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IFIA Americas Committee Inc.

Petroleum and Petrochemical Subcommittee

Position Paper

Sampling & Testing Cargoes Blended On Board Marine Vessels

IFIA AC member companies are often assigned to inspect cargoes of petroleum that are blended on board marine vessels at the loading port with the intention to meet certain contractual quality specifications of buyers and sellers. These cargoes are usually blended from two or more shore tanks, each containing a different component. The target composition of the final blend is typically based on a composite of shore tank samples, proportionally blended in a loading port laboratory. Shippers and receivers then rely on agitation of the cargo during proportional transfer into each of the vessel's tanks to mix all of the components to contract quality specifications.

IFIA AC members' experience has consistently indicated that, for many physical reasons, thorough mixing of these components does not always occur as intended. Therefore, when the blended cargo reaches the discharge port, manual samples taken from the vessel do not yield the same test results that were obtained at the loading port.

The *American Petroleum Institute (API)*, in its *Manual of Petroleum Measurement Standards (MPMS)*, has recognized the difficulties of obtaining representative samples from cargoes that are not uniform throughout their profile and cross-section in a tank. *API MPMS Chapter 8.1.8.3.3.1* states that "A running/all-levels sample is not necessarily representative (because of the difficulties of ensuring proportional filling of the sampler)." *API MPMS Chapter 17.1.9.7 Note:* states that "...on blended cargoes, vessel tank samples often will not be representative of proportional hand-blended samples that were tested at the port of loading."

All work performed by IFIA AC member companies is subject to regulatory audit for conformance to industry standards. Therefore, consistent with API and ASTM standards, IFIA AC member companies have resolved to take the following position:

1. All manual samples, shore tank and vessel tank, will be taken in accordance with methods prescribed in API MPMS, Chapter 8.1;
2. Laboratory analysis of all samples will be performed using standard industry test procedures, usually as specified by the *American Society for Testing and Materials (ASTM)*;
3. If analysis results indicate a possible problem with a cargo, blending, sampling and testing procedures will be carefully reviewed and findings promptly reported to the customer(s);
4. Test method precision limits (repeatability and reproducibility) will not be used to adjust the analysis results of any sample *except* as specifically authorized in ASTM method D3244.

Exceptions to the above position will be considered when the IFIA AC member company inspecting the cargo is instructed otherwise in writing *by all parties to the custody transfer*.

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