

Sequence VH O&H Meeting
August 19th, 2025 at 3PM EST via MS Teams

Attendees: Al Lopez, Dan Engstrom, Joe Anthony, Mike Deegan, Tony Catanese, Dylan Beck, Ben Maddock

Overview:

1. Fuel
2. Hardware
3. Operation

Notes:

1. Fuel

M-000054-3 Fuel Approval Matrix

| A1 | A2 | G1 | G2 | D |
|-----------------|--------------------|--------------------|--------------------|--------------------|
| 940 (175651) | 931 (193861) | 940 (175644) | 1011-1 (191485) | 931 (190601) |
| 931 (193862) | 1011-1 (193857) | 1011-1 (199200) | 931 (191483) | 1011-1 (190602) |
| 1011-1 | 931 | 931 | 1011-1 | 931 |

- M-000054 Fuel Batch Approval
 - o M-000054 batch was too mild with two 940 results
 - VMinutes20250130ConferenceCall_draft.pdf
 - o M-000054-1 pilot batch was too severe with two 940 results
 - VMinutes20250409ConferenceCall.pdf
 - o M-000054-2 was too severe with a 931 and 1011-1 result
 - VMinutes20250520ConferenceCall.pdf
 - o M-000054-2a fuel dilution study
 - VMinutes20250616 ConferenceCall.pdf
 - o M-000054-3 pilot batch row 1
 - 20250714 meeting
 - o M-000054-3 big batch row 2
 - 20250819 meeting

| Intertek <small>Total Quality Assurance</small> | | Oil | AES | Yi | RCS | Yi | AEV | Yi | APV | Yi | OSCR | FD AVG | Oil Add |
|--|---|--------|------|--------|------|----------|------|--------|------|----------|------|--------|---------|
| Pilot Blend Test | G | 1011-1 | 8.71 | 0.491 | 9.42 | -0.08 | 9.47 | 0.19 | 9.08 | 0.25 | 2 | 15.90 | 793 |
| | D | 931 | 7.92 | -0.133 | 9.13 | -0.643 | 8.7 | -0.9 | 7.94 | -0.683 | 80 | 15.60 | 925 |
| Final Blend | A | 931 | 8.84 | 1.4 | 9.38 | -1.236 | 9.04 | 0.233 | 8.12 | -0.383 | 1 | 12.10 | 730 |
| | D | 1011-1 | 8.75 | 0.561 | 9.46 | -0.451 | 9.43 | 0 | 8.64 | -0.667 | 6 | 16.40 | |
| | G | 1011-1 | 8.3 | -0.228 | 9.4 | 0.097 | 9.68 | 1.19 | 9.24 | 0.583 | 2 | 16.69 | 500 |
| | A | 931 | 9.12 | 1.87 | 9.3 | -1.02 | 9.02 | 0.17 | 8.22 | -0.22 | 1 | 12.30 | |
| | A | 1011-1 | 9.47 | 1.82 | 9.6 | -2.01 | 9.52 | 0.43 | 8.96 | 0.42 | 1 | 13.00 | |
| | G | 931 | 7.87 | -0.217 | 8.86 | -0.17 | 8.9 | -0.233 | 7.64 | -1.183 | 65 | 16.86 | 940 |
| | | | avg | 0.6955 | | -0.68913 | | 0.135 | | -0.23538 | | | |

2. Hardware

- a. FCS Order through TEI
 - i. All parts are available at TEI
- b. Pencool shortage may be resolved with Nalcool alternative supply

3. Operation

- a. Fuel Dilution discrepancy
 - i. SwRI & Afton mini-round robin

| Test Hour | Fuel Dilution | | |
|-----------|---------------|-------|---------|
| | SwRI | Afton | Delta |
| 24 | 11.4 | 10.5 | -0.9 |
| 48 | 11.7 | 11 | -0.7 |
| 72 | 12 | - | |
| 96 | 12.3 | 11.3 | -1 |
| 120 | 12.5 | 11.9 | -0.6 |
| 144 | 12.2 | 11.2 | -1 |
| 168 | 12.6 | 11.8 | -0.8 |
| 192 | 12.1 | 11.2 | -0.9 |
| 216 | 12.2 | 12 | -0.2 |
| | | | -0.76 |
| | | | Average |

ii.

| Test Hour | Fuel Dilution | | |
|-----------|---------------|-------|---------|
| | SwRI | Afton | Delta |
| 24 | 14.7 | 14.5 | -0.2 |
| 48 | 15.4 | 15.6 | 0.2 |
| 72 | 16.1 | 15.8 | -0.3 |
| 96 | 16.2 | 16.6 | 0.4 |
| | | | 0.03 |
| | | | Average |

iii.

- b. Ramps – need to be addressed but the method is unclear. Labs will work to collect this data after the fuel approval matrix.
 - i. Quality Index?
 - ii. Windows?
 - iii. How to collect data?
 - 1. Rewrite ramp procedural ramp requirements and identify critical time in ramps we want recorded
 - 2. Ask labs to start reporting averaged values
 - iv. 2021 exercise
 - 1. Labs requested to review their notes for presentations or summaries from the last time this was addressed.
- c. New reference oil
 - i. RO 931 and 1011-1 have overlapping targets that may it difficult for labs to clearly discriminate technologies.

- ii. Labs would like a more borderline GF-7 capable formulation to avoid the overlap with 1011-1
- d. Lab Bias concerns with Lab A on the mild end and Lab B on the severe end
 - i. Consider swapping engines between two labs to rule out build vs stand influence on severity
 - ii. To simplify logistics, Lab A and G were requested to swap engines and evaluate fuel dilution differences
 - iii. Further discussion is required



M-000054-3 Fuel Approval Matrix

August 19, 2025

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M-000054-3 Fuel Approval Matrix

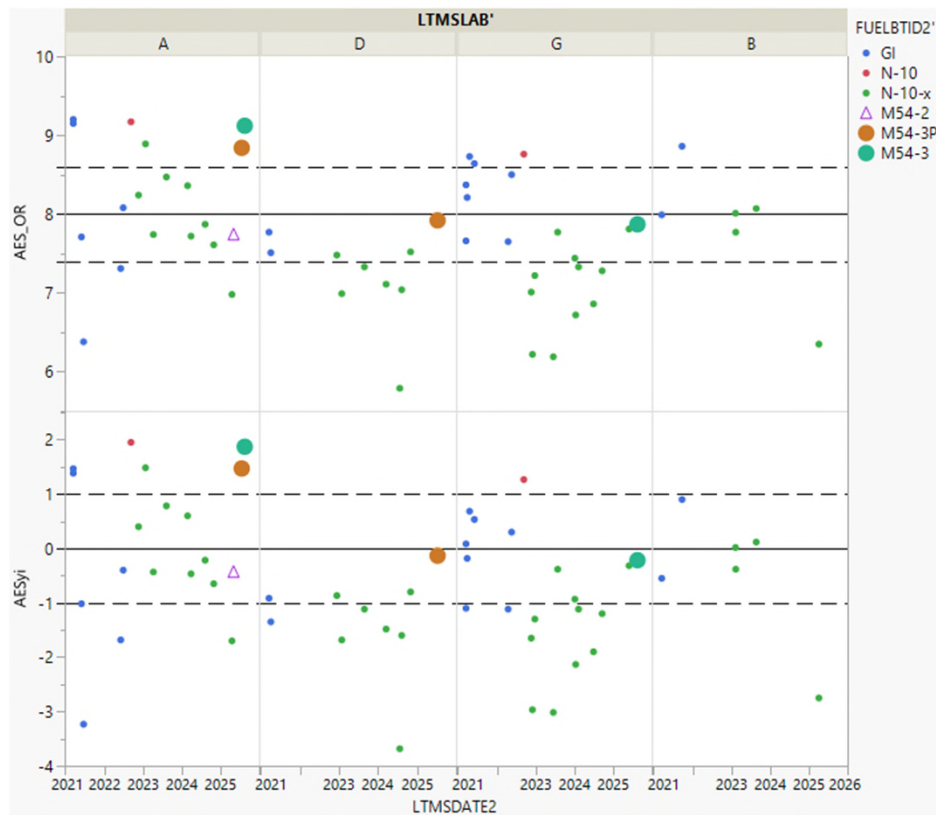
- 📌 M-000054 batch was too mild with two 940 results
 - ▶ [VMinutes20250130ConferenceCall_draft.pdf](#)
- 📌 M-000054-1 pilot batch was too severe with two 940 results
 - ▶ [VMinutes20250409ConferenceCall.pdf](#)
- 📌 M-000054-2 was too severe with a 931 and 1011-1 result
 - ▶ [VMinutes20250520ConferenceCall.pdf](#)
- 📌 M-000054-2a fuel dilution study
 - ▶ [VMinutes20250616 ConferenceCall.pdf](#)
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| 1011-1 | 931 | 931 | 1011-1 | 931 |

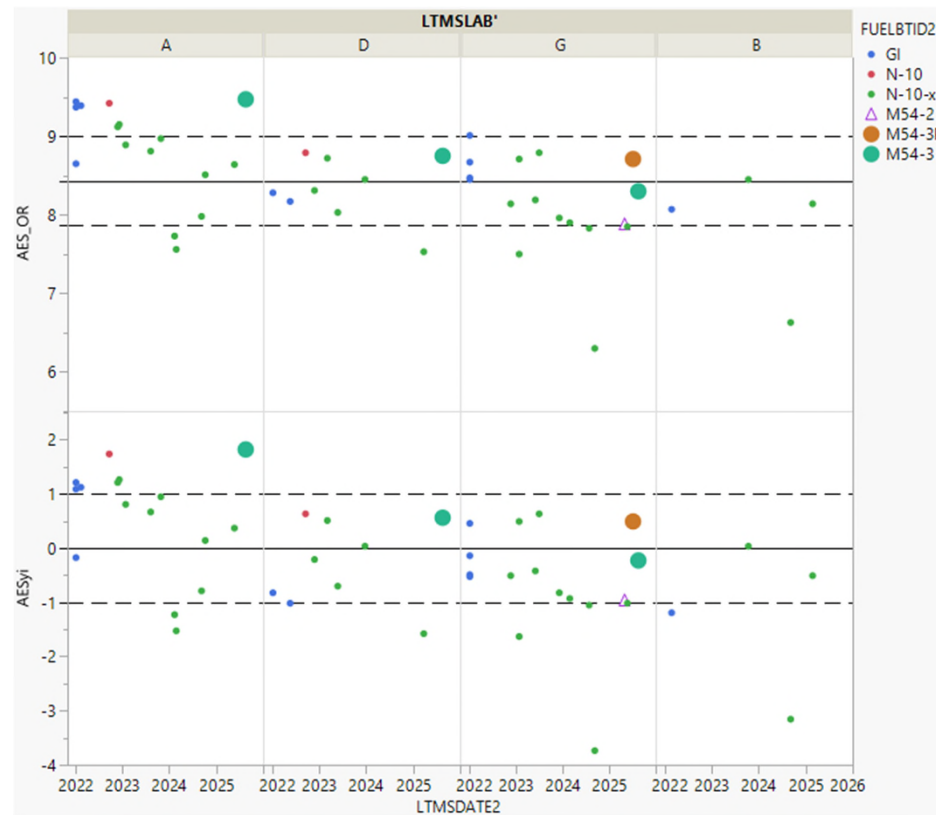
| intertek <small>Total Quality Assured.</small> | | Oil | AES | Yi | RCS | Yi | AEV | Yi | APV | Yi | OSCR | FD AVG | Oil Add |
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M-000054-3 Fuel Approval Matrix - AES



931

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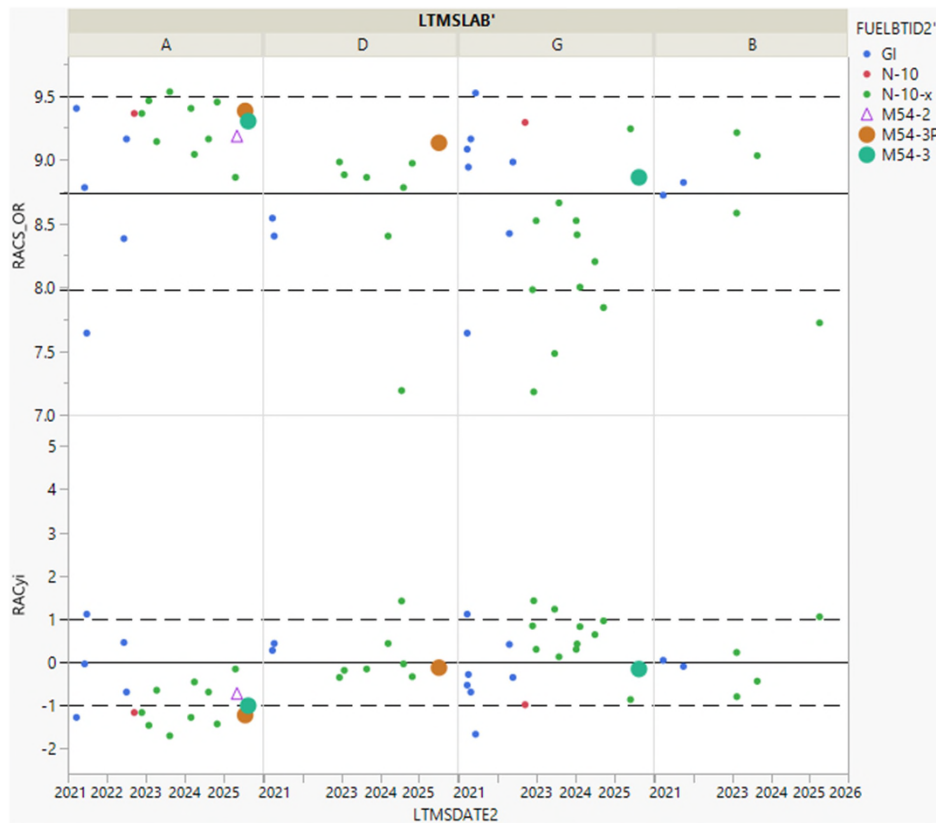


1011-1

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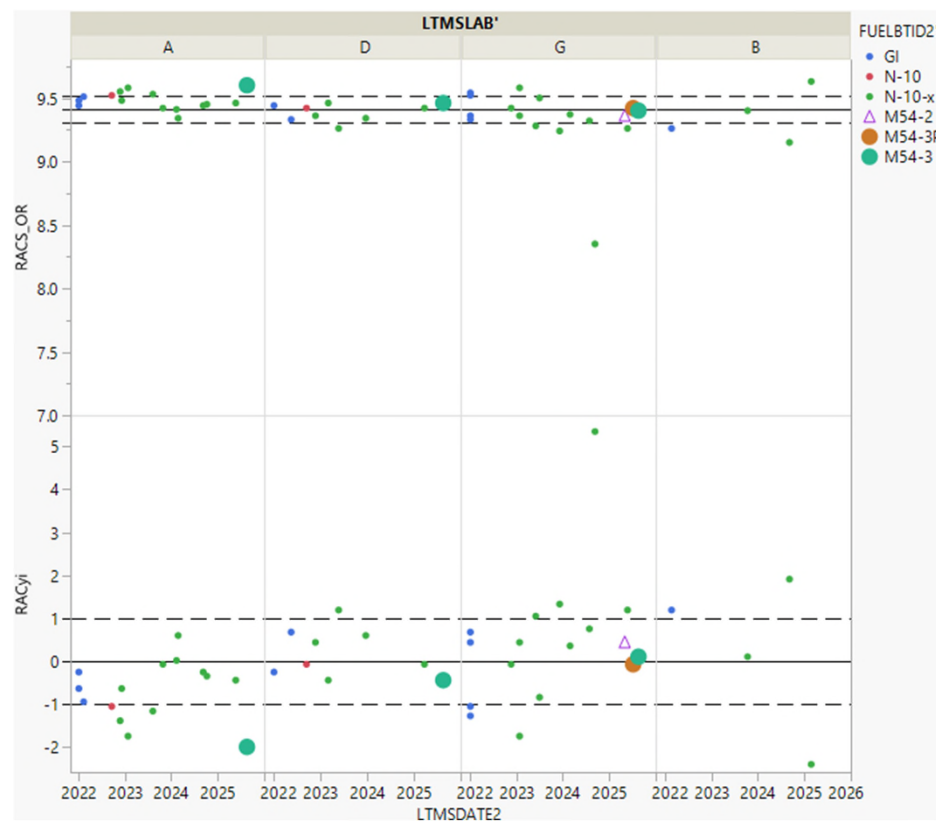
M-000054-3 Fuel Approval Matrix - RAC



931

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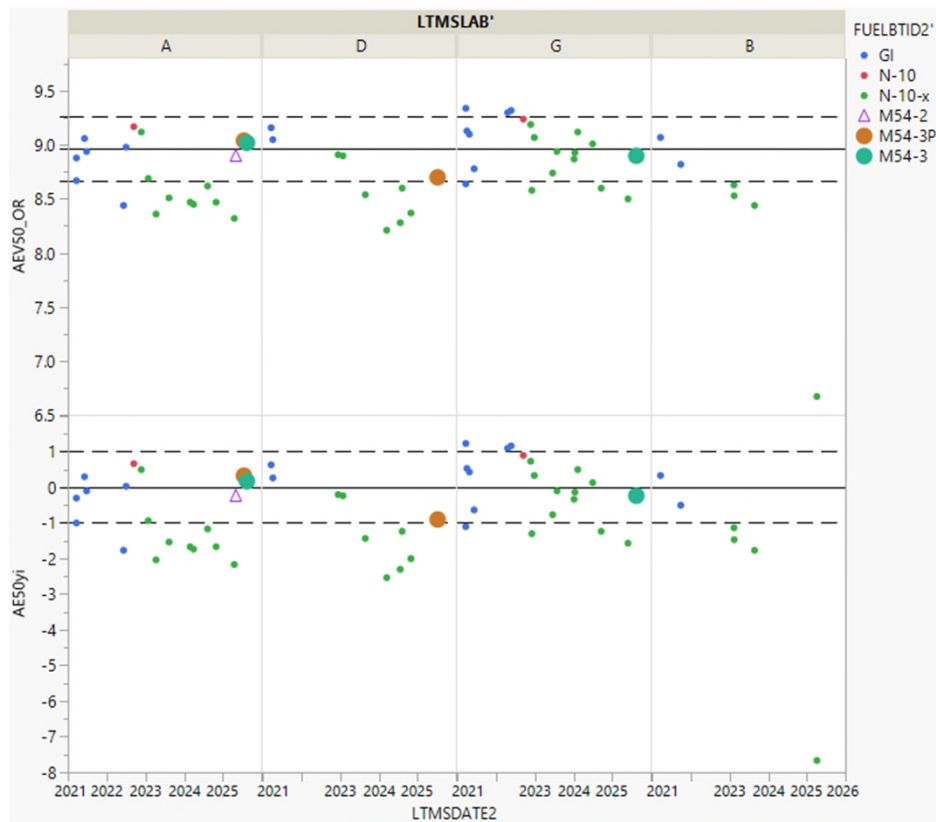
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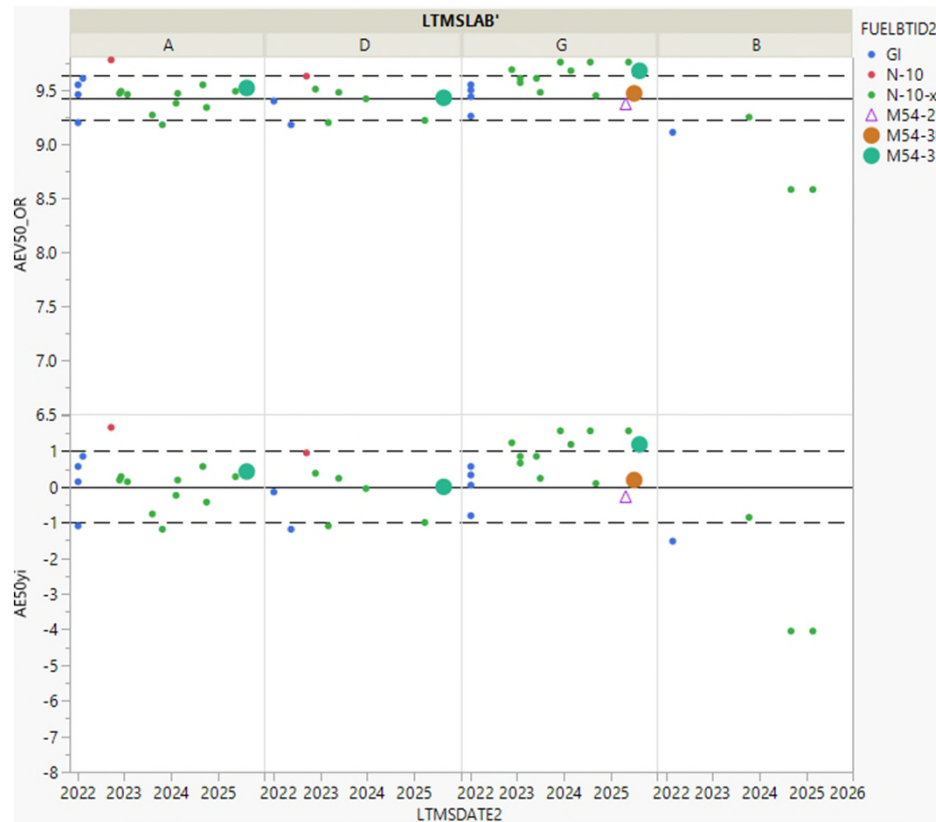
M-000054-3 Fuel Approval Matrix - AEV



931

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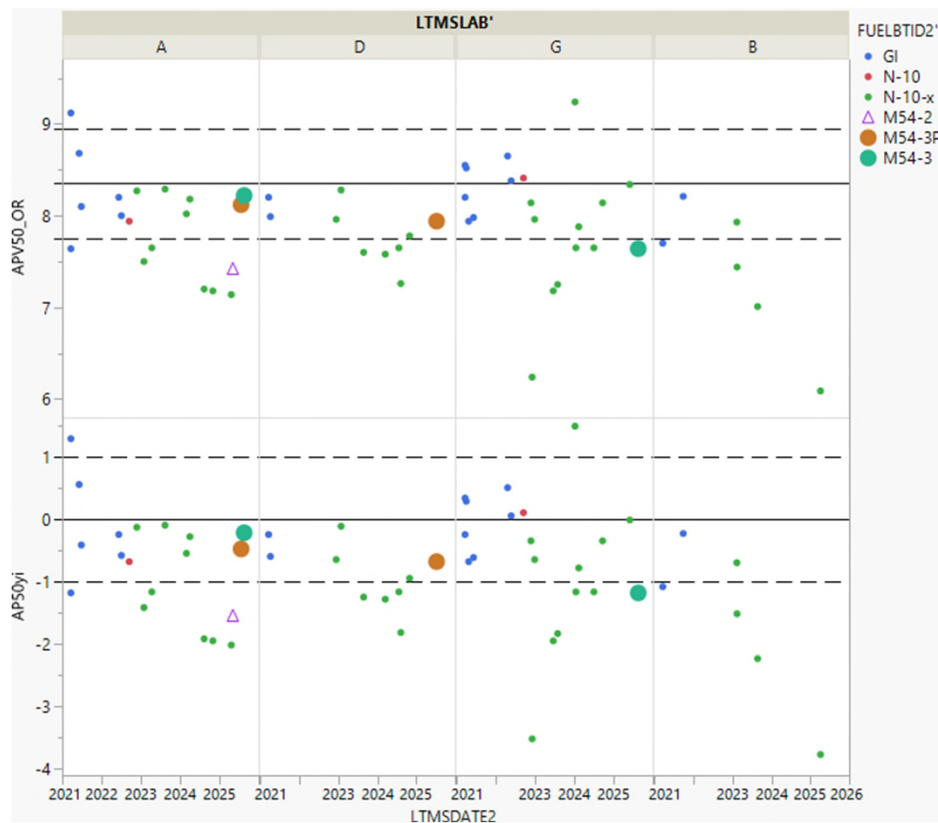
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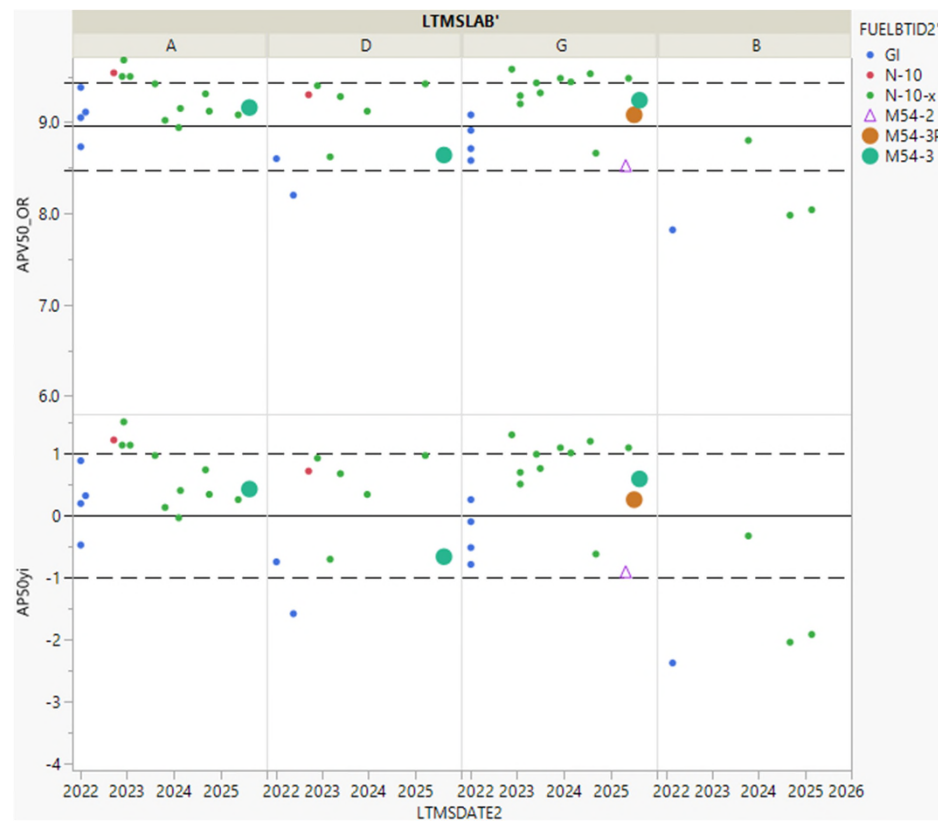
M-000054-3 Fuel Approval Matrix - APV



931

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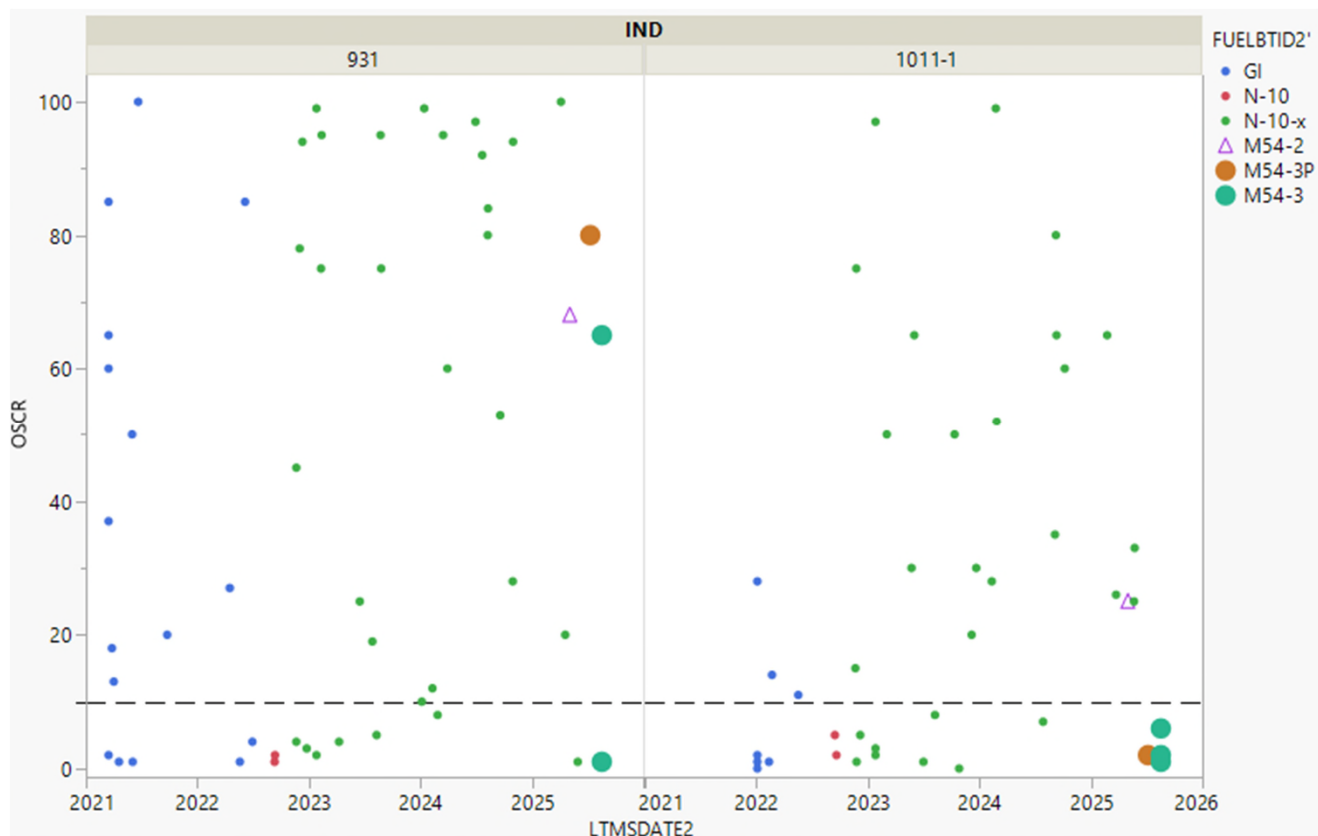
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M-000054-3 Fuel Approval Matrix - OSCR



M-000054-3 Fuel Approval Matrix – Fuel Dilution

