ASTM Engine Oil Gelation Test (EOGT) WK86363 Update

EOFT and EOWTT Surveillance Panel Meeting

August 19, 2025

Yong-Li McFarland, Chair

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EOFT and EOWTT Surveillance Panel Membership

22 members

Sarah Fitzgerald, Afton Chemical
Robert Stockwell, Chevron Oronite
Quanchang Li, ExxonMobil
Michael Deegan, Ford
Melissa Chu, Infineum
Angela Willis, Infineum
Joe Franklin, Intertek
Karina Gil, Intertek
Yuliza Rocha, Intertek
Michael Johnscher, ISP
Michael Kunselman, KJA Group
Litchi Xie, Lubrizol Additive (Zhuhai) Co., Ltd.
Victoria Fein, Lubrizol
Jason Bowden, OH Technologies Inc
Clarence McCollum, Richful (Xinxiang Richful)
Greg Miiller, Savant Group
Sean Alston, SGS North America
Becky Grinfield, SwRI
Yong-Li McFarland*, SwRI
John Loop, TMC
Jared Cavaliere, Valvoline
Amy Ross, Valvoline

*Chair

New EOGT WK86363, ILS# 1854

- Ford request for a new Engine Oil Gelation Test (EOGT): request to add a new test filterability test to better screen oils for field issues
- Status:
  - Method: 1 draft (Afton method V9.7) uploaded on ASTM Collaboration Area
  - Oils: 11 potential reference oils offered; 17 oils received at TMC
  - Screening Tests and ILS: ILS tests ongoing
  - Timing: ILS tests to be run by August, and test available in October 2025

Agenda:

- 1. ILS status
- 2. Review labs' funnel diameter and jar part info
- 3. Temperature of sheared samples
- 4. Data decisions

ILS Updates

- Afton: submitted ILS
- SwRI: completed ILS
- Savant: estimate ILS completion August 15
- Intertek: completed ILS
- Valvoline: completed ILS
- Infineum: completed ILS
- Lubrizol: completed ILS
- Richful: completed ILS

Funnel diameter discussion

Notes 7-24-25

-Data showed significant differences between Funnel ID 1 (3.7 to 4.4 mm) and Funnel ID 2(>4.4 mm): recommend only Funnel ID 1 data to be included. (1run for lab 5 with 3.62 mm)

-This is a question for the group to decide before statisticians go forward on data analysis

- Funnel ID:"*Mark funnels that are to be used for EOGT and provide a location to set aside.*
- *Using a caliper that has a (2) decimal place capability, measure the funnel ID in (2) places perpendicular to each other.*
- *Provide the funnel identification and the (2) measurements. Both measurements must be within the 3.7-4.4mm requirement.*"

-Consider lab 8 data: do we include or exclude as outlier?

-Consider normalize volume by funnel ID? Not supported

-Ask Labs to rerun ILS: all or only lab 2 and 4?

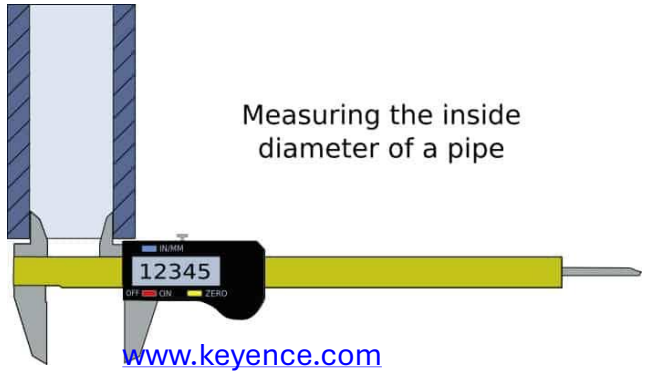
Lab Funnel ID data – Notes 8-4-25

- Current method funnel ID range: 3.7 to 4.4 mm
- Method revision:
  - 6.1. The flow apparatus *shall* consist of a glass funnel and a graduated cylinder.
  - Add 6.1.1.1 Glass Funnel
    - *Mark funnels that are to be used for EOGT and provide a location to set aside.*
    - *Using a caliper that has a (2) decimal place capability, measure the funnel ID in (2) places perpendicular to each other.*
    - *Provide the funnel identification and the (2) measurements. Both measurements must be within the 3.7-4.4mm requirement*
- Excluded Labs 2 and 4 ILS data for funnel ID outside range?
- Labs 1(38mm), 2(84mm), 5 (33mm) to confirm jar container diameter and Amy to review how differences affect results
  - Section 6.4 glass container: 50 mm diameter; need to revise to add tolerance eventually
  - Labs to email part number of 6.4 glass container to Yong-Li, John, Jared by August 11
- Wait to do: Amy to review how container diameter relates to ILS data
  - Understand if there's any influence of jar diameter to data

- John to enter lab's additional funnel ID data to ILS data with previous data
- Group to decide at next meeting: 1) if to exclude any lab data and why, 2) any ILS reruns, 3) proceed with ILS data analysis

Funnel Stem ID Info (from TMC)

- Four of Seven Labs have sent in confirmation measurements of their funnel stem IDs. These were the labs that used funnels that had stem ID's of 3.7 to 4.4mm.
- Two labs that did not use funnels with stem ID's averaging between 3.7 to 4.4mm did not send confirmation measurements for the stem IDs of the funnels that they used.
- One lab that reported their stem IDs as being in range (3.7 to 4.4mm) did not send in confirmation measurements of their funnel stem ID's.
- One lab sent in supplemental information regarding how it is possible to mis-measure funnel ID's if the caliper tool is not perpendicular to the wall of the funnel stem when the measurement is taken.



Measuring the inside diameter of a pipe

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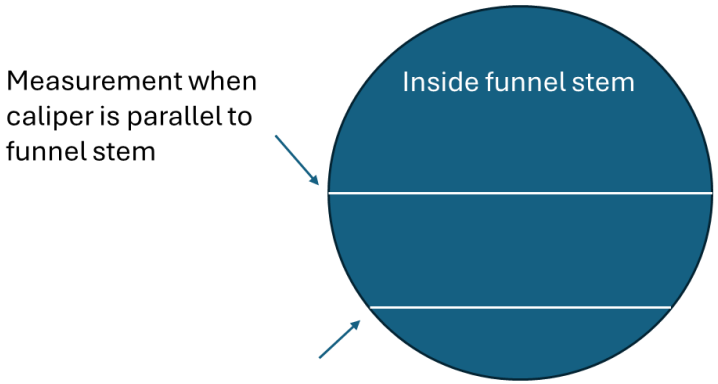


Glass jars (120 mL jars)

Lab	Jar part number (CAT #)		Diameter	Comments
Infineum	FB02911731		45 mm outer neck, 35 mm inner neck	
SwRI	FB02911731			
Lubrizol	FB02911731	And SKU P118151: 1.734” inner diameter, 2.015” outer diameter		
Intertek	13-756-950		2 in diameter	Measured at lip instead of wall
Missing info from labs 2, 4, 6, 8				

Method: 6.4 *Glass container, wide mouth,* 120 mL with cap, inert liner, 50 mm diameter. Fisher WM Glass Bottle CAT #FB02911768 has been found acceptable.

FB02911731

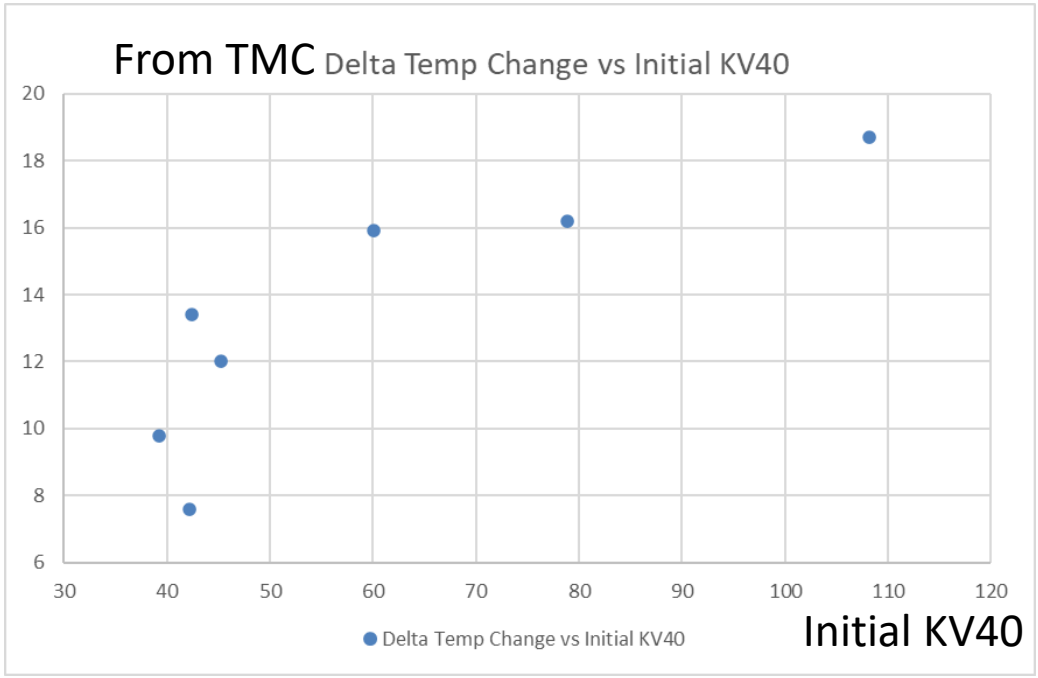
13-756-950

P118151

Temperature of sheared samples

- From Intertek:

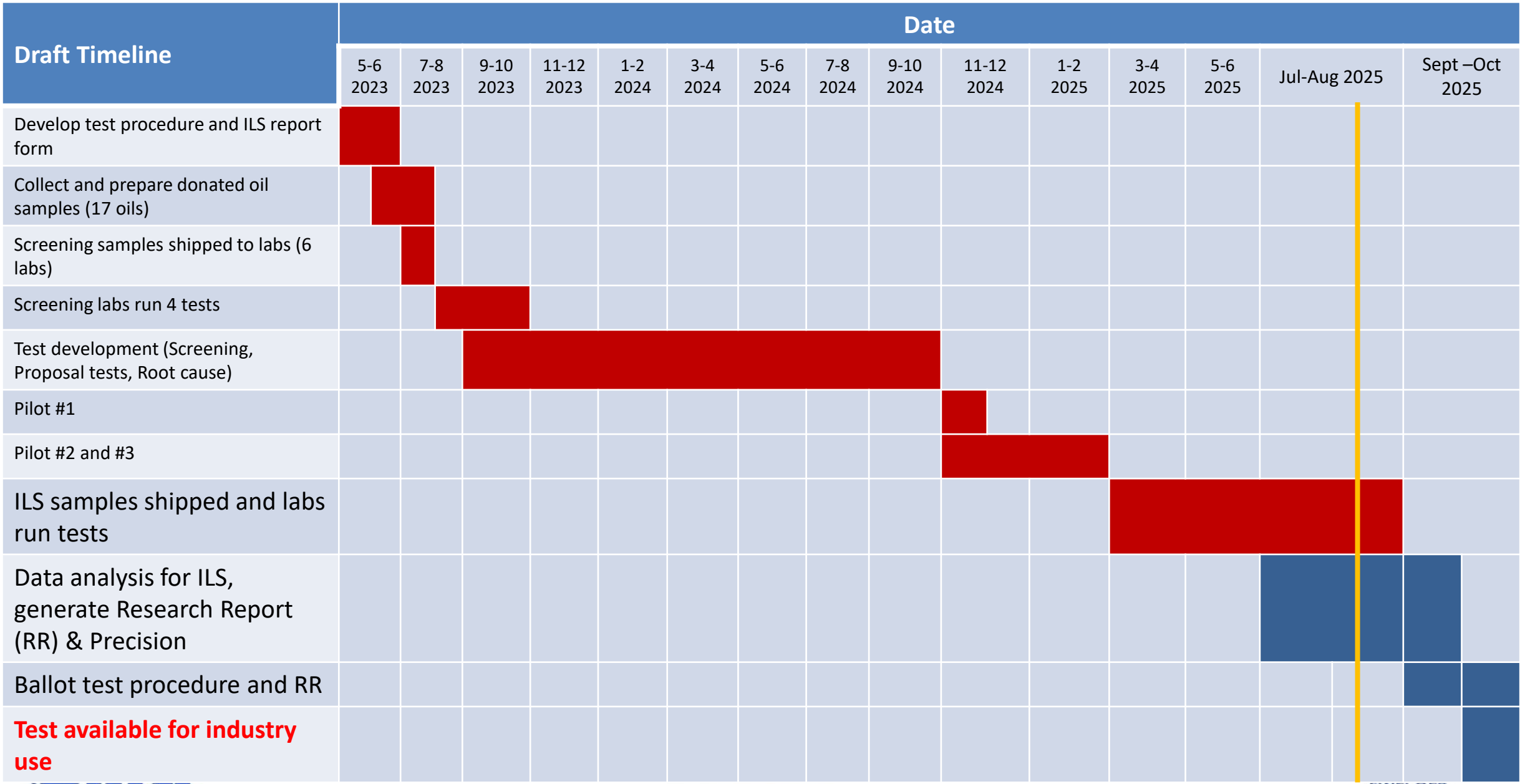
Oil	Average Temperature Increase, °C
Oil U	7.6
Oil F	9.8
Oil P	12
Oil K	13.4
Oil M	15.9
Oil R	16.2
Oil E	18.7



- The chart is color-coded according to the flow rate speeds; fast (green), mid (yellow) and slow (red).

- Notes for the temperature study:
- The sample size is different from that used in the shearing of the EOGT ILS due to the loss of sample from transferring from the graduated cylinder where flow rates were measured during the original run.
- Temperature measurements were done with a digital thermometer; the highest observed temperature reading was recorded for all oils.

Timeline – updated August 8, 2025



Action Items and Next Meeting

- Ongoing: Jared and John to work on data dictionary, all to give comments on procedure or video to Yong-Li, labs to review if data submitted accurately, let Yong-Li know of any precise funnel products and suppliers

- Remaining labs to submit data on measured funnel ID and part # for glass container to John (TMC), Yong-Li, Jared
- Stats group to provide data for labs 1, 3, 5, 7, 8 vs 1, 3, 5, 7 vs 1-8 for each set of oils (oils KMP, oils FU, oils E,R) and all 7 oils for time interval between 45 and 120 secs by Friday Aug 22
- Ask Lab 8 to check temperature before and after shearing (Procedure section 11.2 48 hr final shear) on at least 3 oils from ILS, one oil from slow flow, one oil from mid flow, and one oil from fast flow. Use digital thermometer to measure the sample temperature, noting the highest observed temperature. Please list the Oil name and initial and final observed temperature or just the increase in temp after shearing. Provide results by Friday Aug 22 if possible.

- Next meeting group to decide: 1) Include all 8 labs' data in ILS data analysis, 2) Include labs meeting funnel ID data (Labs, 1, 3, 5, 6?, 7, 8) in ILS data analysis, 3) select labs (Labs 1, 3, 5, 6?, 7)) data in ILS data, or 4) Rerun ILS for all labs

- Next Meeting: Friday Aug 22 at 9am CDT for 1 hr

Thank you for your support!

Participants		
Method Development (11)	Oil Donations (9)	Testing Labs (10)
Afton ExxonMobil Ford Infineum Intertek ISP Lubrizol Oronite Savant SwRI TMC	Afton Ford Infineum Lubrizol OH Technologies (donate filters only) Oronite Subaru TMC (collection, shipping only) Toyota	Afton Infineum Intertek ISP Lubrizol Richful Savant SwRI TMC (monitoring system only) Valvoline