

MATS Data Analysis

August 2021

Non-mercury Metal HAP PM Data Analysis

PM¹ Data Overview

- **Data Source:** MATS compliance reports
- **Data Types:** CEMS (30-day rolling avg) and stack tests
- **Data Year:** 2019
- **Coal Types:** No coal types excluded

Metric	Result
Total number of units ²	370
Maximum unit-level average emissions rate (lb/mmBtu) ³	0.0421
Minimum unit-level average emissions rate (lb/mmBtu) ³	0.0001
Average unit-level average emissions rate (lb/mmBtu) ³	0.0074
Exceedances ⁴ (# of units)	1
Units ≤ limit ⁴ (# of units)	369 (99% of units in dataset are ≤ 0.030 lb/mmBtu)

¹ Here and elsewhere, particulate matter emissions are an alternative surrogate pollutant for the non-mercury metals which are regulated under MATS.

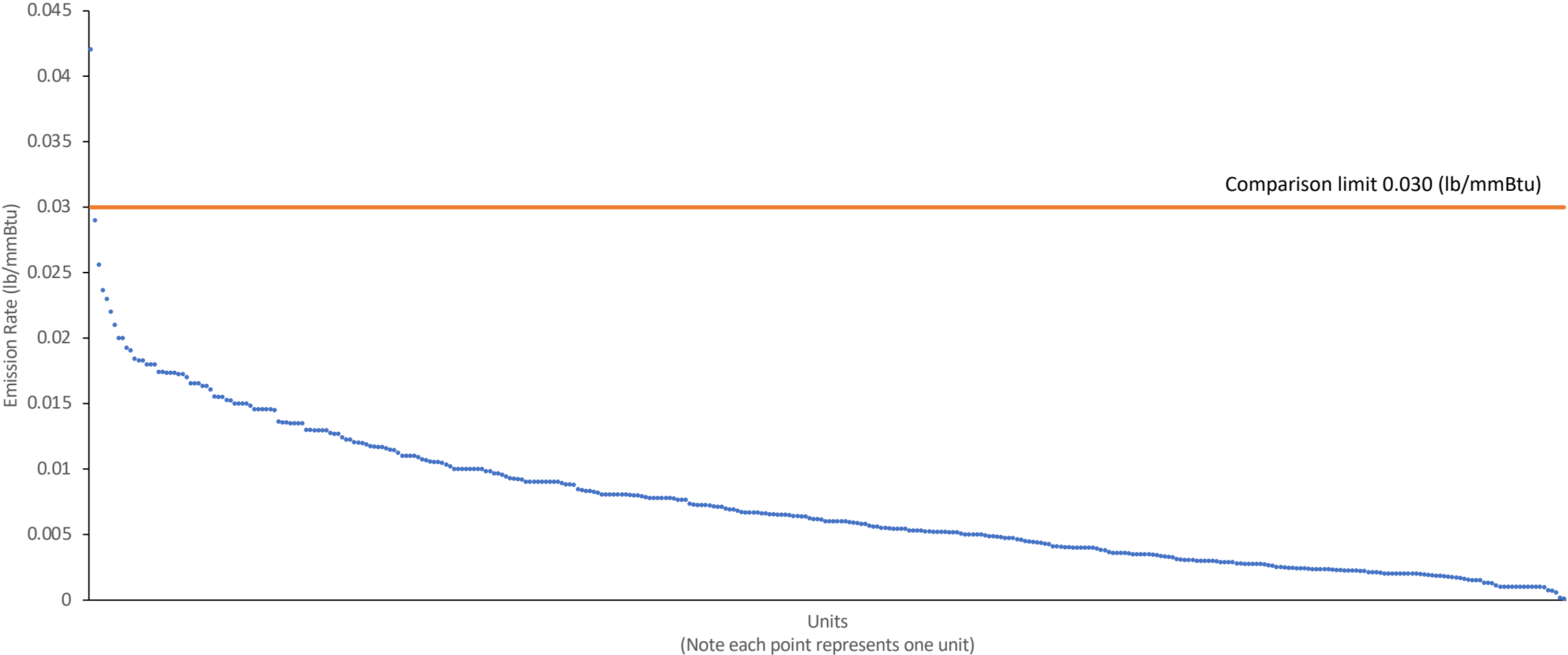
² Represents the total number of MATS coal units for which PM emissions data were found to be available in 2019 WebFire compliance reports. 94 MATS units were found to have low emitting EGU (LEE) status and did not report 2019 data, 23 units used a MATS limit other than the 0.030 lb/mmBtu, 72 had been retired before 2019, and 21 units did not have 2019 data in Webfire. Compliance reports were pulled for MATS units from EPA WebFire and housed in a spreadsheet by NRDC. Data is pulled from the NRDC “Master Database all combined” worksheet, which separates out all of the common-stack units into individual units.

³ An average rate was calculated for each unit based on the PM CEMS or stack test data in compliance reports; max/min/avg reflect max/min/avg of those unit averages.

⁴ For purpose of this analysis, compared with current standard for PM of 0.030 lb/mmBtu.

PM¹ Data Overview (continued)

PM¹ average emission rates for 370 units compared against limit of 0.030 lb/mmBtu; 99% of unit averages in dataset are ≤ 0.030 lb/mmBtu



¹ Here and elsewhere, particulate matter emissions are an alternative surrogate pollutant for the non-mercury metals which are regulated under MATS.

PM¹ Emission Rate Comparisons

- Emission rate metrics calculated using the NRDC database; Percentage categories based on total number of MATS coal units with 2019 PM emissions data.
- Current standard for PM is 0.030 lb/mmBtu; 99% of units in the updated dataset have average below this rate (369 of 370 units)

Metric ²	Top 10%	Top 20%	Top 25%	Top 50%	All Data in Dataset
Number of units	37 (10% of 370)	74 (20% of 370)	93 (25% of 370)	185 (50% of 370)	370
Max emissions rate (lb/mmBtu)	0.0020	0.0026	0.0030	0.0060	0.0421
Min emissions rate (lb/mmBtu)	0.0001	0.0001	0.0001	0.0001	0.0001
Avg emissions rate (lb/mmBtu)	0.0013	0.0018	0.0020	0.0033	0.0074
<i>Percent that average emissions rate is below the current standard</i>	<i>96%</i>	<i>94%</i>	<i>93%</i>	<i>89%</i>	<i>75%</i>

¹ Here and elsewhere, particulate matter emissions are an alternative surrogate pollutant for the non-mercury metals which are regulated under MATS.

² Max/min/avg calculated using data from the NRDC Master Database all combined worksheet, which separates out all of the common-stack units into individual units. An average rate was calculated for each unit based on data in compliance reports; max/min/avg reflect max/min/avg of those unit averages.

Mercury Data Analysis

Hg Data Overview

- **Data Source:** EPA CAMD database
- **Data Types:** CEMS (monthly totals of hourly data; rates calculated using total Hg lbs and heat input for each unit for a weighted average)
- **Data Year:** 2020
- **Other criteria:** MATS units; identified MATS Hg sub-group categories (e.g., not low rank, low rank) using EPA Webfire database

Metric	All Coal Types	Not Low Rank Coal	Low Rank Coal
Total number of units ¹	420	396	24
Maximum unit-level average emissions rate (lb/TBtu)	3.81	1.39	3.81
Minimum unit-level average emissions rate (lb/TBtu)	0.0014	0.0014	1.04
Average unit-level average emissions rate (lb/TBtu)	0.61	0.50	2.34
Exceedances ² (# of units)	--	2	0
Units ≤ limit ² (% of units)	--	99%	100%

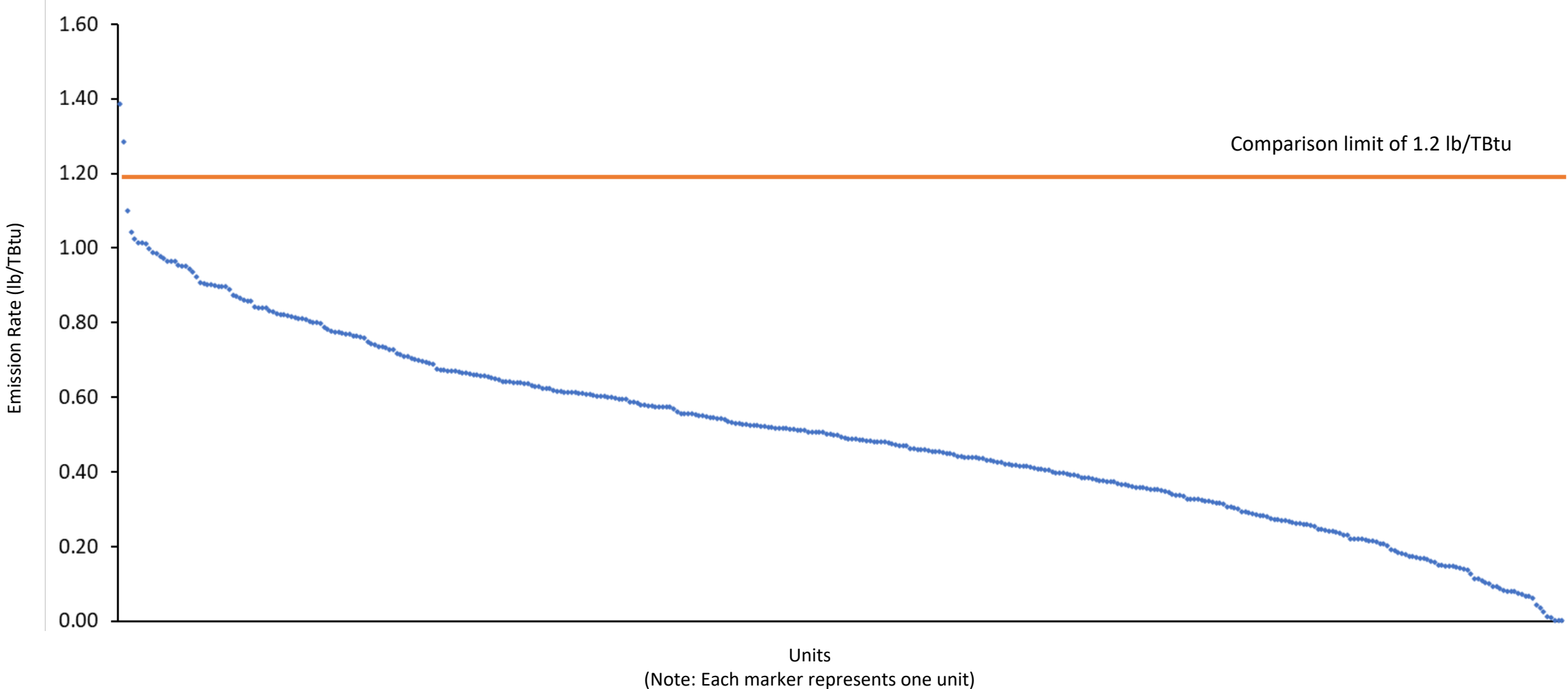
¹ Represents number of MATS units in CAMD with 2020 Hg emissions data.

² For purpose of this analysis, compared with current limit of:

- 1.2 lb/TBtu for “not low rank” coal units
- 4 lb/TBtu for “low rank” coal units

Hg Data Overview – “Not Low Rank” Coal Sub-Group

Hg average emission rates for 396 “not low rank” coal units compared against limit of 1.2 lb/TBtu; 99% of unit averages in dataset are ≤ 1.2 lb/TBtu



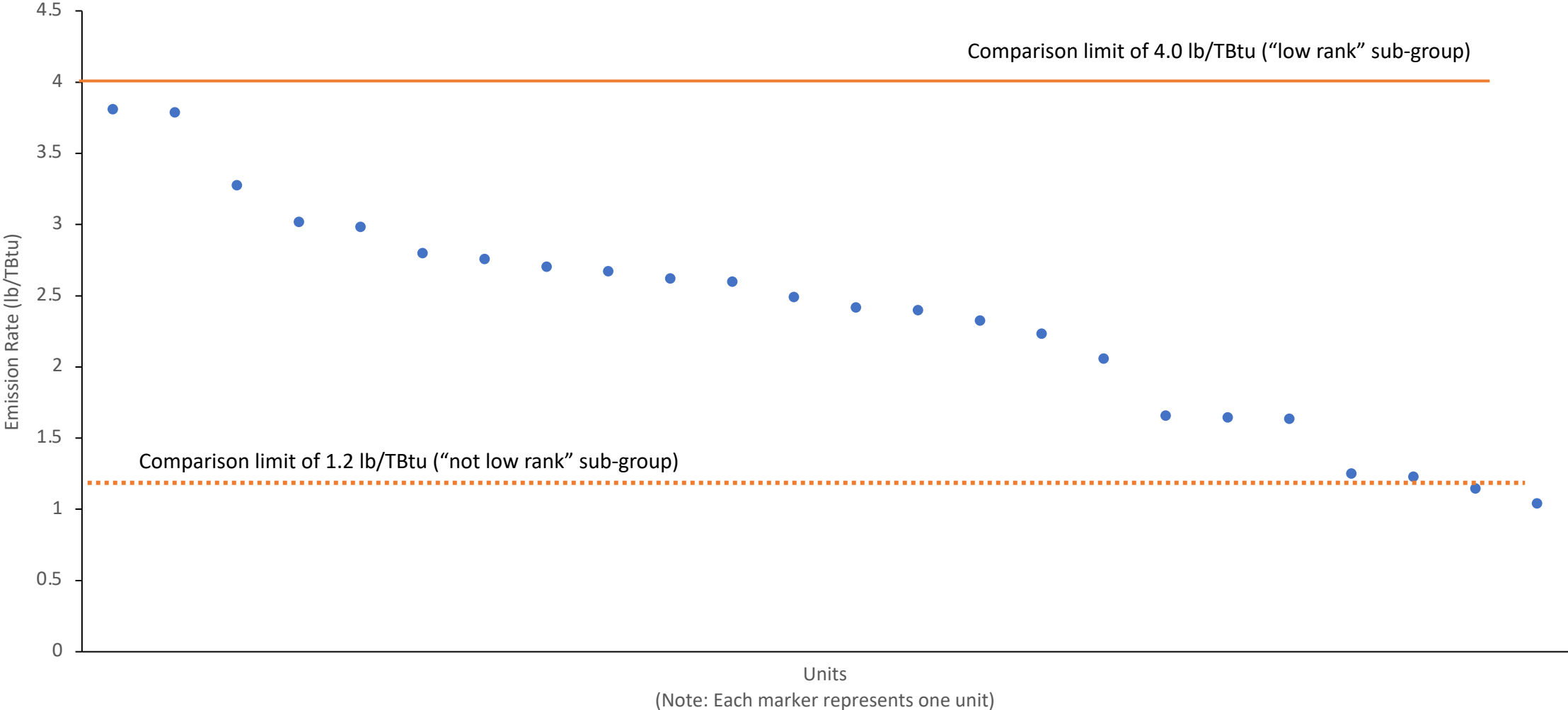
Hg Emission Rate Comparisons – “Not Low Rank” Coal Sub-Group

- Percentage categories based on total number of “not low rank” MATS units in CAMD with 2020 data
- Current standard for Hg (“not low rank”) is 1.2 lb/TBtu; 99% of units in the NRDC database have average below this rate (394 of 396 units)

Metric	Top 10%	Top 20%	Top 25%	Top 50%	All Data in Dataset
Number units	40 (10% of 396)	79 (20% of 396)	99 (25% of 396)	198 (50% of 396)	396
Max emissions rate (lb/TBtu)	0.1693	0.2719	0.3255	0.4929	1.386
Min emissions rate (lb/TBtu)	0.0014	0.0014	0.0014	0.0014	0.0014
Avg emissions rate (lb/TBtu)	0.0966	0.1623	0.1900	0.3018	0.5010
<i>Percent that average emissions rate is below the current standard</i>	92%	86%	84%	75%	58%

Hg Data Overview – “Low Rank” Coal Sub-Group

Hg average emission rates for 24 “low rank” coal units compared against limit of 4.0 lb/TBtu; 100% of unit averages in dataset are ≤ 4.0 lb/TBtu



Acid Gases Data Analysis

HCl Data Overview

- **Data Source:** MATS compliance reports
- **Data Types:** Stack tests (one unit with HCl CEMS)
- **Data Year:** 2019
- **Coal Types:** No coal types excluded

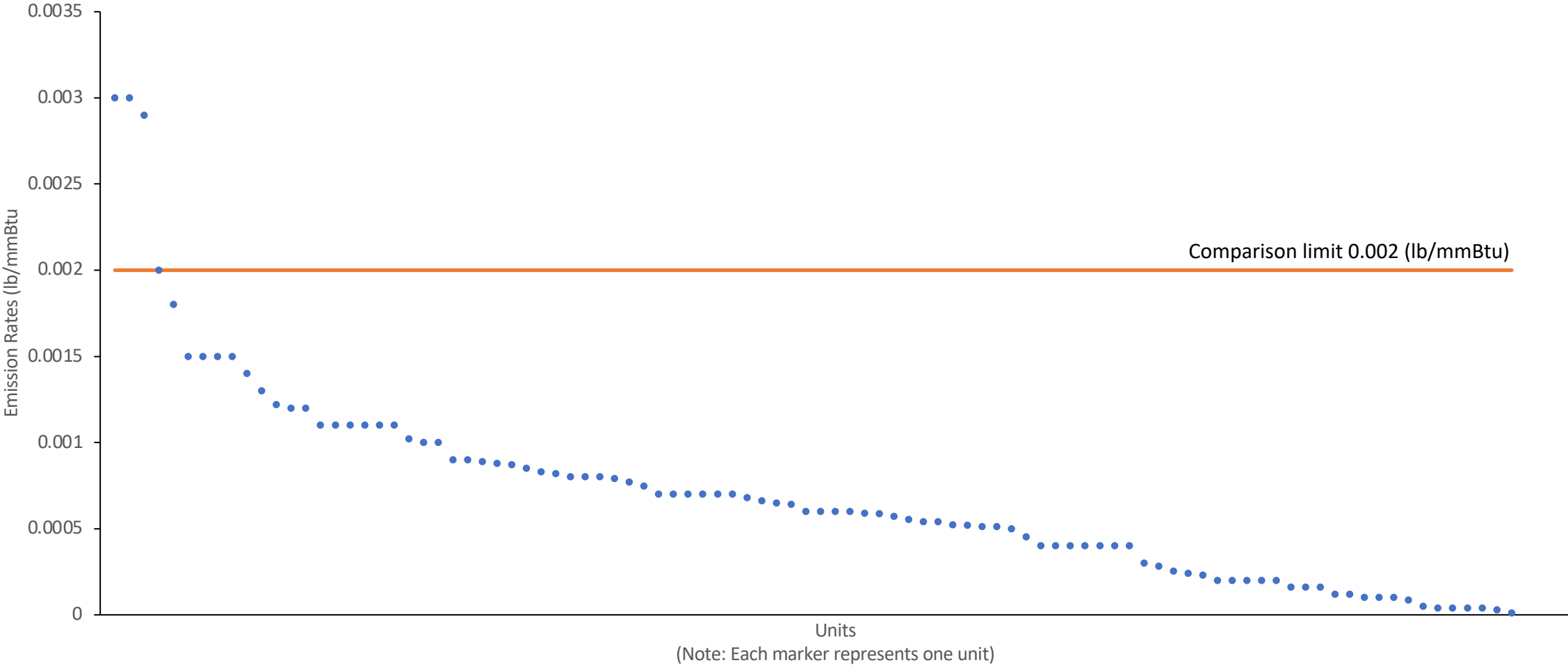
Metric	Result
Total number of units ¹	96
Maximum unit-level average emissions rate (lb/mmBtu)	0.00300
Minimum unit-level average emissions rate (lb/mmBtu)	0.00001
Average unit-level average emissions rate (lb/mmBtu)	0.00070
Exceedances ² (# of units)	3
Units ≤ limit ² (# of units)	93 (97% of units in dataset are ≤ 0.002 lb/mmBtu)

¹ Represents the number of MATS coal units for which HCl emissions data were found to be available in 2019 WebFire compliance reports. Note units are also able to show compliance with the acid gases standard through reporting SO2 CEMS data (instead of HCl) and meeting either the 0.2 lb/mmBtu or 1.5 lb/MWh SO2 limits.

² For purpose of this analysis, compared with a limit of 0.002 lb/mmBtu

HCl Data Overview (continued)

HCl average emission rates for 96 units compared against limit of 0.002 lb/mmBtu; 97% of unit averages in dataset are ≤ 0.002 lb/mmBtu



HCl Emission Rate Comparisons

- Emission rate metrics calculated using NRDC data; percentage categories based on number of MATS coal units with 2019 HCl emissions data.
- Current standard for HCl is 0.002 lb/mmBtu; 97% of units in the updated dataset have an average equal to or below this rate (94 units)

Metric	Top 10%	Top 20%	Top 25%	Top 50%	All Data in Dataset
Number of units	10 (10% of 96)	19 (20% of 96)	24 (25% of 96)	48 (50% of 96)	96
Max emissions rate (lb/mmBtu)	0.00010	0.00020	0.00025	0.00060	0.00300
Min emissions rate (lb/mmBtu)	0.00001	0.00001	0.00001	0.00001	0.00001
Avg emissions rate (lb/mmBtu)	0.00005	0.00010	0.00013	0.00031	0.00070
<i>Percent that average emissions rate is below the current standard</i>	<i>97%</i>	<i>95%</i>	<i>93%</i>	<i>84%</i>	<i>65%</i>

Data Variability Analysis

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