B30 spec options and data needs discussion background

- Biodiesel specifications and quality management are based largely on diesel fuel meeting its spec and biodiesel meeting its spec prior to blending
  - Some exceptions are made for the base diesel fuel for those parameters that biodiesel can improve, i.e., cetane, aromatics, sulfur, lubricity
  - Although diesel pretty much always meets the cetane, aromatics and sulfur so it can be used without blending in any biodiesel—just adding a lubricity additive at the terminal.

- We take advantage of the controls being at the parent fuel level, as that minimizes the need to test and verify values after blending
  - This is especially important for biodiesel specific parameters that are important but extremely hard to measure in a finished fuel (i.e., total/free glycerin, metals, phosphorus)

B30 spec options and data needs discussion background

- We have a B21-B50 spec for home heating oil:
  - B100 must meet more stringent 6 hour minimum oxidation stability reserve value prior to blending if used for blends over B20
    - Ensures low acids/sediments as B50 for minimum 12 months simulated storage
    - B100 oxidation reserve is 3 hour minimum for use in blends B20 and lower
  - Final blend minimum remains unchanged at 6 hours for both B20 and B50
  - T-90 for B21-B50 increased to the B100 value of 360C
  - Acid number for B21-B50 is 0.4 max (B20 is 0.3, B100 is 0.5)
  - Significant digits on percent volume allow 50% to be added to B5

- We have existing parameters for grade 1 and grade 2 in D975

- We have existing parameters for the B6-B20 grade, based largely on those in D975

B30 spec options and data needs discussion background

- ASTM specs are meant to be minimum fuel parameters needed to provide performance expected by the user. This helps ensure customer satisfaction at the lowest cost.

- If there is a desire to make a parameter more stringent than what currently exists, ASTM voters will require data that corroborates the need for the more stringent specification.

- At the end of the day, each ASTM specification is a negotiation and then consensus among the industry stakeholders based on the data that is available

B30 spec options and data needs discussion background

- Most of the biodiesel specification work has been with the intent that it could be used in any piece of equipment that conventional diesel is used in with little or no modification
  - This is a large reason why efforts have been with B5 and B20
  - This has put a heavy burden on the amount of field experience needed to pass biodiesel specifications
  - Even with ASTM standards, it is still up to each equipment manufacturer whether they support the use of any blend of biodiesel in their equipment.
- As the blend level gets higher, the industry is moving its thinking
  - Some equipment modification may be needed to use the higher blends
  - May only be OK in equipment that has been specially tested, designed, or modified for higher blend use, so not 'across the board'
- What does this mean for how much 'field data' is needed for these new specifications for blends over B20 and up to B100 if the intent is not so say 'its ok in every engine?