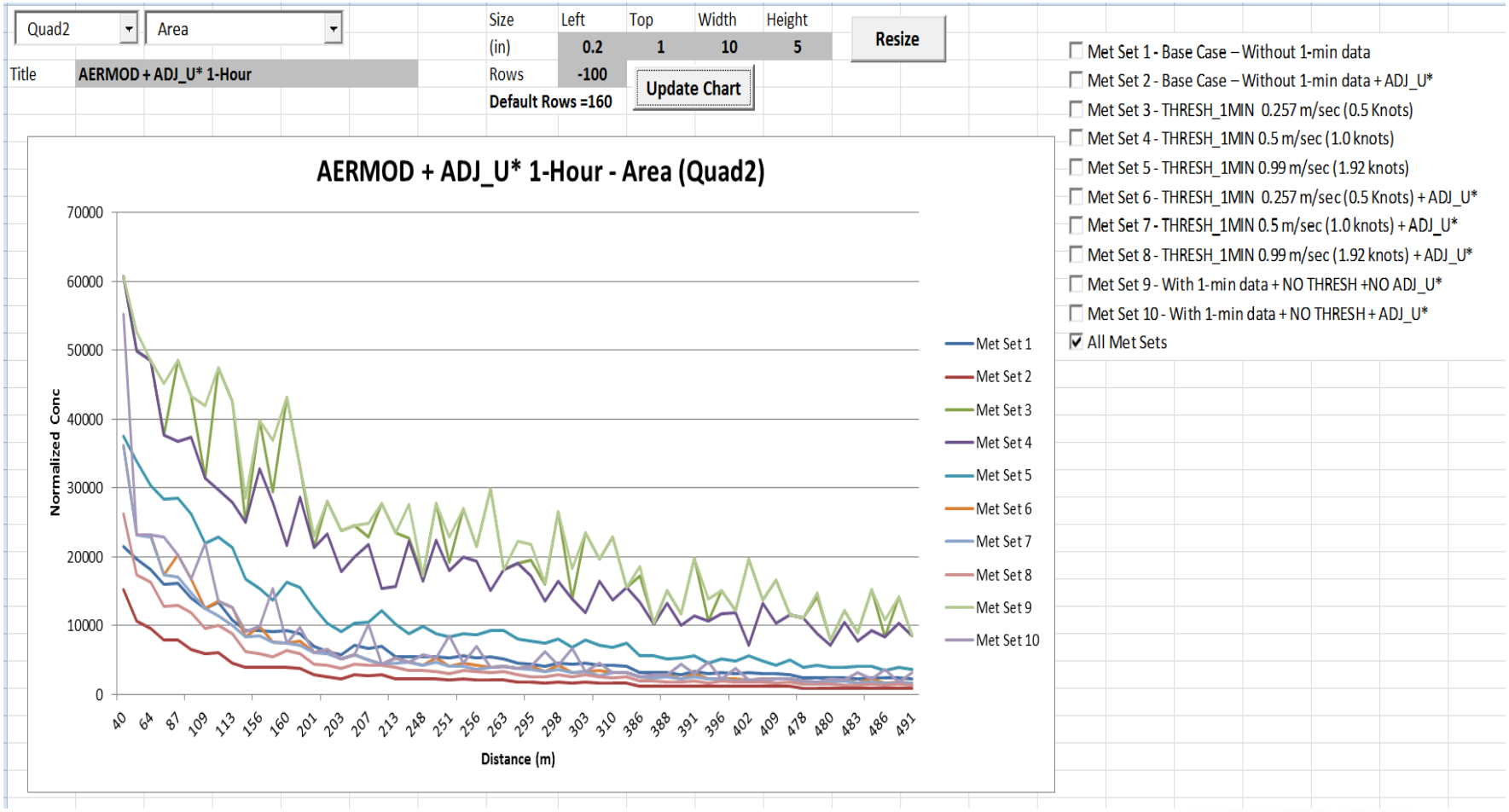
Modeled Time Periods

- 1-Hour
- 3-Hour
- 8-Hour
- 24-Hour
- Annual

Sample Results

- Results Summarized
  - by Receptor & Quadrant
- Created an Excel Spreadsheet
  - Allows for Source Selection
  - Allows for Quad Selection
  - Allows for Met Dataset Selection
  - Allows for Distance Selection
  - Creates Chart Based on Options Selected

Sample Results – Area Source



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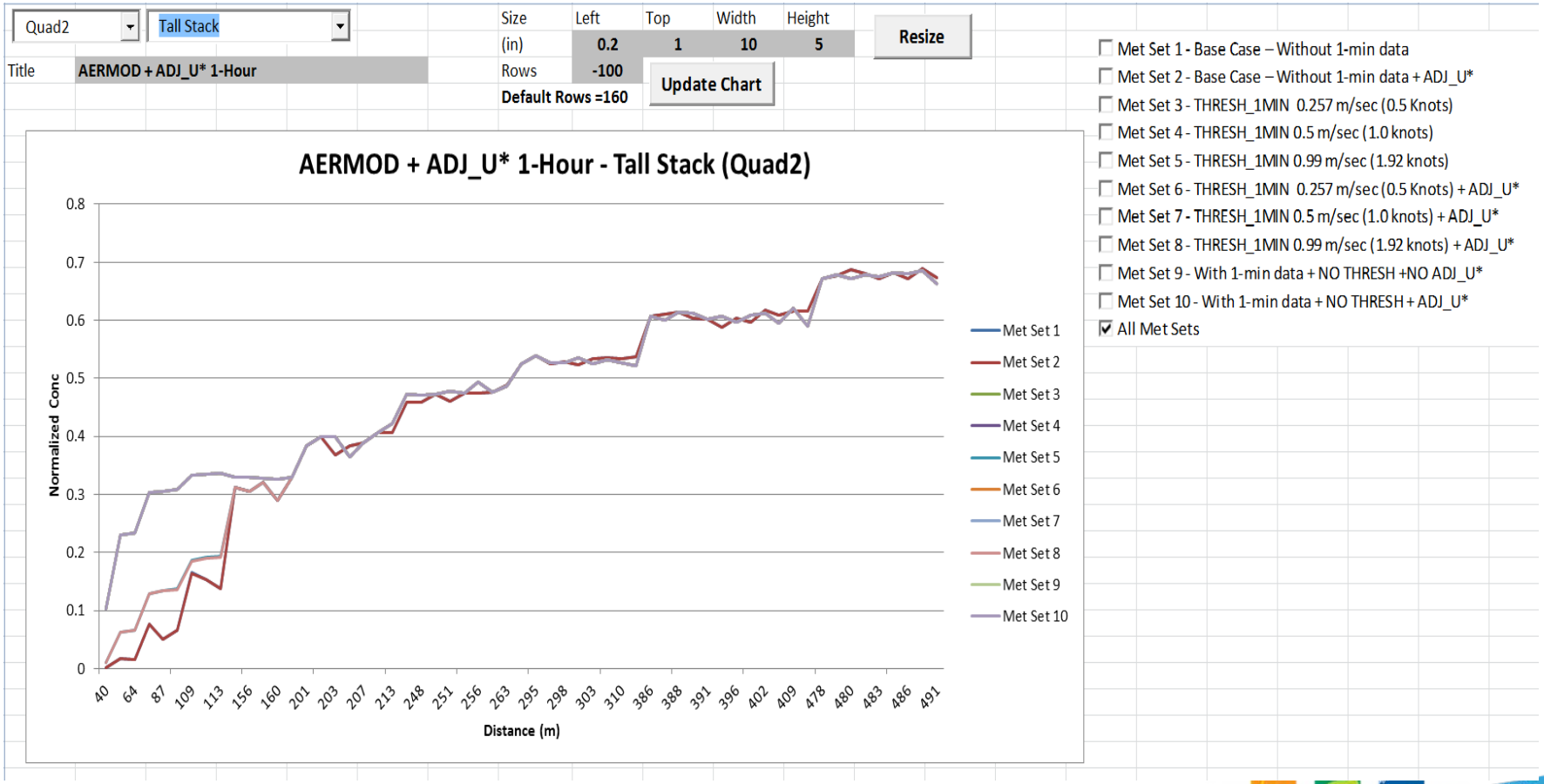
Sample Results – Point Source



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Example Spreadsheet

- Files can be found on District FTP Site: ftp://12.219.204.27/public/Modeling/Draft/AERMET-AERMOD Test Runs/

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