

V. SAMPLING AND TESTING

A. 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.^(1/23/95)

2. Question: Must sampling be performed only from tank storage, or will pipeline sampling qualify?

Answer: For a refiner, pipeline sampling is appropriate when performed according to the procedures outlined in 40 CFR part 80, Appendix D. Appendix D, section 11.4 describes how to collect a continuous or intermittent flow proportional sample, using automatic sampling apparatus, of an entire batch. Under § 80.65(e), however, refiners must have test results in hand before shipping RFG. Therefore the only way a refiner could conduct pipeline sampling of an RFG batch, would be to collect the entire batch in tankage subsequent to the pipeline sampling and prior to shipping the batch out of the refinery, and to hold the batch in that tank until the requisite test results are complete.

In the case of downstream quality assurance sampling, pipeline sampling as outlined in Appendix D is appropriate, and tank collection is not an issue.

In the case of an independent laboratory collecting a pipeline sample at a refinery or import facility in fulfillment of the independent sampling and testing requirement, the automatic sampling equipment must be calibrated and operated by the independent laboratory during the entire period of time the pipeline sample is collected. See the Independent Sampling and Testing Section, Question 18, for further discussion of pipeline sampling and in-line blending.^(7/1/94)

3. Question: Appendix D of the fuels regulations specifies that only taps extending at least 3 feet inside a tank are suitable for sampling. Is this requirement applicable for gasoline sampling? Is it necessary to secure EPA's acceptance before collecting samples from taps without such "stingers?"

Answer: Section 11.3 of Appendix D to 40 CFR Part 80, titled "Tap Sampling," states that where

tap sampling is conducted, "[t]he tank should be equipped with at least three sampling taps... extending at least three feet inside the tank shell." The tap extension into the storage tank is commonly called a "stinger." Section 11.1 of Appendix D provides for the use of alternative procedures (such as sampling from taps without "stingers"), however, "if a mutually satisfactory agreement has been reached by the party involved and EPA and such agreement has been put in writing and signed by authorized officials."

EPA has learned that where storage tanks with floating roofs have tap samples, the taps do not have tap "stingers" because they would interfere with the floating roof. EPA also understands that most gasoline storage tanks have floating roofs. Moreover, EPA believes that tap "stingers" do not significantly improve the quality of samples collected, because most gasoline stratification manifests as horizontal strata in the gasoline being stored. As a result, EPA will not require parties to obtain agreement in advance to use sampling taps without "stingers," provided that the storage tank has a floating roof that would interfere with the tap "stingers," and the tank does not allow other types of sampling (e.g., a gauge tube). In addition, any party that certifies RFG or conventional gasoline using samples collected from a tap sampler must be able to demonstrate the gasoline in the storage tank was homogeneous. Several methods of establishing tank homogeneity have been described in other guidance. See, Sampling and Testing question 1 from the January 23, 1995 Question and Answer document. (10/31/95)

4. **Question:** Under what environmental conditions must RFG samples be shipped and stored?

Answer: The sample container specifications outlined in 40 CFR part 80, Appendix D, limit the materials and closure systems for sample containers, such that RFG properties will be maintained under normal conditions encountered during shipping (by air or ground), and long term storage at room temperature and pressure. Refrigerated storage is appropriate if desired. Refrigeration is not necessary, however, as long as temperature extremes (less than 0 degrees F, and greater than 120 degrees F) are avoided during storage.(7/1/94)

5. **Question:** Should separate samples be collected for RVP analysis?

Answer: One sample may be used for all of the RFG parameters that need to be determined, including RVP. However, because sample handling in the laboratory may affect various reformulated gasoline properties, such as RVP, analyses must be performed in order of sensitivity. As long as RVP is the first laboratory analysis performed on each sample, there is no need to collect a separate sample just for the RVP measurement.(7/1/94)

6. **Question:** Are there any temperature requirements for the shipping of samples?

Answer: No.(7/1/94)

7. **Question:** When handling samples to be analyzed for oxygen and oxygenate content, section 80.46(g), what are conditions for bringing the samples to room temperature?

Answer: There are no conditions other than to have the sample at room temperature before beginning any volumetric measurement for the analysis.(7/1/94)

8. **Question:** When preparing samples for oxygen analysis according to section 80.46(g), isn't there a risk of losing volatile components when allowing samples to come to room temperature?

Answer: The fractional loss during "limited" sample handling is not measurable for these properties.(7/1/94)

9. **Question:** Are the samples in section 80.46(g) oxygen analysis brought to room temperature in an

autosampler or similar device?

Answer: No.^(7/1/94)

10. **Question:** Do the sample handling requirements for oxygen and oxygenate content apply to the analysis of other fuel parameters.

Answer: The sample handling procedures must comply with the requirements of their individual testing methods. Aromatics, oxygen and oxygenate, benzene, olefins, and sulfur samples should be at room temperature, although aromatics samples for GC-MS analysis are measured gravimetrically and are not very temperature sensitive. Distillation samples require 55 °F - 65 °F. Vapor pressure requires 32 °F - 40 °F.^(7/1/94)

11. **Question:** Are samples collected at a retail outlet dispenser acceptable for quality assurance testing requirements?

Answer: Yes, when sampling from retail outlets, nozzle samples should be collected according to the procedure specified in 40 CFR part 80, Appendix D, section 11.5.^(7/1/94)

12. **Question:** Please comment on how laboratories can discard erroneous test results. Also, please comment on the example of a test result which is clearly an outlier, but without a discernible cause.

Answer: Suspect test results should not be discarded, but should be treated according to the laboratory's quality assurance plan covering the test method. At a minimum, the plan should include steps to document that a result is suspect, the reason the result is considered suspect, the results for the sample that are not considered suspect, the steps that were taken to obtain the non-suspect result, and the steps that were taken to assure quality of future analyses. Reporting requirements (to EPA) only include submission of the final result. However, documentation of erroneous results should be kept for auditing purposes.

An outlier which can be clearly identified through statistical means, may be discarded when allowed by the laboratory's quality assurance plan. These steps must be clearly documented as explained above. EPA will not accept retesting on a regular basis as a means to achieve favorable test results through test to test variation. Also, it is not considered appropriate to only retest unusually high (or unfavorable in the case of properties like oxygen content) test results. An outlier in the favorable direction should also be investigated.^(7/1/94)

13. **Question:** Will EPA waive the requirement for completing all testing prior to shipping for complex model conventional gasoline?

Answer: Section 80.101(i)(1)(i)(A) requires refiners and importers of conventional gasoline to determine the value of each of the properties required for determining compliance with applicable standards by collecting and analyzing a representative sample of each batch of gasoline using the regulatory test methods. Refiners and importers, therefore, must sample each batch of conventional gasoline before the gasoline is shipped from the refinery. The regulations, however, do not require that the testing for conventional gasoline properties be completed before the gasoline is shipped. ^(11/10/97)

14. **Question:** Section 80.101(i) provides a composite sampling and testing option to determine conventional gasoline properties. One provision to this option is that composite samples will need to be prepared as described in § 80.91(d)(4)(iii). Part B of this procedure requires that "properties of the retained samples shall be adjusted for loss of butane by comparing the RVP measured right after blending with the RVP determined at the time that the supplemental properties are measured." No further details

are given. Please detail how this process would work.

Answer: The best process would be to avoid the butane adjustment by blending the fuels in such a way that butane loss is avoided. Practically, this means having all fuel samples at or below 32 degrees Fahrenheit before their containers are opened for blending. In practice, however, some loss may occur. Three assumptions are made in the adjustment procedure.

The first of these is that RVP blends linearly with volume. This is not true if ethanol fuels are included, so ethanol blended fuels must be treated separately. If ethanol blended fuels are to be composited, a separate composite must be maintained for them. If different ethanol blended fuels are to be produced, such as 2.0% oxygen and 3.7% oxygen fuels, these must be composited separately. In operation, the maintenance of several composites may be necessary, one containing all hydrocarbon fuels, one with 2.0% oxygen from ethanol, and one with 3.7% oxygen from ethanol. In general, any single ethanol fuel composite may span a range of up to 0.5% oxygen. In other words, samples containing from 3.3% to 3.8% oxygen may be composited. If other samples are produced, they will require a separate composite. Since fuels containing MTBE and similar ethers do not affect RVP as dramatically, they may be combined with the hydrocarbon fuels.

The second assumption is that all the loss in RVP observed is due to evaporation of n-butane. In reality, this is not true, as virtually all of the isobutane and some of the pentanes will be lost. However, considering the difficulty of ascertaining the exact species lost, this is a reasonable approximation.

The final assumption is that the RVP of n-butane is 51.6 psi. This value was taken from a Phillips Petroleum Reference Data circular (bull.no.521).

The technique for producing a composite sample would require that additions to any composite be of consistent volume, 100 ml for example. Using this method, the final expected RVP of the composite would be the simple arithmetic average of the included samples. If the measured RVP of the composite is different than this calculated value, any measured property should be adjusted for the volume loss due to butane. This is done by calculating the quantity of n-butane required to bring the composite to its original RVP. As an example, the following calculation would result from a composite of 80 samples at 100 ml each. The calculated average RVP should be 7.20 psi, and the measured RVP of the composite is 6.60 psi.

$$6.6(8000 - z) + 51.6(z) = 7.2(8000) \quad (I)$$

$$52,800 - 6.6(z) + 51.6(z) = 57,600 \quad (II)$$

$$45.0(z) = 4,800 \quad (III)$$

$$z = 106.7 \quad (IV)$$

$$106.7/(8000) - 106.7 = 1.35\% \quad (V)$$

This means that 1.35 volume percent butane must be added to bring the composite sample to its original RVP. This is the volume correction that must be applied to all other measured properties. For intrinsic properties, such as the concentration of benzene, this correction is applied as a ratio, so that a measured concentration of benzene in the composite would be reduced by 1.35%. As an example of this, where the measured benzene concentration is 0.925%

$$0.925(8000 - 106.7) = (b)8000 \quad (VI)$$

$$b = 0.913 \quad (\text{VII})$$

The corrected benzene concentration 0.913% by volume. This type of correction would also be applied to oxygenate, sulfur, aromatic, and olefin measurements.

This is a simplified version of the correction calculation, and assumes a consistent product batch size. In cases where the batch size varies, the sample removed for composite must be proportional to the size of the batch. For example, if batches totaling 50,000, 30,000, and 80,000 bbls. are produced, one might remove 100, 60, and 160 ml from the respective batches. This amounts to volume weighting the composite for batch sizes. The calculated average RVP value is a weighted average of the original values:

$$\text{RVP1}(\text{Vol1}) + \text{RVP2}(\text{Vol2}) + \text{RVP3}(\text{Vol3})\dots = \text{RVP}(\text{avg})(\text{Vol}(\text{total}))$$

The volume compensation is calculated exactly as in the simplified case.

Distillation measurements require a different type of correction, since any evaporative loss due to butane would affect the initial portion of the distillation curve. In fact, during the test, there is loss, and this loss is assumed to be due to the inability of the still to recover butane. The most appropriate way to apply the correction here would be to begin the distillation with only 98.6 ml of fuel. The result will be a larger loss. This measured loss will be the correction for butane loss, and will yield corrected values for the distillation. If E200 and E300 values are needed, they are taken from the corrected curve.^(1/9/95)

15. **Question:** Conventional gasoline refineries meeting simple model average standards must monitor their T90, olefins, sulfur and exhaust benzene (function of benzene and aromatics) results. Since RVP is not required for anti-dumping compliance in the simple model case will the butane adjustment step be required for composite samples at simple model refineries?

Answer: No. The adjustment may be done but is not required.^(7/1/94)

B. TEST METHODS

1. **Question:** Please confirm that the regulations require that the test methods listed in § 80.46 must be used for certifying both conventional and reformulated gasoline by the refiner or importer and no other methods are acceptable.

Answer: Confirmed. However, the regulations provide for the use of optional alternative methods for oxygen and aromatics until January 1, 1997. See §§ 80.46(f)(3) and (g)(9). The other exception to the regulatory test method requirements pertains to California gasoline. § 80.81(h) states that, for purposes of the batch sampling and analysis requirements of § 80.65(e), a refiner of California gasoline may use a sampling and/or analysis methodology prescribed in the Title 13, California Code of Regulations, sections 2260 et seq., in lieu of the regulatory methods for sampling and testing California gasoline.^(7/1/94)

2. **Question:** For conventional gasolines, can a refiner use the same methods that were accepted for baseline determination for compliance testing if they are correlated to the regulatory methods?

Answer: No. The methods specified in § 80.46 must be used for conventional gasoline. See § 80.101(i)(1)(i)(A).^(7/1/94)

3. **Question:** The regulations dictate specific equipment and methodologies for reformulated gasoline analysis. We recommend that the EPA only specify the precision or level of accuracy it requires and let

the chemist or laboratory decide which method and type of equipment they will employ for the required analysis.

Answer: Although this may be possible at some time in the future, at the present time, tolerance issues dictate that we specify equipment and method.(7/1/94)

4. **Question:** The preamble states: "As with all parameters, there will be only one regulatory distillation test method. However, other suitable methods may be used for defense purposes (but not to meet mandatory testing requirements) as long as they are properly correlated with the regulatory test method." Does this mean that for testing downstream of the refinery or import facility for quality assurance purposes, other methods may be used by a refiner for defense assuming they are correlated to the regulatory method?

Answer: Yes.(7/1/94)

5. **Question:** Since other ASTM methods are being developed that would allow the use of one analyzer to obtain benzene, aromatics, and olefins, will EPA allow any of these new methods to be used for gasoline certification and/or a refiner's defense?

Answer: They are not allowed for the determination of properties of reformulated, or conventional gasoline at the refinery, but, as indicated above, they may be used downstream for quality assurance. In the future, EPA may consider amending the regulations to allow for new methods as it did for RVP.(7/1/94)

6. **Question:** Since RVP and low-sulfur diesel regulations allow the use of alternative methods (if they are correlated to EPA-approved methods), will EPA allow these alternate methods to be used in reformulated gasoline certification and/or a refiner's defense?

Answer: EPA will not allow these alternative methods to be used in reformulated gasoline certification, although, as discussed in the preceding question, correlated alternative test methods may be used for quality assurance purposes.(7/1/94)

7. **Question:** We interpret the following with respect to sampling and testing at the terminal level:

a. That oxygenate blenders are required to use the same methodology for oxygen testing as prescribed for refiners under § 80.46.

b. That for quality assurance purposes, a terminal may use alternate methods if such methods are correlated with those prescribed under § 80.46.

Answer: Oxygenate blenders are required to use the methodology for oxygen testing prescribed under § 80.46. This is true both for the oxygenate blenders who blend in terminal tanks, under § 80.69(c), and for those who splash blend in trucks, under § 80.69(e). In the case of truck blending, any quality assurance testing beyond that specified under § 80.69(e) could use alternative test methods, however.(7/1/94)

8. **Question:** Will a portable midrange infrared analyzer be acceptable if correlated to the mandatory test method at an independent laboratory for monitoring the oxygenates, benzene, and aromatics for terminals and retailers in their quality assurance programs?

Answer: Testing for downstream quality assurance programs may be done with test methods other than the regulatory methods if adequate correlation to the regulatory test methods is demonstrated. However, testing for downstream oxygenate blending must be done using the regulatory test

methods.(10/3/94)

9. **Question:** Can a refiner certify finished gasoline using method D-4294 or D-5354-94 (Antek Oxidation-UV Fluorescence Method) instead of D-2622 for sulfur? Will EPA accept other methods for measuring total aromatics content such as using mid-IR instruments?

Answer: No. Again, alternate methods are not allowed for certification of the gasoline by the refiner or importer, with the exception of alternatives for oxygen/oxygenates and aromatics until January 1, 1997, but they can be used for downstream quality assurance testing if correlated with the regulatory method.(7/1/94)

10. **Question:** Will foreign refiners be allowed to use a sulfur test other than D-2622 in order to verify specification?

Answer: Foreign refiners are not regulated parties under the reformulated gasoline regulations, issued on 12/15/93. Importers of foreign gasoline are required to test the gasoline using the regulatory methods, including the regulatory test method for sulfur.(7/1/94)

11. **Question:** What is the definition of sulfur in gasoline?

Answer: The sulfur portion of all sulfur forms and compounds.(7/1/94)

12. **Question:** If a refiner used ASTM D-3120 to determine sulfur levels in 1990, its baseline sulfur value could be as low as 3 ppm, since this is the low end of the valid range for this test method. However, this refiner must use the EPA-specified test method for sulfur, ASTM D-2622, for compliance purposes beginning in 1995. Since D-2622 is only valid down to 10 ppm, this refiner could never meet the Simple Model caps for sulfur. What options does this refiner have?

Answer: Section 80.91(d)(5) specifies that in certain situations data from test methods other than those specified in § 80.46 may be used to establish refinery baselines. Regardless of the method used, however, for test results that are below the lower valid range limit for the analysis method used the lower valid range limit for the method may be used for establishing a baseline under § 80.91.

For purposes of compliance calculations, a refiner who measures a parameter at below the lower valid range limit for the analysis method also would use the lower valid range limit in its baseline determinations. One exception to this general rule applies in the case of a refiner who used a parameter test method for baseline development that is different from the regulatory test methods specified under § 80.46 for that parameter, and where the baseline test method had a lower valid range limit that is more stringent than the lower valid range limit for the regulatory test method. In this limited exception, during each compliance period a refiner who measures a parameter value at below the valid range for the regulatory test method may use a value of zero in compliance calculations.

This limited exception is illustrated with the following example. A refiner collected sulfur content data for purposes established a refinery baseline using ASTM method D-3120, which has a lower valid range limit of 3 ppm. This refiner could use a sulfur value of 3 ppm for any test result that is less than 3 ppm in the baseline calculations. For purposes of determining compliance with the RFG and anti-dumping standards, however, this same refiner is required under § 80.46(a) to measure the sulfur content of gasoline using ASTM method D-2622, which has a lower valid range limit of 10 ppm. Because the lower valid range limit for the baseline sulfur test method used by this refiner (3 ppm) is more stringent than the lower valid range limit for the regulatory sulfur test method (10 ppm), the refiner could use a sulfur value of zero for any compliance test result that is less than 10 ppm. (10/31/95)

13. **Question:** A procedure has been outlined by the EPA for the certification of oxygen content by meter for the oxyfuel program. Can this method be used for certification of oxygen content in reformulated gasoline? Is an exemption for in-line blending required?

Answer: No. The regulatory method for oxygen testing, or the approved temporary method discussed in question 39, must be used for certification of reformulated gasoline produced at the refinery and also for blending oxygenate with RBOB. For further discussion of the exemption see the In-line Blending Section.^(7/1/94)

14. **Question:** Regarding oxygen and oxygenate content analysis by the OFID method, § 80.46(g)(1)(ii) states "It is applicable to individual organic oxygenated compounds ... in gasoline having a final boiling point not greater than 220 C (428 F). Samples above this range should be diluted to fall within the specified range." ASTM allows a final boiling point of 437 F.

A procedure should be available that allows handling this boiling range. Failing that, what procedures are acceptable for diluting that will not distort other parameters?

Answer: Dilution refers to oxygen concentration, not to boiling point. The final boiling point referred to in § 80.46(g)(1)(ii) was mistakenly specified as 220 °C, rather than the correct value of 225 °C that should be used. Nevertheless, we believe that essentially all finished fuels will have end points below 220 °C, especially in reformulated fuels controlled for E300.^(7/1/94)

15. **Question:** With the industry average level for sulfur, has the EPA seen any problems with their OFID instrumentation? The understanding is that small levels of sulfur kills the catalyst used in this application resulting in much downtime and a calibration drift over time.

Answer: We have not experienced this problem. We believe the latest catalysts are very sturdy.^(7/1/94)

16. **Question:** Concerning the OFID test method for oxygenates:

a) The method has a program run of 20 minutes, but over half the eluting peaks on the table in the method come off after 20 minutes. For example, the last oxygenate present on the table elutes off at 38 minutes. Can one use other chromatographic conditions such as those conditions set in the ASTM draft method for OFID analysis to achieve shorter retention times and better analytical techniques?

Answer: Yes.^(10/31/94)

b) The method states that the chromatographic parameters for hydrogen (H₂) and air (O₂) for the FID should be 370 ml/min for O₂ and 15 ml/min for H₂. According to the manufacturer, these conditions cannot be met with the instrument we have. The manufacturer recommendation is air at 300 ml/min and H₂ at 30 ml/min. Will EPA accept requirements or recommendations from the instrument manufacturers which are different than what is stated in the method for the best chromatographic way of running their OFID system for oxygenate determination?

Answer: Yes.^(10/31/94)

c) Can one use the same vendor for purchasing calibration standards along with the independent secondary Q.A. standard needed in the quality control part of this method? Please outline all differences that there must be between the standards.

Answer: It would generally be inappropriate to purchase prepared Calibration and Independent

Standards from the same purveyor; however, if one is purchasing pristine pure compounds for the purported purpose of preparing precise standards, one vendor may be acceptable.

The main concept is that an inaccuracy caused by an impure standard material would be identified by the use of a different compound, assuming that the second compound is not impure by an identical amount. Similar logic is applied in that a different chemist should prepare the second standard to avoid replicating an inadvertent mispreparation.^(10/31/94)

d) Please clarify the quality control section by outline what is required to be run with each batch of RFG.

Answer: Quality control for OFID (FR V59, No32, pp7828-7833)

QC Provision	Required	Recommended
CalCheck Standards 1 per 10 samples or once per analysis batch.	±10% EtOH MeOH ±13% MTBE t-BuOH	±6% EtOH MeOH ±10% MTBE t-BuOH
Independent Check Stds 1 per 100 samples or once per analysis batch.	±10% EtOH MeOH ±13% MTBE t-BuOH	±6% EtOH MeOH ±10% MTBE t-BuOH
Spikes Required only if matrix effects are suspected. One per analysis batch or one per ten samples recommended.	±13% EtOH MeOH ±16% MTBE t-BuOH	±10% EtOH MeOH ±13% MTBE t-BuOH
Duplicates	Limit to Range	
	MeOH	0.043C + 0.010 (0.27-1.07%)
	MeOH	0.053C (1.07-12.73%w/w)
(Duplicates are not required, but it is recommended that one sample in ten or one per analysis batch be duplicated) ^(10/31/94)	EtOH	0.053C
	MTBE	0.029C + 0.069
	DIPE	0.048C
	ETBE	0.074C
	TAME	0.060C

17. **Question:** The EPA allows ASTM D-4815-93 to be used for determination of oxygenates prior to 1/1/97 if it is correlated to the GC-OFID method identified in § 80.46(g)(1). Does the EPA know of any such correlations that have been developed for use by the industry?

Answer: Because D-4815 is such an operator dependent method, each correlation must be developed individually. A universal correlation equation is not acceptable. Correlation of a laboratory's D-4815 instrument can be shown through participation in a "round-robin" program that includes a GC-OFID or by correlation to any other laboratory's GC-OFID.^(7/1/94)

18. **Question:** What is the frequency of correlation samples for laboratories to remain qualified for reform testing?

Answer: There is no definition of "qualified" laboratories under the regulations. The principle requirement for correlation relates to the use of one of the alternate methods allowed until 1/1/97.

When one elects to use ASTM D1319 for measuring aromatic content in gasoline, or ASTM D4815 for the measurement of oxygenates in gasoline, correlation to the regulatory methods must be established. The principle reason for this requirement is the operator dependent nature of D1319 and D4815. This operator dependence is echoed by the relatively large reproducibility of these methods. Because of the operator dependence, each facility (or in some cases, each operator) must establish its own correlation to the appropriate regulatory methods. This correlation need not be established via an internal route, participation in an outside program or ongoing exchange group may be sufficient. The actual number of tests performed will depend on the quality of the correlation. In general, some initial group of tests will be necessary, perhaps from 15 to 30, to establish the nature of one's correlation. If both methods report identical numbers, this may be enough, and all that would be required in addition would be a few samples a month to verify that no shift has occurred.

If this initial effort describes a bias, considerably more effort may be necessary. The object would be either to describe the bias via a correlation equation, or eliminate the bias via improvement (or alteration) in the technique of the operator. The effort required will be determined by the difficulty in eliminating the bias or producing the equation. Following this, some number of samples should be run on an ongoing basis, to confirm that no shifts have occurred. Again, this number will be determined by the individual's confidence in his established correlation.

In practice, this means that each laboratory must establish this correlation if it intends to measure aromatics by ASTM D1319, or oxygenates by ASTM D4815. This correlation testing is done to define a bias, or show that none exists. It is not appropriate to include reproducibility in this discussion, since the intention is to correlate the mean of one method with the mean of a second method. In all cases, the fuel must meet its intended aromatics level as measured by GC/MS, and its intended oxygenates level as measured by OFID.^(1/9/95)

19. **Question:** Since there may be interference between benzene and ethanol or methanol when using the prescribed method for benzene, ASTM D 3606-92, how may instrument parameters be adjusted to resolve benzene from ethanol or methanol as suggested in the final regulations?

Answer: During the rulemaking process, comments directed to the Agency encouraged the use of ASTM D 3606-92. Other comments regarding that method warned against potential interference in the determination of benzene in gasolines containing ethanol or methanol. As a result of these comments, language was inserted into the regulation requiring, for ASTM D 3606-92, that "Instrument parameters must be adjusted to ensure complete resolution of the benzene, ethanol and methanol peaks..." during the operation of this test.

In light of uncertainty regarding what modifications would be considered acceptable by the Agency, the decision was made to describe in detail the best set of modifications currently known to EPA. These primarily include changes in two parameters (column and internal standard) from those described in ASTM D 3606-92.

Column Type and Length:

Original ASTM D 3606-92

Two column sections, in order:

- 1) 5' X 1/8" Methyl Silicone on chromasorb
-valve-
- 2) 15' X 1/8" 1,2,3 tris(2-cyanoethoxy)propane (TCEP) on chromasorb
-detector-

Modified ASTM D 3606-92

Three column sections, in order:

- 1) 5' X 1/8" Methyl Silicone on chromasorb (10% OV101 on Chrom PAW 80/100)
-valve-
- 2) 5' X 1/8" TCEP on chromasorb (20% TCEP on Chrom PAW 80/100)
- 3) 15' X 1/8" Carbowax 1540 (15%) on chromasorb W (eg. Wasson-ECE K16)
-detector-

In the modified setup the total column length is extended by 5'. The original 15' section of TCEP is replaced by two sections of column totaling 20' and connected in series, or one 20' column packed to simulate the two columns. This combined 20' section of column is connected in the same way as the original 15' TCEP, except that the TCEP end of the combined column is toward the valve (which places the carbowax end next to the detector).

Internal Standard:

Original ASTM D 3606-92

2-butanone (methyl ethyl ketone or MEK)

Modified ASTM D 3606-92

2-butanol (sec-butyl alcohol or SBA)

With the given column modifications, the retention time of the original internal standard, MEK, is changed relative to the benzene and is no longer separated from it. The switch to 2-butanol solves this problem, since the SBA has a slightly longer retention time, and is easily distinguished from benzene. The SBA is considered a good choice for an internal standard as it is not normally found in gasoline.

Other parameters:

GC temperature program	Isothermal at 135° C.
Column Head Pressure	65 PSI
Total Flow Rate	26.6 cc/min.

Other parameters associated with the unmodified version of ASTM D 3606-92 are unchanged.

These modifications yield improved separation of the benzene and ethanol peaks in the chromatogram to the point that a fuel containing 0.05% benzene and 10% ethanol will show near baseline resolution between the two peaks. The methanol peak in the chromatogram occurs on the other side of the ethanol peak from the benzene peak and is therefore completely separated from the benzene. Calibrations for this procedure appear linear below 0.05% benzene.

Since there may be modifications to ASTM D 3606-92 other than those described above that result in adequate separation of benzene from ethanol and methanol, EPA would appreciate information on any such modifications and will consider disseminating information on promising approaches through this bulletin board. Comments about such alternative modifications should be directed to:

J. Bruce Kolowich
Branch Chief, FCAB
U.S. EPA/NVFEL
2565 Plymouth Rd.
Ann Arbor, MI 48105

EPA will continue to consider the possibility of approving other benzene measurement methods than ASTM D 3606-92. Such actions would require rulemaking.^(11/21/94)

20. **Question:** Confirm that ASTM method D-1319, Fluorescent Indicator Adsorption (FIA) can be used to determine aromatic and olefin levels until January 1, 1997.

Answer: Yes, the current version, ASTM method D-1319-93, is the regulatory method for olefins and may be used as an alternate for aromatics until January 1, 1997. For aromatics, it must also be correlated to the GC-MS method. Correlation to another laboratory's GC-MS is acceptable. Each D-1319 analysis system must show correlation since the method is operator dependent.^(7/1/94)

21. **Question:** Will EPA cooperate in round robin efforts to provide correlation tests for users of method ASTM D-1319-93 for total aromatics?

Answer: EPA will participate as we are able. Since we are unable to make open commitments of this type, labs should make arrangements with local labs for routine correlation testing.^(7/1/94)

22. **Question:** The final RFG rule specifies the use of EPA's GC-MS method for measuring aromatics, but allows the use of ASTM method D 1319-93 for aromatics until January 1, 1997 for the purpose of meeting the industry requirements under section 80.65(e), provided that it is correlated with EPA's GC-MS method. According to the preamble of the final rule,

This two year transition period should provide sufficient time for industry to purchase equipment and become familiar with the new method. In addition, during this time period, it is anticipated that EPA and industry can discuss any problems that might arise as a result of the new method being promulgated.

Will EPA provide further guidance as to how a correlation with the GC-MS method can be developed at this time? Since EPA's GC-MS method is not fully defined, refiners cannot reasonably develop a correlation with D 1319. Without this correlation, refiners will have no choice but to purchase new equipment, install it, and ensure that it is operating properly. It is highly unlikely that all this can be accomplished by September when some refiners will have to begin RFG production. Given these difficulties, can refiners use the ASTM D 1319 method without correlation?

Answer: Prior to 1993, ASTM 1319 specifically excluded analysis of aromatics in the presence of oxygenates which, of course, is needed for RFG analysis. ASTM 1319 was edited in 1993 to accommodate gasoline with oxygenates; however, EPA still believes this method is inferior for long term use because of the very high reproducibility associated with it and because the procedure is highly operator-dependent. Nevertheless, given the time constraints, EPA has decided to allow this method IF correlated with the EPA method discussed below.

EPA prescribed a method in the RFG regulations referred to as the GC-MS method (gas chromatography/mass spectrometry). This method has much better repeatability and is much more accurate. The method, as described in the regulations is not defined as a step-by-step procedure but, instead, allows flexibility so that companies can tailor the procedures to their lab. In the regulations, specified quality control procedures are detailed so as to assure adequacy of these tailored methods. Correlation with this method by those using ASTM D 1319 will produce results far less operator-dependent.

EPA believes that the regulatory method is sufficiently defined. Furthermore, there is no requirement that correlation with the EPA method be shown internally within a lab and, therefore, correlation can be accomplished with other labs utilizing the EPA method. In fact, EPA's lab has already correlated the EPA method internally with ASTM D 1319. Thus, purchase of new equipment by September is not required. Additionally, EPA believes most labs already have the needed equipment (even if not previously used for this purpose). EPA's lab and other labs with this equipment should supply sufficient correlation opportunities.^(7/1/94)

23. Question: Since a gas chromatograph-mass spectrometer (GC-MS) must be used in the measurement of total aromatic content, including benzene, why is there a separate GC method, ASTM method D-3606-92, for benzene?

Answer: D-3606-92 is specified as the single test method for benzene because many testers do not plan to use GC-MS instruments immediately. The FIA method, an alternative to using a GC-MS, can be used to measure total aromatics until January 1, 1997.^(7/1/94)

24. Question: When a GC-MS is used for analyzing total aromatics, a benzene number will be produced that is different from that produced by method D-3606-92. Which result should be used?

Answer: The result from method D-3606-92 must be used.^(7/1/94)

25. Question: When measuring total aromatics using a GC-MS, can either method A or method B be used, or must both be used?

Answer: Either method A or method B may be used.^(7/1/94)

26. Question: In the GC-MS test for aromatics, why must the calibration curves be forced through the origin? All mass spectrometers will show some noise at a zero concentration level.

Answer: Calibration curves are not required to be forced through the origins. The reference in the regulation is a suggested method.^(7/1/94)

27. Question: Rather than bracketing all components of a sample during the GC-MS analysis in section 80.46(f), can a laboratory use linearity curves for the components?

Answer: Yes. We only require that the calibration standards bracket the concentration range of samples. You may use the linearity curves when analyzing the unknowns.^(7/1/94)

28. Question: Currently, the EPA's GC/MS method for aromatics does not work (poor repeatability precision on successive sample injections.) Should refiners spend \$100,000 each for GC/MS instruments before the EPA method development work is complete? What is the likelihood of the EPA later rejecting the GC/MS method altogether?

Answer: When EPA developed the GC/MS method for the determination of aromatics in

gasoline, samples that were run side by side after the method was completed showed that the precision of GC/MS was considerably better than D-1319. This study was undertaken several years ago, and involved some thirty or so samples, all analyzed without any change to the calibration.

Currently, ASTM is in the round robin phase of development of their version of the GC/MS method. The details of this method have been coordinated with EPA, and we believe they are consistent with the regulatory requirements. Evaluations of the need for the use of secondary and tertiary ions for compound identification during this round robin will provide EPA with some hard evidence for evaluating whether this technique will be permitted. Should secondary and tertiary ion use prove unnecessary, it is possible that instruments costing about \$35K will be suitable.

In any case, as discussed above, the regulations provide an optional alternate method until 1/1/97. After that time, the GC/MS analysis for aromatics will be the only allowed method for this property. Should the ASTM GC-MS method prove satisfactory, EPA will accept its use.^(7/1/94)

29. **Question:** When method A is used to quantify the total aromatic hydrocarbons, should the measurement include only the analytes listed in the method?

Answer: No. All aromatics must be measured. The list is a sample calibration. Uncalibrated peaks are estimated from the nearest calibrated peak with the same mass.^(7/1/94)

30. **Question:** The chromatographic conditions listed in the total aromatic method are loosely defined. Does this mean that the laboratory is free to use any type of column and chromatographic conditions as long as adequate separation and the appropriate QA/QC parameters are met?

Answer: Yes.^(7/1/94)

31. **Question:** Who is the EPA contact person for questions about the procedure for measuring total aromatics with a GC-MS?

Answer: Contact Carl Scarbro (313) 668-4209 or Bruce Kolowich (313) 668-4582.^(7/1/94)

32. **Question:** Does EPA know where the industry can purchase a standard with the list of aromatic analytes shown in method A?

Answer: No.^(7/1/94)

33. **Question:** There are two typing errors in the analyte list in method A. 1-ethyl-2-methylbenzene and 2-ethyl-1,3-dimethylbenzene each appear twice in the list, each with a different retention time. What analytes have been mislabeled?

Answer: Corrections have been made to the table in section 80.46 and published in the technical amendments. The number of compounds has been increased from 32 to 34 and several of the specifications have been changed.^(7/1/94)

34. **Question:** Concerning the EPA method for total aromatics:

a) Does EPA know of a source where all the components on the table in the method can be purchased? We have not been able to find one component, 1,3 diethyl benzene. Please state the manufacturer and the availability of each aromatic component in the method table.

Answer: EPA is using the five level calibration mixture recommended in the ASTM draft method

for aromatics in gasoline. Pre-made standards for that method can be purchased from at least two vendors. The list of compounds used in the ASTM calibration are generally available from at least one vendor. For further information, contact Carl Scarboro at (313) 668-4209.^(10/31/94)

b) If all the aromatic components listed in the method table cannot be found to calibrate the GC-MS, how can someone get an accurate result?

Answer: Precise results are possible by using a multi-level calibration using the compounds listed in either the ASTM procedure and by using: the response factor for Indan for all uncalibrated aromatics with a molecular mass of 117, the response factor for 1,2,3,5-tetramethylbenzene for all uncalibrated aromatics with a molecular mass of 134, and the response factor for pentylbenzene for all uncalibrated aromatics with a molecular mass of 148. There are undoubtedly some errors in the quantification but they are probably less than 1.0 of the total aromatic number. Leaving out the uncalibrated aromatics would underestimate the total aromatic number. We have no evidence that using a response factor of one is as good as using a response factor of a calibrated compound of a similar mass and structure.^(10/31/94)

c) A previous Q&A document stated that one had to determine all aromatic components in a sample by comparing them to the closest calibrated component. How can this be done? Since response factors are so widely different between the different aromatics, how can one get an accurate total aromatic result?

Answer: Using the above calibration standards and a reconstructed chromatogram at the masses 117, 134, and 148 of a gasoline like RFA or other high aromatic gasoline, one can identify uncalibrated aromatics with the above molecular weights, assign a single point through zero calibration curve using the curves generated for one of the above three calibrated compounds and produce an adequate calibration table for this procedure.^(10/31/94)

d) 25 vol% is the lowest concentration for the internal standard recommended by EPA. We believe this is not good analytical practice when the largest component is around 5 vol% and almost all other aromatic components are below 2 vol%. Can a refiner pick a level for the internal standard that fits the level of the aromatic components in their fuel sample? If one cannot pick a level for the internal standard, please indicate why and how to get accurate results.

Answer: The 25 vol% only refers to the volume of a single internal standard in the total internal standard mixture; i.e., a compound is specified as 25 vol% of the internal standards. That translates to a much lower number when it is mixed into a sample or standard. Presently, EPA is using 6.0 wgt% ethylbenzene-d10, 2.5 wgt% benzene-d6, and 2.0 naphthalene-d8. This seems to work well, but methylbenzene may be better quantitated with the addition of methylbenzene-d8. We believe other compounds should work as well.^(10/31/94)

e) The quality control section of the aromatic method states that the samples must be within 2 vol% of the RFG sample at a 95% confidence level. Does this mean that you must run each sample 10 times to get a statistical average and compare it with 10 runs of a previous statistical average so that one can compare it to a 95% confidence level. Please explain the quality control section in more detail. We assume this to mean that any 2 runs of a sample cannot deviate by more than 2 vol% in a fuel sample.

Answer: The 2 vol% is the allowable difference for lab duplicates of a sample. That is, duplicate analyses should not differ by more than 2 vol%. In addition, the analysis of the quality control standard or reference material should also not differ from its nominal concentration by 2 vol%. These are fairly wide targets. EPA is currently seeing a precision of 5.0% of point at the 95% confidence interval. That figure translates in a standard or sample containing 25 vol% aromatics as 1.25 vol% for a 95% confidence

interval and less than 1.9 vol% at a 99% confidence interval.^(10/31/94)

f) The issue of handling aromatics that are found in the sample but are not part of the calibration list must also be resolved. In a previous question and answer session, EPA indicated that other aromatics found in the sample but not part of the system calibration should be approximated by comparing the peak area of the non-calibrated compound to the closest calibrated analyte. This type of calculation is difficult for instrument manufacturers to program and, therefore, places a large burden of manual calculations on the chemist. These approximations can also corrupt the quantitation data. Why build calibration curves for 30 to 40 analytes and follow the QA/QC protocol for verification of these curves only to corrupt the final result by adding in a number of estimated aromatic levels. In other EPA methods such as 524, 525, 8260, and 8270, unknown peaks that are not part of the calibration are tentatively identified by a library search against a commercial library and their approximate concentration calculated by assuming a response factor of 1 for the unknown peak. These compounds are reported as potentially being present in the sample but are not involved in any of the calculations involving calibrated analytes. Software for this sort of a calculation is available from any GC-MS vendor.

If it is necessary to add the unknown aromatics into the total aromatic content, we suggest using the same type of calculation used in the other EPA methods (assume a response factor of 1). This would allow for easy modification of existing software to handle the calculations.

Answer: We believe that by following the steps outlined in paragraphs b and c above, and the ASTM procedure one can produce satisfactory results. The use of a response factor of one may or may not produce similar results. We have no data at this time to make an evaluation.^(10/31/94)

35. **Question:** The rules provide that the ASTM method D-1319-93 may be used for Aromatics until January 1, 1997, and that if used, the method must be correlated with the GC-MS test method. Is the correlation factor between the D-1319 test method for Aromatics and the GC-MS test method for Aromatics intended to be used for purposes of determining compliance?

Answer: Section 80.46(f)(3) states as follows:

(3) Alternative test method. (i) Prior to January 1, 1997, any refiner or importer may determine aromatics content using ASTM standard method D-1319-93, entitled "Standard Test Method for Hydrocarbon Types in Liquid Petroleum Products by Fluorescent Indicator Adsorption," for purposes of meeting any testing requirement involving aromatics content; provided that

(ii) The refiner or importer test result is correlated with the method specified in paragraph (f)(1) of this section.

Thus, when ASTM method D-1319-93 is used to determine aromatics content, the result obtained must be correlated with the gas chromatography method specified in § 80.46(f)(1) in order to reflect the result which would have been obtained had the analysis been conducted using the gas chromatography method, and this adjusted result must be used for purposes of reporting and determining compliance with regulatory requirements. ^(8/29/95)

36. **Question:** Why is the Digital Herzog excluded as a compliance test acceptable for RVP measurement under section 80.46?

Answer: Method 3 was selected for RVP measurement because it has been shown to have much greater precision than the Digital Herzog.^(7/1/94)

37. **Question:** If the Method 3 RVP analyzer fails, can a gauge RVP reading be used to make a shipment and an RVP determined by an outside laboratory later?

Answer: No.(7/1/94)

38. **Question:** Regarding distillation testing, in the preamble and in § 8046(d)(2), it is noted that the repeatability and reproducibility figures in Table 9 of ASTM D-86-90 are incorrect and cannot be used. According to ASTM, Table 9 in ASTM D-86-93 contains the correct figures. Please confirm that it is acceptable to use ASTM D-86-93 as the regulatory method or to use ASTM D-86-90 and substitute Table 9 from ASTM D- 86-93.

Answer: Refiners and importers must use D-86-90, except that Table 9 from the 1990 version of that method may not be used. Parties may use Table 9, the reproducibility values, from the 1993 version of this method, ASTM D-86-93.(7/1/94)

39. **Question:** In general, how are the properties determined for blendstocks that fall outside the scope of the regulatory methods?

Answer: Some gasoline blendstocks have properties that cause them to fall outside the scope of the regulatory methods. If properties need to be obtained for these blendstocks, they must be determined by a different route, that being an interpolation based on the measured properties of the gasoline before and after the blendstock is added. For example, to determine the RVP of a blendstock, an appropriate equation would be:

$$\begin{array}{rcll} 7.60(100,000) + r(5,000) & = & 7.30(105,000) & \text{(I)} \\ 760,000 + r(5,000) & = & 766,500 & \text{(II)} \\ r(5,000) & = & 6,500 & \text{(III)} \\ r & = & 1.30 & \text{(IV)} \end{array}$$

In this example, where the initial fuel sample was 100,000 barrels with an RVP of 7.60, the blendstock volume was 5,000 barrels, and the RVP of the final blend was 7.30, the calculated RVP of the blendstock would be 1.30.(7/1/94)

VI. REQUIREMENTS

A. RFG GENERAL REQUIREMENTS

1. **Question:** Must reformulated gasoline be sold only in those areas designated as reformulated gasoline areas by the EPA? Can a refiner produce and designate certified reformulated gasoline for distribution and sale even though there may be no immediate reformulated gasoline market for that product except as a replacement for conventional gasoline? Are the volume and fuel parameters of the gasoline to be incorporated into the anti-dumping compliance calculations?

Answer: Reformulated gasoline may be sold in areas not designated as RFG areas. However, if the reformulated gasoline is mixed with conventional gasoline, it may not be sold as reformulated gasoline. Certified reformulated gasoline used in a non-RFG area should not be incorporated into the anti-dumping compliance calculations and should be used in the RFG compliance calculations.(7/1/94)

2. **Question:** To blend gasoline from various components, must we be registered as a refiner?

Answer: Yes. Registration is required for any refiner, importer, and oxygenate blender that produces any reformulated gasoline, and any refiner and importer of conventional gasoline. (§§ 80.76(a) and 80.103.) Section 80.65(d)(3) requires each batch of reformulated or conventional gasoline or RBOB produced or imported at each refinery or import facility, or each batch of blendstock produced and sold or transferred if blendstock accounting is required under § 80.101(d)(1)(ii), to be assigned a "batch number" which includes (among other information) the refiner, importer, or oxygenate blender registration number and the EPA assigned facility registration number.(7/1/94)

3. **Question:** Averaged reformulated gasoline produced in 1994 is to be included in 1995 compliance determinations. However, recordkeeping and reporting for conventional gasoline does not begin until January 1, 1995. Please confirm this understanding.

Answer: Your understanding is correct.(7/1/94)

4. **Question:** Most pipeline companies conduct an internal pipe corrosion control program pursuant to DOT regulations. These programs generally involve the injection of corrosion inhibitor additives into the petroleum products (gasoline, distillate, etc.) being transported by the pipeline company. Does this injection of corrosion inhibitors result in the pipeline company coming under the reformulated gasoline regulations' definition of a (blender) refiner?

Answer: No. EPA does not view the blending of de minimis amounts of additives, such as detergents or corrosion prevention additives, into finished RFG to be the "production" of gasoline, and does not believe such blending will cause resulting gasoline to fail to meet RFG standards.(7/1/94)

5. **Question:** Terminal blending of mid-grade gasoline (using a premium and regular mix) is common practice in the industry. We interpret that terminals engaging in this practice are not considered refiners under the regulations based on the comment "that the EPA believes that multi-grade mixing of RFG will result in gasoline that meets all reformulated standards." (Response to comments, fungibility section). We request clarification.

Answer: Parties who only mix different grades of certified reformulated gasoline will not be considered refiners or blenders under the reformulated gasoline regulations. Similarly, parties who mix different grades of conventional gasoline which were produced in compliance with the anti-dumping regulations will not be considered refiners under the regulations.(7/1/94)

6. **Question:** Can a producer manufacturing only conventional gasoline purchase RFG, blend it with the conventional gasoline at the refinery, and use the combined blend volume and properties as part of the refinery's compliance calculations starting January 1, 1995?

Answer: Combining finished RFG and finished conventional gasoline is not an act of "producing or importing" under the RFG/anti-dumping regulations. Consequently, the resulting product would not be included in the refinery's compliance calculations. Under § 80.78(a)(10), however, such product may not be sold as RFG. Under § 80.78(a)(5), finished RFG may not be combined with a non-oxygenate blendstock unless the blendstock meets all RFG standards without regard to the properties of the RFG to which the blendstock is added. However, a downstream party may downgrade RFG to conventional gasoline and combine it with blendstocks. In this case, the blendstocks would be included in the refinery's anti-dumping compliance calculations without regard to the volume and properties of the downgraded RFG. (4/18/95)

7. **Question:** If a refiner produces RBOB and sends it down a proprietary line to his own terminal where it is blended with ethanol, is the refiner required to register as an oxygenate blender for this terminal oxygenate blending operation?

Answer: Yes.(7/1/94)

8. **Question:** Who is the oxygenate blender in a situation where a petroleum marketer who holds title to the gasoline engages a common carrier tank truck company to transport the gasoline, and, upon the completion of loading the truck, but before leaving the marketer's facility, oxygenate owned by the marketer is added to the gasoline per instructions by the marketer? Who is the oxygenate blender in a similar situation, except that the blending operation is performed by the carrier at a site removed from the marketer's facility and/or operational control?

Answer: In both scenarios, since the marketer owns the gasoline and the carrier owns the oxygenate blending facility (i.e., the truck in which blending takes place) and executes the blending operation, both parties fit the definition of an oxygenate blender, as found in § 80.2 of the regulations. Both parties, therefore, are independently responsible for the completion of all oxy blending requirements, such as meeting standards, sampling and testing, recordkeeping and reporting. However, these oxy blending requirements must be met only once for any oxy blending operation. As a result, if the requirements are properly accomplished by one oxy blender for a particular blending operation, EPA will consider the requirement to have been accomplished by each person who meets the definition of oxy blender for that operation. Normally, the party that holds title to the fuel would be responsible for reporting the batch to EPA. (7/1/94)

9. **Question:** Who accounts for blending operations that take place in leased storage facilities?

Answer: Under the regulations, a refiner is any person who owns, leases, operates, controls, or supervises a refinery. As indicated above, an oxygenate blender is any person who owns, leases, operates, controls, or supervises an oxygenate blending facility, or who owns or controls the blendstock or gasoline used or the gasoline produced at an oxygenate blending facility. Therefore, there are situations where more than one person meets the definition of refiner or oxygenate blender (e.g., the person who owns the facility, the person who directs the blending operation, and the person who owns the gasoline). In a situation where a refiner leases storage facilities to another, both parties would be considered refiners under the regulations and would be accountable for blending operations. The parties may decide among themselves who registers and reports, however, all are liable in the event there is a violation. While all parties must meet all of the elements of their defense, if a violation is discovered, the regulated parties may decide who performs quality assurance tasks.(7/1/94)

10. **Question:** Public terminals that "refine" and "blend" RFG, RBOB or conventional gasoline as defined in the RFG rules at 40 CFR Part 80, and obtain agreements from their customers to comply with the refiner/blender requirements of the rule, will not separately need to register with EPA. It is my understanding that terminals in such situations must not register. Is my understanding correct?

Answer: No. In a situation in which more than one party fits the definition of a refiner or oxygenate blender under the regulations, each such party is subject to the requirements under the regulations, including registration requirements. Where, for a particular operation, more than one party fits the definition of refiner or oxygenate blender, the parties may agree that one party will register. There is no prohibition against the terminal registering in this situation.(8/29/94)

11. **Question:** Can a party downstream of the refiner certify a batch of conventional gasoline as RFG if the required RFG standards are met after testing? If not, can this batch of conventional gasoline which meets RFG standards be sold to a refiner as a GTAB?

Answer: No. Only refiners and importers may designate gasoline as RFG. A downstream party also may not sell conventional gasoline as gasoline-treated-as-blendstock (GTAB) even if it meets RFG standards. The concept of GTAB applies only in the limited situation where the product is imported, is

used by the company that imported it for blending gasoline in a refinery operated by the company, and is included in the company's refinery compliance calculations. Previously accounted for RFG or conventional gasoline may not be treated in this manner. For further discussion of GTAB, see the February 6, 1995 Question and Answer document. (4/18/95)

12. Question: In the case of a refinery which is sold during the course of an annual averaging period (i.e., other than at midnight on December 31), how does EPA view the responsibilities of the seller refiner and the buyer refiner with regard to meeting the RFG and anti-dumping standards for the gasoline produced at that refinery?

Answer: Under § 80.65(c), each refiner of RFG is responsible for meeting the RFG standards for each batch of RFG produced by that refiner, and under § 80.67(b) in the case of RFG the refiner designates for compliance on average the refiner must meet the applicable RFG standards separately for the RFG produced by that refiner at each refinery over each calendar year averaging period. Under § 80.101 each refiner of conventional gasoline is responsible for meeting the anti-dumping standards for all conventional gasoline produced by that refiner at each refinery over each calendar year averaging period. In addition, each refiner is responsible for meeting all other refiner requirements for the gasoline produced at each refinery (sampling and testing, record keeping, reporting, etc.) and under § 80.65(h) each refiner is responsible for the completion of a compliance audit for the gasoline produced at each refinery during each calendar year.

In the case of a refinery that is sold during an averaging period, therefore, both the seller refiner and the buyer refiner would independently be responsible for meeting the applicable RFG and anti-dumping standards for the RFG and conventional gasoline produced at that refinery during the period that party owns the refinery, and for meeting all other refiner requirements for the gasoline produced. For example, if a refinery is sold on April 1, 1996, the seller refiner would be responsible for meeting the RFG and anti-dumping standards for the RFG and conventional gasoline produced at the refinery during the period January 1, 1996 through March 31, 1996, and the buyer refiner would be responsible for meeting the RFG and anti-dumping standards for the RFG and conventional gasoline produced at the refinery during the period April 1, 1996 through December 31, 1996. Each refiner also would be responsible for meeting all other refiner requirements for their periods of ownership, including sampling and testing, independent sampling and testing, record keeping, reporting, and attest engagements. This responsibility to meet RFG standards would apply regardless of whether the RFG produced by one refiner or the other is designated for meeting standards on average or on a per-gallon basis. Moreover, each refiner could designate the RFG produced during the period that party owns the refinery as meeting the RFG standards on average or on a per-gallon basis, and the buyer refiner could make an aggregation election for the refinery under § 80.101(h).

For those standards and requirements that rely on the refinery's 1990 baseline volume, such as the compliance baseline for conventional gasoline under § 80.101(f)(4), the refinery's baseline volume would be allocated to the relative periods of time the seller refiner and the buyer refiner own the refinery. For example, if a refinery with a baseline volume of 500 million gallons is sold on April 1, the seller refiner would receive a baseline volume of 123.29 million gallons ($\{90/365\} * 500$ million), and the buyer refiner of 376.71 million gallons ($\{275/365\} * 500$ million).

EPA recognizes there are seasonal differences in some RFG and anti-dumping standards calculations (e.g., the different toxics equations for summer versus winter) which, depending upon when a refinery is sold, could have an impact on either the seller or buyer refiner meeting these standards when met on average. As a result, in a case where a refinery is sold during an averaging period, and where either the seller or buyer refiner fails to meet an RFG or conventional gasoline standard which is met on average, EPA will evaluate the gasoline produced at the refinery by both the seller and the buyer refiner together. If this evaluation shows that the applicable RFG and conventional gasoline average standards

have been met for all the gasoline produced at the refinery during the averaging period, EPA will treat both refiners as having met these standards, regardless of the separate compliance calculations of these parties. This collective evaluation would not be appropriate and would not be conducted, however, in a case where the standard in question is one that may be met by aggregating refineries (i.e., all anti-dumping standards, and in the case of RFG under the simple model, sulfur, T-90 and olefins) and where the refiner who failed to meet the standard has elected to aggregate the refinery in question with other refineries.

EPA believes that the considerations discussed in this answer should be taken into account when a refiner enters into a transaction to sell or buy a refinery, particularly to the extent a refiner would intend to rely on the collective evaluation approach. For example, a refiner who sells a refinery in April and who is counting on summer gasoline to meet RFG or conventional gasoline toxics standards should ensure that the buyer refiner will produce gasoline of sufficient quality that the toxics standards are met for the refinery overall for the calendar year averaging period. (8/29/95)

13. Question: What constitutes a batch of reformulated gasoline? What method should be used by refiners, importers and oxygenate blenders for determining the volume of a batch of reformulated gasoline? What method should be used by independent laboratories? If a refiner is to report the tank volume at the time that a sample is collected, this may result in double-counting because the tank would not be emptied before blendstocks are added to produce the next batch. For example, suppose the volume in a tank is 100,000 barrels for batch 1, which is sampled and tested. Subsequently, there are two shipments from this tank, a 50,000 barrel shipment and a 20,000 barrel shipment, leaving 30,000 barrels in the tank. The tank is then blended up to 90,000 barrels for batch 2, which is sampled and tested, with subsequent shipments of 28,000 barrels and 44,000 barrels. Should the reported volume for batch 1 be 100,000 barrels or 70,000 barrels? Should the reported volume for batch 2 be 90,000 barrels or 72,000 barrels?

Answer: Section 80.2(gg) defines a "batch of reformulated gasoline" as "a quantity of reformulated gasoline which is homogeneous with regard to those properties which are specified for reformulated gasoline certification." The reported volume for the batch should be the volume of reformulated gasoline shipped out of the refinery or import facility after the gasoline has been blended and sampled. In the example above, the volume for batch 1 would be 70,000 (50,000 + 20,000) barrels and the volume for batch 2 would be 72,000 (28,000 + 44,000) barrels. For a discussion of the method for determining batch size by independent laboratories, see Independent Sampling/Testing Section, Question 19. (7/1/94)

14. Question: A refinery has two product tanks in series; a 10,000 gallon tank in which blendstocks are combined to produce gasoline (a blend tank), followed by a 50,000 gallon tank which feeds directly to the rack. Customers pull product from the rack. There are no blend streams going into the 50,000 gallon tank. Can we just certify the 10,000 gallon tank for all the properties for a specific volume (batch), without actually sampling any product from the larger tank?

Answer: The refiner should certify the properties of each batch produced in the 10,000 gallon blend tank based on a sample of gasoline collected after all the blending components have been added and mixed. The volume of each batch would be the volume of gasoline that is transferred from the blend tank up to the point when additional blendstocks are added to the blend tank to begin the subsequent batch. No certification sampling and testing would be required of gasoline from the 50,000 gallon tank. (8/29/94)

15. Question: What does EPA consider "shipment volume" for the volume reported to the EPA? Would shipment be considered the point at which the product leaves the blend tank where it is certified and is fungibly mixed in sales tanks; could it be the point where the product is placed on a pipeline, barge or sold

over the rack; could it be the point of tender as defined in the audit requirements; or at the point where a transfer of custody or ownership took place?

Answer: For purposes of reporting, under § 80.75(a)(2)(iii), the "volume of the batch" is the volume that leaves the blend tank where it is certified and is subsequently fungibly mixed somewhere else.^(9/26/94)

16. **Question:** During tank transfers and other operations necessary to accommodate pipeline schedules, barrels of untested, uncertified reformulated gasoline may be mixed with barrels of previously certified product that have been included in the refiner's averaging calculations. If the total volume of mixed product is tested, certified, and booked, then double-accounting of the previously certified barrels will result. Can a procedure for un-booking of the quality and quantity of the previously certified product be used to avoid this double accounting problem?

Answer: If, as discussed above, batch volumes are reported based on shipments out of the refinery or import facility (and averaging calculations are based on these volumes), a volume of previously tested reformulated gasoline remaining in a tank, which is then mixed with untested gasoline, would be included in the volume reported (i.e., the next shipment out of the refinery from that tank) and double counting will not occur.^(7/1/94)

17. **Question:** Our practice is for each tank to be a batch and we test that tank once even though it may be used to supply several distribution systems. If several tanks are required to make up a pipeline tender, each tank is tested separately and the separate certificates of analysis provided to the pipeline. Will this practice still be acceptable?

Answer: Yes. Moreover, EPA believes that each separate tank of produced gasoline must be a separate batch, and that gasoline produced and contained in more than one tank may not be treated as a single batch.^(7/1/94)

18. **Question:** A blender/importer unloads 200,000 barrels of imported blendstock into a tank at a registered terminal and blends the imported blendstock into reformulated gasoline. After the finished gasoline is certified as RFG, 150,000 barrels of the product is shipped out, and the next shipment of imported blendstock arrives. Can the imported blendstock be unloaded onto the remaining 50,000 barrels of certified RFG and reblended? (This seems to be defined as a prohibited activity if the subsequent blend is "dirtier," even though it meets RFG specifications.)

Answer: The shipped batch of RFG should be reported as 150,000 barrels of RFG. The 50,000 barrels which are left are not considered to be part of the RFG batch for reporting purposes, because only the shipped volume is reported. Therefore, imported blendstocks can be unloaded onto these 50,000 barrels and reblended to produce another batch of RFG.^(7/1/94)

19. **Question:** Must the refiner track the barrels and qualities of each batch of gasoline beyond the tank in which it was certified?

Answer: No, but the batch volume is not determined by tank volume; rather, it is determined based on shipment volume.^(7/1/94)

20. **Question:** If, due to piping constraints, a refiner must put a purchased or inter-refinery transferred batch of finished gasoline through the refinery blendstock system, but does so without the batch losing integrity, must the refiner include the batch in his compliance calculations?

Answer: No. As per § 80.65(i) of the regulations, any refiner, importer, or oxygenate blender

shall exclude from all compliance calculations, the volume and properties of any RFG that is produced at another refinery or oxygenate blending facility, or imported by another refiner in order to avoid double-counting.^(7/1/94)

21. **Question:** Section 80.65(e) lists properties that product must be tested for before shipment. Some of these do not have standards in the simple model. Is it necessary to test, and ultimately report, those parameters not required for the simple model? Is reporting of all tests required or just those required for the simple model?

Answer: Refiners and importers must test for each parameter listed in § 80.65(e) for RFG certified under the simple model with the exception of T-50 and, in the case of non-VOC controlled RFG, RVP. However, in the case of simple model RFG, refiners must only have received test results prior to shipment for oxygen and benzene, and RVP in the case of VOC-controlled RFG.^(7/1/94)

22. **Question:** When certifying a batch of gasoline, which property data should be used (analyzer, lab, calculated, etc.)?

Answer: When certifying a batch of gasoline, a sample that is representative of the entire batch must be taken and tested according to the regulatory test methods specified in § 80.46 of the regulations. For information on independent sampling and testing, please see Independent Sampling and Testing Section. In addition, for information on what property data to use when certifying RFG when using a computer-controlled in-line blending operation that has been exempted from the independent sampling and testing requirements, see In-Line Blending Section.^(7/1/94)

23. **Question:** What are the sampling and testing requirements for terminal blenders (barges, trucks and pipelines)?

Answer: If the facility's activities fit the definition of a refiner, it would have to sample and test each batch of gasoline as required under § 80.65(e). If its activities fit the definition of an oxygenate blender, it would have to fulfill the appropriate testing requirements under § 80.69.^(7/1/94)

24. **Question:** If operations necessitate a transfer between two tanks which are both certified reformulated gasoline, does the receiving tank have to be retested and certified?

Answer: Assuming that the receiving tank contains certified RFG, such a transfer would be permissible without retesting and recertification.^(7/1/94)

25. **Question:** Should the first sentence of § 80.65(e)(2)(ii)(B), which makes reference only to refiners, also make reference to importers?

Answer: The first sentence of § 80.65(e)(2)(ii)(B) should read as follows: "The refiner or importer shall have the gasoline analyzed for the property at one additional independent laboratory." Importer language inadvertently was omitted from this sentence when promulgated as evidenced by the use of "refiner or importer" language in the second sentence, and will be corrected in a future rulemaking.^(4/18/95)

26. **Question:** Please clarify how the facility aggregation option would work. Would the facility aggregation apply only to simple model RFG sulfur, T-90 and olefins compliance?

Answer: A refiner may aggregate its refineries for anti-dumping compliance purposes under § 80.101(h). This aggregation option must be exercised for the 1995 averaging period, and may not thereafter be changed. In addition, under § 80.41(i) the refiner must use the same model (simple or complex) for the RFG and conventional gasoline produced at any refinery, and the same model must be

used at all aggregated refineries. Moreover, under § 80.41(i) the RFG standards for sulfur, T-90, and olefins, but no other RFG standards, are met in relation to refinery baselines. Therefore, in the case of a refiner who elects to aggregate refineries, who produces RFG, and who uses the simple model, the RFG standards for sulfur, T-90, and olefins must be met for all RFG produced at the refiner's aggregated refineries, and all other RFG standards must be met separately for each refinery, regardless of aggregation.^(7/1/94)

27. Question: We are concerned that our terminal which will contain RFG beginning December 1 will suffer a loss of business during that month, because distributors will obtain less expensive conventional gasoline for delivery to retail outlets located in the RFG covered area which is our normal market. Would this approach by distributors be appropriate? If a terminal stocks conventional gasoline for use outside RFG covered areas after December 1, 1994, would the terminal be liable if distributors deliver this gasoline to retail outlets in an RFG covered area during December, 1994?

Answer: Section 80.65(a) requires in part that beginning December 1, 1994 all gasoline transported, stored, or sold at any location other than at the retail level must meet the RFG requirements. Section 80.65(b) requires that gasoline sold or dispensed in a covered area must be certified as reformulated. These requirements thus apply to any terminal or distributor that supplies gasoline to an RFG covered area beginning December 1, 1994. Any distributor who delivers conventional gasoline to a retail outlet located in an RFG covered area beginning December 1, 1994 will be in violation of the §§ 80.65(a) and (b) requirements. A terminal operator dispensing conventional gasoline to such a distributor also will be in violation of these sections if the operator knows or reasonably should know the distributor will deliver the gasoline to a retail outlet located in an RFG covered area beginning December 1, 1994. Question VII-B-10 from the July 1, 1994 Question and Answer document discusses this type of scenario and the steps the terminal should take.

EPA intends to enforce these requirements through audits of the delivery records of terminals and distributors, and through inspections of gasoline quality at retail stations in RFG covered areas beginning January 1, 1995.

As a result, a terminal that meets the RFG requirements beginning on December 1, 1994, as required by §§ 80.65(a) and (b), will not be at risk that any other terminal may legally supply conventional gasoline to that terminal's customers for delivery into an RFG covered area during or after December, 1994.^(9/26/94)

28. Question: Can bulk terminals located in covered areas receive conventional gasoline that is intended to be distributed to non-RFG areas?

Answer: Distributors, including bulk plants, located in covered areas may receive and distribute conventional gasoline to non-RFG areas, assuming all of the requirements of the regulations are met, including segregation of conventional gasoline from RFG, and the product transfer documentation statement at § 80.106(a)(1)(vii) which identifies the product as not meeting the requirements for RFG.^(12/5/94)

29. Question: What are the compliance requirements for pipelines?

Answer: Pipelines, unless they engage in blending gasoline, generally fit the definition of carrier under the regulations. As such, pipelines must ensure that the quality of the gasoline is not changed and provide product transfer documents. In order to establish a defense to a presumptive violation, pipelines should also conduct quality control programs. For further information on pipeline compliance requirements, see Question 29 of this section.^(7/1/94)

30. **Question:** Are there any circumstances where a pipeline could be considered an oxygenate blender?

Answer: If a pipeline otherwise meets the definition of oxygenate blender (i.e., any person who owns, leases, operates, controls, or supervises an oxygenate blending facility, or who owns or controls the blendstock or gasoline used or the gasoline produced at an oxygenate blending facility), then it will be considered an oxygenate blender. This can occur if the pipeline operates a terminal where oxy blending is occurring.^(7/1/94)

31. **Question:** If a pipeline must be classified as a refiner, how would that be handled administratively by EPA? Since pipelines don't own the product, would pipeline have to become buyers and sellers for regulatory purposes?

Answer: Refiners must be registered with EPA. The pipeline need not be an owner of the gasoline to be a refiner.^(7/1/94)

32. **Question:** What are the requirements for retailers in the covered areas?

Answer: Retailers are subject to certain controls and prohibitions on reformulated gasoline as provided in § 80.78 of the regulations, such as meeting downstream standards, not selling conventional gasoline in RFG areas, selling VOC-controlled gasoline for the proper VOC Control Region from June 1 through September 15, not adding any oxygenate to reformulated gasoline unless it is designated at OPRG, not combining any VOC-controlled reformulated gasoline that is produced using ethanol with any VOC-controlled reformulated gasoline that is produced using any other oxygenate from January 1 through September 15, or combining reformulated gasoline with conventional gasoline and selling the resulting mixture as reformulated gasoline. Retailers may be held liable for violations in accordance with the provisions of § 80.79.^(7/1/94)

33. **Question:** If RFG is sold outside of an RFG area, are there any labeling changes, physically on the pump, that will be required?

Answer: There are no pump labeling requirements under the RFG program, either inside or outside RFG covered areas. However, a mixture of conventional gasoline and RFG may not be sold as reformulated gasoline. Parties, therefore, should only sell gasoline as RFG if it has been segregated from conventional gasoline.^(10/3/94)

34. **Question:** Can conventional gasoline be used for off-road applications in an RFG area?

Answer: No. Only reformulated gasoline may be sold or supplied in a covered area.^(7/1/94)

35. **Question:** Are any categories of gasoline users in the RFG covered areas exempt from the requirement to use RFG instead of conventional gasoline?

Answer: Section 211(k)(5) of the Clean Air Act describes the scope of the requirement to use RFG in the RFG covered areas:

(5) PROHIBITION. -- Effective beginning January 1, 1995, each of the following shall be a violation of this section:

(A) The sale or dispensing by any person of conventional gasoline to ultimate consumers in any covered area.

....

This statutory prohibition on the sale or dispensing of conventional gasoline in RFG covered areas is not restricted to gasoline used to fuel motor vehicles, but rather applies to all gasoline sold or dispensed within an RFG covered area to any consumer, regardless of the use. The prohibition, therefore, would include gasoline sold or dispensed for use in motor vehicles, boats, construction equipment, recreational vehicles, lawn and garden equipment, etc.

As a matter of enforcement discretion, however, EPA will not enforce the requirement to sell or dispense RFG in the case of two categories of gasoline: aviation gasoline sold or dispensed for use in aircraft, including gasoline that has properties identical to motor vehicle gasoline that is sold or dispensed solely for use in aircraft; and racing gasoline sold or dispensed for use in racing vehicles during a sanctioned racing event. These exceptions would not apply if the aviation gasoline or racing gasoline is used other than in an aircraft, or in a racing vehicle in conjunction with a sanctioned racing event.

In the case of both aviation gasoline and racing gasoline, the gasoline must be clearly designated as such, and any person selling or dispensing these categories of gasoline must take appropriate steps to ensure the gasoline is used only in the limited circumstances described. In addition, EPA has strict guidelines as to what constitutes a racing vehicle, and the exception for racing gasoline applies only for gasoline used in such a vehicle. For further information on what constitutes a racing vehicle, contact EPA's Manufacturers Operations Division at (202) 233-9250.

The rationale for the exception for aviation gasoline used to fuel aircraft is based on safety considerations. Aviation gasoline must satisfy performance criteria that are relevant to the safe operation of aircraft, and this safety consideration outweighs the limited adverse environmental effect of conventional gasoline used in this manner. In addition, aircraft emissions normally would not be confined to the covered area where the aircraft is fueled, and could occur in significant part outside any RFG covered area. The rationale for the exception for racing gasoline is based on the special performance requirements for true race vehicles and the limited volumes of gasoline involved.^(1/17/95)

36. Question: Is it possible to get an exemption to use conventional gasoline in an RFG covered area for testing purposes?

Answer: The RFG regulations do not provide an exemption from the RFG requirements for testing purposes. However, EPA would consider allowing the use of conventional gasoline in an RFG covered area for purposes of a testing program if sufficient information is provided to EPA to verify the necessity of using non-RFG. Parties interested in pursuing such an allowance should contact Marilyn Bennett at (202) 233-9006.^(1/30/95)

37. Question: In what areas outside the continental U.S. must refiners and importers comply with the RFG and anti-dumping requirements?

Answer: Under § 302(d) of the CAA, the term "State" means "a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, and American Samoa and includes the Commonwealth of the Northern Mariana Islands." Sections 211(k)(5) and (6) of the CAA impose the RFG requirements in all "covered areas" and "opt-in" areas within a State. Under § 211(k)(8) of the CAA, the anti-dumping requirements apply to gasoline "sold or introduced into commerce," which, under § 216(6), means commerce between any place in any State and any place outside thereof, and commerce wholly within the District of Columbia. As a result, refiners that operate refineries in any of the areas specified under § 302(d) of the CAA, or importers who import gasoline into any of these areas, must meet the RFG and anti-dumping requirements for this gasoline.

Section 325(a)(1) of the CAA provides that, upon petition by the Governor of Guam, American Samoa, the Virgin Islands, or the Commonwealth of the Northern Mariana Islands, the Administrator of EPA may exempt any person or source (or class of persons or sources) in such territory from these requirements if the Administrator finds that compliance with such requirements is not feasible or is unreasonable due to unique geographical, meteorological, or economic factors of such territory, or such other local factors as the Administrator deems significant.^(11/21/94)

38. Question: Is a company considered an importer under the RFG regulations if it has a refinery located in the Virgin Islands or Guam and transports gasoline produced at this refinery to a State?

Answer: Section 80.2(r) defines "importer" as "a person who imports gasoline or gasoline blending stocks or components from a foreign country into the United States...." Under § 302(d), Puerto Rico, Guam, American Samoa, the Virgin Islands and the Northern Mariana Islands are included in the definition of "State" for purposes of compliance with the RFG and anti-dumping regulations. A company that produces gasoline at a refinery located in Puerto Rico, Guam, American Samoa, the Virgin Islands or the Northern Mariana Islands, therefore, is a refiner, rather than an importer, of that gasoline. In addition, gasoline transported into Puerto Rico, Guam, American Samoa, the Virgin Islands or the Northern Mariana Islands from outside any "State" would be imported gasoline that must be included in the importer's RFG or anti-dumping compliance calculations.^(1/9/95)

39. Question: Can a company ship, sell, or offer for sale conventional gasoline to a retailer or wholesaler operating on an Indian Reservation in an ozone nonattainment area which has been opted-in by the state? Can a company sell conventional gasoline to a wholesaler who supplies a retailer or wholesaler who is operating on an Indian Reservation in an ozone nonattainment area which has been opted-in by the state?

Answer: The Clean Air Act (CAA) specifies the areas that must be subject to the reformulated gasoline (RFG) program. These "covered areas" are: (1) the nine major metropolitan areas with the worst (highest) ozone levels; and (2) any area reclassified as a severe ozone nonattainment area (effective one year after reclassification). See CAA section 211(k)(10)(D). This statutorily-prescribed component of the RFG program applies with equal force to all covered areas, including all affected State and Tribal areas.

The CAA also allows the "Governor of a State" to voluntarily "opt-in" and subject any marginal, moderate, serious or severe ozone nonattainment area in the State to the RFG program. See CAA section 211(k)(6). As explained in the discussion below, a Governor's application to opt-in to the RFG program includes all affected ozone nonattainment areas within the State's jurisdiction but does not include any lands within the jurisdiction of a Federally recognized Indian tribe.

The term "State" is specifically defined in section 302(d) of the CAA and does not include Indian Tribes. Rather, the term "Indian tribe" is independently defined in section 302(r) to include any Federally recognized "tribe, band nation, or other organized group or community, including any Alaska Native village."¹ Compare also CAA § 302(b)(1)-(4) with CAA § 302(b)(5).

Several other provisions of the CAA evince congressional intent not to treat Federally recognized Indian Tribes as subdivisions of States under the CAA. For example, section 164(c) provides that "[l]ands within the exterior boundaries of reservations of federally recognized Indian tribes may be redesignated" for purposes of the Prevention of Significant Deterioration of Air Quality program "only by the appropriate Indian governing body." See also CAA § 164(e). Section 301(d)(2) of the CAA authorizes EPA to issue

¹ The Department of the Interior periodically publishes a list of Federally recognized Tribes. See 58 FR 54364 (Oct. 21, 1993).

regulations specifying those provisions of the CAA for which it is appropriate "to treat Indian Tribes as States."² Hence, section 301(d) of the CAA provides for treating Tribes in the same manner as States, not as governmental subdivisions of States. EPA has issued proposed rules that would treat Tribes in the same manner as States for virtually all CAA programs. See 59 FR 43956 (Aug. 25, 1994).

In addition, Federal Indian law and policy direct EPA to treat Tribes as sovereign governments not as subdivisions of States. Settled principles of Indian law provide that "States are generally precluded from exercising jurisdiction over Indians in Indian country unless Congress has clearly expressed an intention to permit it." Washington Department of Ecology, 752 F.2d at 1469-1479 (citations omitted); see also United States v. Mazurie, 419 U.S. 544, 556 (1975) (the inherent sovereign authority of Indian Tribes extends "over both their members and their territory"); Montana v. United States, 450 U.S. 544, 556-557 (1981) (Tribes generally have extensive authority to regulate activities on lands that are held by the United States in trust for the Tribe); Montana, 450 U.S. at 566 (a Tribe "may...retain inherent power to exercise civil authority over the conduct of non-Indians on fee lands within its reservation when that conduct threatens or has some direct effect on the...health or welfare of the tribe").

Federal and Agency Tribal policy also direct EPA to treat Tribes as sovereign governments. On January 24, 1983, the President issued a Federal Indian Policy stressing two related themes: (1) that the Federal government will pursue the principle of Indian "self-government" and (2) that it will work directly with Tribal governments on a "government-to-government" basis. An April 29, 1994 Presidential Memorandum reiterated that the rights of sovereign Tribal governments must be fully respected. 59 FR 22,951 (May 4, 1994).

EPA's Tribal policies commit to certain principles, including the following:

EPA recognizes Tribal Governments as sovereign entities with primary authority and responsibility for the reservation populace. Accordingly, EPA will work directly with Tribal Governments as the independent authority for reservation affairs, and not as the political subdivisions of States or other governmental units.

* * * * *

In keeping with the principal of Indian self-government, the Agency will view Tribal Governments as the appropriate non-Federal parties for making decisions and carrying out

² Further, section 301(d)(2)(B) addresses the potential jurisdictional scope of the resulting Tribal CAA program submittals, authorizing EPA to treat Tribes in the same manner as States for "the management and protection of air resources within the exterior boundaries of the reservation or other areas within the tribe's jurisdiction." EPA has proposed to interpret section 301(d) and other provisions of the CAA as granting Tribes--approved by EPA to administer CAA programs in the same manner as States--authority over all air resources within the exterior boundaries of a reservation for such programs. EPA has explained that "[t]his grant of authority by Congress would enable such Tribes to address conduct on all lands, including non-Indian owned fee lands, within the exterior boundaries of a reservation." EPA also proposed to interpret the language in section 301(d)(2)(B) providing for Tribal management and protection of air resources in "other areas within the Tribe's jurisdiction" to authorize potential Tribal jurisdiction under the CAA over areas that lie outside the exterior boundaries of a reservation, upon a fact-based showing of a Tribe's inherent authority over sources located on such lands. See 59 FR 43956, 43958-43960 (Aug. 25, 1994).

program responsibilities affecting Indian reservations, their environments, and the health and welfare of the reservation populace. Just as EPA's deliberations and activities have traditionally involved interests and/or participation of State Governments, EPA will look directly to Tribal Governments to play this lead role for matters affecting reservation environments.

November 8, 1984 "EPA Policy for the Administration of Environmental Programs on Indian Reservations"; Policy Reaffirmed by Administrator Carol M. Browner in a Memorandum issued on March 14, 1994.

Accordingly, a Governor's request to opt-in to the RFG program does not bind areas within the jurisdiction of Federally recognized Indian Tribes. The "opt-in" portion of the RFG program is voluntary and based on an application by the Governor of a State. Treating a request by a Governor of a State to voluntarily opt-in to the RFG program as binding on areas within the jurisdiction of Federally recognized Indian Tribes would fundamentally be at odds with the voluntary premise of the opt-in program, in light of other provisions of the CAA, and Federal Indian law and policy that do not treat Tribes as subdivisions of States.

Federally mandated and implemented fuels programs apply to areas within the jurisdiction of Federally recognized Indian Tribes. See 59 FR 43960-61. Thus, areas within Tribal jurisdiction that are located within the nine statutorily prescribed covered areas are subject to the RFG regulations, and other areas within Tribal jurisdiction are subject to the anti-dumping regulations. However, where an area within Tribal jurisdiction is not located within one of the nine statutorily-prescribed covered areas: (1) the sale of conventional gasoline to a retailer or distributor operating within the jurisdiction of a Federally recognized Indian tribe is not prohibited, even if surrounded by a State opt-in area; and (2) the sale of conventional gasoline intended for sale in areas within Tribal jurisdiction to a distributor located within a State opt-in area but outside the Tribal area is also not prohibited. All conventional gasoline is required to be accompanied by product transfer documents that identify it as conventional gasoline not to be used in a RFG covered area. See 40 CFR § 80.106(a)(1)(vii).

Finally, any Tribes interested in opting in to the RFG program for areas within their jurisdiction should contact Joanne Jackson Stephens at (303) 668-4276. As noted, EPA has authority to treat Federally recognized Tribes in the same manner as States for CAA programs and has already proposed to do so for virtually all CAA programs including RFG.^(1/9/95)