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RFG/Anti-Dumping Questions and Answers January 23, 1995

Energy and Fuels Division
Office of Mobile Sources
U.S. Environmental Protection Agency

RFG/ANTI-DUMPING QUESTIONS AND ANSWERS, JANUARY 23, 1995

The following are responses to most of the questions received by the Environmental Protection Agency (EPA) through January 9, 1995, concerning the manner in which the EPA intends to implement and assure compliance with the reformulated gasoline and anti-dumping regulations at 40 CFR Part 80. This document was prepared by EPA's Office of Air and Radiation, Office of Mobile Sources, and Office of Enforcement and Compliance Assurance, Office of Regulatory Enforcement, Air Enforcement Division.

Regulated parties may use this document to aid in achieving compliance with the reformulated gasoline (RFG) and anti-dumping regulations. However, this document does not in any way alter the requirements of these regulations. While the answers provided in this document represent the Agency's interpretation and general plans for implementation of the regulations at this time, some of the responses may change as additional information becomes available or as the Agency further considers certain issues.

This guidance document does not establish or change legal rights or obligations. It does not establish binding rules or requirements and is not fully determinative of the issues addressed. Agency decisions in any particular case will be made applying the law and regulations on the basis of specific facts and actual action.

While we have attempted to include answers to all questions received by January 9, 1995, the necessity for policy decisions and/or resource constraints may have prevented the inclusion of certain questions. Questions not answered in this document will be answered in a subsequent document. Questions that merely require a justification of the regulations, or that have previously been answered or discussed either in a previous Question and Answer document or the Preamble to the regulations have been omitted.

Topics Covered

SAMPLING AND TESTING PROCEDURES

1. **Question:** How should storage tanks be sampled for RFG?

Answer: Section 80.65(e)(1) of the regulations states that "[e]ach refiner or importer shall determine the value of each of the [reformulated gasoline] properties for each batch of reformulated gasoline it produces or imports prior to the gasoline leaving the refinery or import facility, by collecting and analyzing a representative sample of gasoline taken from the batch." "Batch of reformulated gasoline" is defined at § 80.2(gg) as "a quantity of reformulated gasoline which is homogeneous with regard to those properties which are specified for reformulated gasoline certification."

Samples that accurately represent batch properties are necessary in order to determine if RFG standards are being met. Therefore, the first concern of batch sampling is to determine whether or not the tank contents are homogeneous.

Gravity analyses of upper, middle, and lower samples is an appropriate means of establishing tank homogeneity. EPA would consider a tank to be homogeneous where the maximum difference in tested gravities between any two samples from different tank strata is no greater than 0.6 °API, unless there is reason to believe the tank contents are not mixed in spite of such gravity test results. For example, if samples from a storage tank have noticeably different colors, the gasoline in the tank should not be considered homogeneous even if the samples have gravity tests that are within the 0.6 °API range. If a question remains about whether the contents of a storage tank are fully mixed following gravity testing the party could resolve the homogeneity issue by conducting tests on the upper, middle and lower tank samples for benzene and oxygen. (Tank homogeneity could be established using benzene and oxygen tests on upper, middle and lower tank samples without the need for gravity testing.) EPA would consider a tank to be homogeneous if the maximum difference in benzene tests is 0.10 vol% and the maximum difference in oxygen tests is 0.15 wt%. The benzene and oxygen testing to establish homogeneity (as opposed to certification testing) could use a non-regulatory method such as mid-infrared analysis.

Where it is found that tank contents are not homogeneous, further mixing should be performed before collecting a representative sample for reformulated gasoline analysis.

Product stratification should also be avoided downstream of refiner or importer facilities, because samples must meet the downstream "per gallon" standards, and stratification could result in a portion of the gasoline in a tank being out of compliance with "per gallon" standards. For further discussion of homogeneity, see the Independent Sampling and Testing Section, Question 20 of the July 1, 1994 Question and Answer Document).

Storage tanks should be sampled according to 40 CFR part 80, Appendix D, using the method that will best represent the contents of the tank or batch. EPA expects the refiner, importer, or independent laboratory to use its best professional judgment in determining the

procedures that are necessary in order to best represent a given batch within the guidelines of Appendix D.

EPA preference for sampling storage tanks is a "running" or "all-levels" sample collected from an un-confined (no gauge tube) roof port. A "running" or "all levels" sample collected from a perforated gauge tube is the next best choice. In no case should a sample be collected from a solid gauge tube.

EPA prefers to collect "running" samples as opposed to "all-levels" samples for two reasons. First, assuming both "all-levels and "running" samples are collected with uniform lowering and retrieval rates, the "running" procedure achieves better representation of the tank contents than the "all-levels" procedure. This occurs because with the "running" procedure, one half of the sample is collected when lowering the apparatus, and the column sampled is undisturbed at that point. The second reason is that "running" samples are easier to collect than "all-levels" samples because the sample collector is not required to stopper the sample bottle.

If a tank cannot be bottle sampled from the top, then tap sampling is an appropriate substitute. For best representation, a single composite should be collected by proportionally filling the sample container from all available taps. If homogeneity is well documented, the entire sample may be collected from a single tap. If a refinery or importer tank has no roof sampling port or sampling taps, then a pipeline sample is the only other sampling means that is possible. Pipeline sampling is discussed in Question 2 of this section.

In the case of downstream quality assurance sampling from a storage tank which does not have a roof sampling port or taps for sampling, a sample collected from a truck or barge that has just loaded from that tank is marginally acceptable. The truck or barge should be completely empty before loading, and a "running" sample should be collected from the truck or barge compartment.

Appendix D contains general instructions and precautions that must be followed when choosing sampling equipment and containers, and when collecting samples. RVP is the most sensitive reformulated gasoline property, relative to sampling, and therefore precautions to prevent loss of "light ends" must be followed carefully. Also, sampling containers must be clean and rinsed well with the gasoline to be sampled in order that the sample is not contaminated, for example, with trace amounts of heavy metals. When collecting tap samples, the tap and connecting piping must be completely flushed, and the sample container must be bottom filled strictly according to the procedure outlined in Appendix D. Always label the container as soon as possible, and note the location of the sampling point and method of collection.

DOWNSTREAM BLENDING ISSUES

[NOTE: The following is an update to Question 16 in the Downstream Blending Section (Section IX-B) of the July 1, 1994 Question and Answer Document, and as updated in the

August 29, October 3, and November 21 Question and Answer Documents. This update adds an option for transmix processors who produce RFG from distillate-RFG mixtures.]

IX-B-16. Question: What options are available to pipelines for dealing with interface material, i.e., mixtures of two different types of product that result when the different products are adjacent during pipeline movement?

Answer: Interface Mixtures Involving RFG or RBOB

First, the pipeline must minimize the instances of prohibited mixing, through the sequencing together of product types that may be legally mixed, to the greatest extent possible.

Second, in those instances where illegal interface mixing occurs, the entire interface must be added to the product that will most ensure no adverse environmental consequences of the mixing. For example:

a. Interface mixtures of RFG or RBOB and conventional gasoline must be classified as conventional gasoline.

b. Interface mixtures of VOC-controlled RFG and non-VOC-controlled RFG must be classified as non-VOC-controlled RFG.[1]

c. Interface mixtures of VOC-controlled RFG for Region 1 and VOC-controlled RFG for Region 2 must be classified as VOC-controlled RFG for Region 2 or as non-VOC-controlled RFG.

d. Interface mixtures of OPRG-designated RFG and non-OPRG-designated RFG must be classified as non-OPRG-designated RFG.

e. Interface mixtures of VOC-controlled, OPRG RFG and non-VOC-controlled, non-OPRG RFG must be classified as non-VOC-controlled, non-OPRG RFG.

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[1] The mixing of VOC-controlled RFG with non-VOC-controlled RFG is not prohibited during the transition period prior to May 1 each year (prior to June 1 each year for retail outlets), and subsequent to September 15 each year. During the VOC transition period, however, mixtures of VOC-controlled RFG and non-VOC-controlled RFG nevertheless must be classified as non-VOC-controlled unless the resulting mixture meets the applicable VOC downstream standard (as discussed in the Transition section of this document), and during the VOC-control period such mixtures also must be classified as non-VOC-controlled RFG.

f. Interface mixtures of RBOB and RFG must be classified as RBOB.

g. Interface mixtures of any-oxygenate RBOB and ether-only RBOB must be classified as ether-only RBOB.

h. Interface mixtures of generic RBOB (i.e., any-oxygenate or ether-only RBOB) and refiner-specific RBOB (under § 80.69(a)(1)) must be classified as refiner-specific RBOB.

Third, the pipeline must retain documents that reflect the nature of any illegal interface mixing and that the interface was classified in the proper manner, and must make these documents available to EPA upon request.

Interface Mixtures Involving Conventional Gasoline and Not Involving RFG

In the case of interface mixtures that do not involve RFG or RBOB, pipelines may follow their historical practices, and will not be treated as a refiner based on such interface mixtures,so long as:

First, the interface to be blended is generated through pipeline operations, i.e., the blending does not involve blendstocks that are present for the purpose of blending.

Second, the conventional gasoline involved meets all standards and requirements that apply to conventional gasoline, including the volatility standards and the substantially similar requirements;

Third, the volumes of interface are recorded and made available for EPA inspections.

For example, in the case of interface mixtures that involve conventional gasoline and blendstocks (natural gasoline, raffinate, naphtha, etc.), if a pipeline historically has used midpoint cuts for this type of interface the pipeline could continue this practice without meeting the "refiner" requirements as a result of any blendstock that would be mixed with conventional gasoline through this process. It would not be appropriate, however, to classify all blendstock-conventional gasoline interface mixtures as conventional gasoline, i.e., to "clean cut" the interface into the conventional gasoline, because this practice would result in a net increase in conventional gasoline volume.

Interface mixtures that include neither RFG nor conventional gasoline are not impacted by the RFG/anti-dumping regulations.

Transmix

EPA understands there are certain types of interface mixtures that cannot be easily added to either of the adjoining products that produced the interface. This primarily is the case of

interface mixtures of gasoline and distillate, commonly called "transmix." EPA further understands that the current pipeline industry practice is to transport transmix via pipeline or barge to a facility designed to separate the gasoline and distillate portions. The owner or operator of such a facility is called a "transmix processor," and is a refiner under the RFG and anti-dumping programs.

Transmix Processors

Gasoline produced which is classified as conventional gasoline

In the case of conventional gasoline produced from transmix by a transmix processor, the following option is available:

First, the transmix used must be a mixture of distillate and gasoline - either RFG or conventional gasoline. If the transmix is a mixture of distillate and blendstock, the blendstock will never have been accounted-for, and the transmix processor must meet the anti-dumping refiner standards and requirements for any gasoline produced using this transmix.

Second, no additional blendstocks may be used. If blendstocks are used, in addition to the transmix, the transmix processor must meet the anti-dumping refinery standards and requirements for this blendstock in the same manner as any other blender-refiner. A transmix processor could, of course, blend gasoline produced through the process with other finished gasoline without invoking the anti-dumping requirements, e.g., premium grade gasoline could be blended to improve octane.

Gasoline produced which is classified as RFG

In the case of RFG produced from transmix by a transmix processor, the following option is available:

First, the transmix processor must meet the requirements that apply to refiners, including the requirement to meet refiner RFG standards under §§ 80.41 and 80.65(c) (with the limited exception described below), sampling and testing under § 80.65(e), independent sampling and testing under § 80.65(f), record keeping under § 80.74, reporting under § 80.75, and attest engagements under §§ 80.125 through 80.128.

Second, the transmix used must be a combination of distillate and RFG, and may not be a mixture of distillate and conventional gasoline. The transmix processor must obtain documents from the transferor of the transmix which certify the gasoline portion of the transmix is RFG, and must retain these documents in the manner specified under § 80.74.

Third, the transmix processor must meet all RFG standards specified in § 80.41(a) or (b), and the standard for T-90 under § 80.41(h)(2)(i) (in the case of transmix processor with the statutory baseline, an annual average T-90 that is equal to or less than 332 °F). The transmix processor need not meet the simple model standards for sulfur and olefins under § 80.41(h)(2)(i) for the RFG produced from transmix. If the transmix processor uses any blendstocks in addition to the transmix, however, the sulfur and olefin standards must be met for these blendstocks.

The distinction between the treatment of a transmix processor who produces RFG versus conventional gasoline is appropriate because the gasoline produced by a transmix processor is not identical to the gasoline that went into the transmix. The changes in gasoline quality through transmix processing are simply less critical for conventional gasoline than for RFG.

In the case of RFG produced by a transmix processor following the procedures described in this Answer, however, the
RFG will meet all refiner standards which are applicable downstream of the refinery level. Even though a transmix processor who produces RFG is not held to the refiner standard for sulfur and olefins (for which there are no downstream standards), EPA believes a transmix processing operation does cause significant changes in the sulfur and olefin levels from the levels of the RFG portion of the transmix received by the processor.

Transmix Blending

EPA understands that in certain limited situations where transmix cannot be transported via pipeline to a transmix processor, current pipeline industry practice is to add the transmix to gasoline in very small quantities - 0.25 percent or less of the gasoline volume - and to test the resulting gasoline to ensure it remains on-spec.[2] This practice would be treated as illegal blending under the RFG and anti-dumping programs, unless the blender meets all applicable refiner standards and requirements.

In the case of transmix added to conventional gasoline:

First, the transmix must result from normal pipeline operations.

Second, the transmix must be present in a terminal from which there is no out-bound pipeline or water transportation by which the transmix could be transported to a transmix processor, or the pipeline's historical practice at the terminal (the practice

[2] The transmix is added to gasoline instead of to distillate, because the consequences of any motor vehicle driveability problems resulting from distillate being mixed with gasoline are less serious than the consequences of explosions that could result from gasoline being mixed with distillate.

beginning at least before January, 1994) has been to blend transmix into conventional gasoline without further processing.

Third, the transmix is blended at a rate no greater than the historical rate the pipeline can document was used by the pipeline, and pipeline documents the current rate of transmix blending.

In the case of transmix added to RFG:

First, the transmix must result from pipeline operational necessity.

Second, the transmix must be present in a terminal from which there is no out-bound pipeline or water transportation by which the transmix could be transported to a transmix processor.

Third, conventional gasoline must not be among the slate of products that arrive at the terminal (transmix must be blended with conventional gasoline if possible).

Fourth, the blending rate of transmix to RFG must be no greater than 0.25 percent by volume.

Fifth, the transmix must be blended with RFG in a batch mode, so that a sample may be collected of the entire batch.

Sixth, the transmix-RFG blend must be sampled and tested, and the resulting blend must meet all applicable RFG downstream standards, before any of the blended gasoline leaves the terminal.

Seventh, the pipeline must retain documents that reflect the rate of transmix blending and the results of all testing on the transmix-RFG blend, and must make these documents available to EPA upon request.

As an alternative to blending the transmix in a batch mode with sampling and testing before any of the RFG blended with transmix leaves the terminal, the transmix may be blended with RFG in line provided that the pipeline carries out the following program to ensure the transmix will not cause any adverse environmental consequences.

First, the pipeline must conduct a program of laboratory testing, in which samples of transmix are mixed with RFG to determine the effects of the transmix on the RFG. In this program, the transmix samples must to the greatest extent possible represent the full range of the transmix types that are typically blended by the pipeline, and the RFG must to the greatest extent possible represent the full range of the types of RFG into which transmix will be blended by the pipeline. These different transmixes and gasolines must be blended at the maximum rate of transmix blending the pipeline intends to use, but a maximum of 0.25% transmix by volume.

Second, the RFG must be tested for each RFG parameter (RVP, oxygen, benzene, sulfur, olefins, aromatics, E200, and E300), and the RFG transmix blend must be tested for each of these parameters, using the testing methods specified at § 80.46.

Third, the results of all of the laboratory tests must show that the maximum change in properties of the RFG for any RFG-transmix blend is not more than the ranges specified at § 80.65(e)(2)(i).

Fourth, the pipeline must conduct RFG-transmix blending as described in steps 5 and 6 of the first RFG-transmix procedure, above, for a period of 30 days, and the results of the blending must show that the maximum change in properties of the RFG for any RFG-transmix blend is not more than the ranges specified at § 80.65(e)(2)(i).

Fifth, the pipeline must conduct monthly tests of the RFG-transmix blended, and the results of the blending must show that the maximum change in properties of the RFG for any RFG-transmix blend is not more than the ranges specified at § 80.65(e)(2)(i).

The procedures outlined above for transmix blending would be applicable to terminals as well as pipelines.