



Reformulated Gasoline Transission Rule: Response to Comments

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1 INTRODUCTION AND SUMMARY

In response to concerns about tight reformulated gasoline (RFG) supplies in the Midwest during spring 2000 and anticipating similar concerns for spring 2001, EPA met with midwestern producers and distributors of RFG beginning in March, 2001 to better understand how EPA might be able to facilitate a smoother seasonal transition. .

On May 17, 2001 the White House released the President's National Energy Policy Report, which identified a comprehensive energy strategy to address a range of concerns. On the issue of fuel refinery and delivery infrastructure, the National Energy Policy Report directed:

the Administrator of the EPA to study opportunities to maintain or improve the environmental benefits of state and local "boutique" clean fuel programs while exploring ways to increase the flexibility of the fuels distribution infrastructure, improve fungibility, and provide added gasoline market liquidity. In concluding this study, the Administrator shall consult with the Departments of Energy and Agriculture, and other agencies as needed.

Following the National Energy Policy Report directive, EPA then undertook a study, (drawing upon its earlier meetings in March with midwestern producers and distributors of RFG, and in consultation with the Departments of Energy and Agriculture) of "boutique fuels," focusing on the various types of fuels, the motivation and causes for states to implement boutique

fuels, the impact of these fuels on the fuel production and distribution system, and potential ways to mitigate the impact of disruptions (i.e., refinery fires, pipeline shutdowns) by allowing for a more fungible gasoline fuel system.

During the course of this study, requirements concerning the transition from winter to summer fuels were identified as a concern. Stakeholders with whom EPA met expressed concerns that there currently may not be enough flexibility during the transition season (April - June) to allow for an orderly changeover.

On December 3, 2001, EPA published a proposed rule intended to improve supply of summer grade RFG during the spring transition from winter grade RFG. Among other things, we proposed a new April 15 date on or after which no persons except retailers and wholesale purchaser consumers would be able to accept receipt of any RFG or RBOB other than summer grade RFG or RBOB. (For ease of discussion the April 15 date is referred to as a terminal receipt date. Also for ease of discussion, since the April 15 date applies to both RFG and RBOB, all references to RFG in connection with the April 15 date include both RFG and RBOB.)

We also solicited comments on 1) the elimination or delay of the May 1 compliance date (after which all parties except for retailers and wholesale purchaser-consumers must comply with the summertime RFG requirements), 2) establishment of April 1 as the terminal receipt date (rather than April 15), 3) introduction of a two step turnover process in which terminals must have their RFG tanks completely turned over to an intermediate RVP of 8.0 psi (or alternatively 9.0 psi) by April 15 and completely turned over to summer grade RFG by May 1 (or alternatively, May 15), 4) limiting applicability of the April 15 terminal receipt date to the Chicago/Milwaukee area, and 5) reduce allowable minimum RVP of RFG to 6.0 psi from 6.4 psi.

We received 17 comments on the proposed rule, from trade associations, refiners, a pipeline company, the American Automobile Association, and one state agency. Refiners and refinery trade associations almost uniformly opposed the proposed establishment of a terminal receipt date of April 15, stating that the drawing down of terminal tanks during the transition from winter to summer RFG has not been a significant problem. Moreover, refiners generally believed that a new compliance date would not have a significant impact on refinery or terminal practices, and that terminal tanks would still be “drawn down” (rather than blended down) in preparation for the transition to summertime RFG (see discussion in preamble to NPRM, 66 FR 60163, at 60165 (Dec. 3, 2001)). Many of these comments suggested that draw-down of terminal tanks was typically a necessary operation in order to ensure complete transition from winter to summer RFG because it is the most efficient and effective way to ensure complete removal of the lighter winter gasoline that tends to float to the top (or stratify) in a terminal tank. Thus, these commenters believed that a new compliance date would not provide the supply benefits during the seasonal transition that EPA intended. Similarly, commenters generally did not see any advantage to limiting the terminal receipt date to the Chicago/Milwaukee area.

Some of the refiners commented that the imposition of an April 15 terminal receipt date created the potential for “stranded product” – that is, wintertime RFG in a pipeline (or elsewhere in the delivery system) on or after April 15, that could not be accepted by the intended recipient. These commenters expressed concern that such stranded product might further complicate or slow down the gasoline distribution system. Commenters also expressed concerns that the April 15 terminal receipt date might interfere with routine deliveries between terminals on or after April 15, requiring terminals that supply other terminal to complete their seasonal transition even

earlier.

Several refiners stated that an April 15 terminal compliance date might have some benefits if EPA either eliminated the existing May 1 compliance date, or changed the May 1 date to May 15. Retailers, however, expressed significant concern over changing or eliminating the May 1 date, because of increased uncertainty regarding their ability to completely transition retail tanks with slow moving inventories from winter to summer RFG by June 1.

At least two commenters believed that a refinery production date, rather than a terminal receipt date, would provide greater benefits and would have less potential to create disruptions (such as stranded product) in the distribution system. However, EPA did not propose or request comment on a refinery production date.

Finally, most of the commenters indicated that if EPA were to promulgate a change in the compliance deadlines for transition to summer RFG that became effective for the 2002 summer RFG season, refiners and terminal would need to know immediately so they could begin planning. Moreover, several commenters indicated that even with immediate notice, such a last minute regulatory change might cause confusion that would disrupt the distribution system during this year's seasonal transition.

After reviewing the comments on the proposed rule, EPA staff contacted several of the commenters to ask follow-up questions in order to better understand the potential impact of a terminal receipt date in light of the various factors identified in the comments. These questions were generally intended (1) to help EPA understand how a terminal receipt date might affect refinery and terminal practices with respect to the use of "draw down" vs. "blend down", and with respect to the timing of tank draw downs, and therefore to help clarify what impact such a

compliance date might have on summer RFG inventories and supply during the seasonal transition; and (2) to help clarify what impact a change in the May 1 upstream compliance date might have on retail stations' ability to completely transition from winter to summer RFG by June 1.

Collectively, the comments on the NPRM, and the input we received during follow-up conversations, indicated that there are many complicated factors, in addition to EPA's compliance deadlines, that have a potentially significant impact on when and how refiners and terminals make the transition from winter to summer RFG. The impact of any new compliance deadline (or deadlines) would depend on the interaction of these factors, and may vary somewhat from facility to facility. Because of the relative sensitivity of the gasoline distribution system during the season transition period, EPA wants to more fully understand these factors before making any final decisions about whether to adopt a different compliance date for terminals or others. Therefore, while EPA has not ruled out the possibility that some change(s) in the compliance deadlines for transition from winter to summer RFG might be appropriate, we are not taking any final action today on the proposed April 15 terminal receipt date.

Refiners generally supported reducing the minimum RVP of summertime RFG from 6.4 to 6.0 psi, but representatives of the automobile industry opposed this, citing potential difficulties with driveability during cold periods. Also, while refiners argued that an April 15 terminal receipt date would not result in the "blend down" of wintertime RFG because of stratification of product, they did not provide evidence why such stratification would also not be problematic for blending of summertime RFG with an RVP of 6.0 psi with wintertime RFG.

Lastly, commenters expressed support for an enforcement policy of allowing the 2

percent testing tolerance for the first tank of RFG classified as VOC-controlled at terminals, stating that it would help to ease the transition from winter to summer gasoline, and that it would increase transition period flexibility. Some commenters also requested additionally extending this 2 percent tolerance to the first tank of RFG classified as VOC-controlled at retail stations. In fact, EPA already allows this 2 percent tolerance for the first tank of RFG classified as VOC-controlled at retail stations.

The remainder of this report contains a detailed discussion of the comments and our responses to the issues raised.

2 BLENDSTOCK TRACKING AND ACCOUNTING

In the Notice of Proposed Rulemaking (NPRM), we proposed to replace the existing blendstock tracking and accounting provisions with a less restrictive program which would have required a refinery with a baseline that is more stringent than the anti-dumping statutory baseline, and that produces less gasoline than its 1990 baseline volume during the annual averaging period, to petition EPA for approval to transfer to another refinery specified dirty blendstocks in excess of five percent of the refinery's annual production. We received several comments regarding the details of this proposed petition requirement. For the reasons discussed in the preamble to the final rule, we decided to delete the existing blendstock tracking and accounting requirements and not to replace them with the petition requirement or any other requirements for blendstock transfers. As a result, we have not addressed the comments we received on the details of the proposed petition requirement.

3 UPDATING ASTM DESIGNATED ANALYTICAL TEST METHODS FOR REFORMULATED AND CONVENTIONAL GASOLINE TO THEIR MOST RECENT ASTM VERSION

Refiners, importers and oxygenate blenders producing gasoline are required to test RFG and CG for various fuel parameters like olefins, distillation points, benzene and RVP. During the federal RFG rulemaking, and in response to comments by the regulated industry, EPA designated analytical test methods that the Agency would use for enforcement and compliance purposes. See 40 CFR 80.46; 59 FR 7813, February 16, 1994. On December 3, 2001, the Agency proposed to update certain designated analytical test methods for measuring olefins, RVP, Distillation, and oxygen and oxygenate content analysis in reformulated and conventional gasoline.

The American Petroleum Institute (API), the National Petroleum Refiners Association (NPRA), and several refiners commented in support of updating certain analytical test methods in the proposal with caveats. Several commenters recognized the proposed test methods for olefins, RVP and distillation are not the most recent ASTM test methods. EPA was not aware at the time of proposal of the more recent ASTM test method versions for RVP (ASTM D 5191-01) and for distillation (ASTM D 86-01). Today's action will promulgate ASTM D 5191-01 as the designated test method for RVP and ASTM D 86-01 for distillation. EPA was aware at the time of proposal of a more recent version of ASTM D 1319-99 for olefins. However, the 1999 version of ASTM test method D 1319 only allows for the use of ASTM 4815 for the determination of total oxygenate blending components when the gasoline samples contain

oxygenates. Today's action is promulgating ASTM D 5599-00 as the designated test method for oxygen and oxygen content analysis instead of the EPA-OFID method. Moreover, since gasoline samples may contain oxygenates, and it is necessary to correct the hydrocarbon result or olefin result from D 1319 to a total-samples basis when oxygenates are present in the gasoline sample, it would be inconsistent from a regulatory perspective to promulgate a designated test method for olefins that does not allow the use of the EPA designated test method for oxygen and oxygen content. For this reason, EPA today is promulgating the designated test method for olefins as the ASTM D 1319-98 which allows for both ASTM D 4815, or CG/OFID (essentially ASTM 5599-00) or equivalent, when oxygenates are present in the gasoline sample.¹

Several commenters stated that EPA should adopt ASTM D 5191-01, as written, and should not replace the ASTM correlation equation with an EPA correlation equation. NPRA commented that nothing in the A-2002-21 docket explains the EPA decision for using the EPA correlation equation from Method 3, and therefore the EPA equation should be deleted from the proposed regulatory text in section 80.46(c). Several commenters argued the ASTM correlation equation includes a wider Inter-Laboratory (ILS) data set than the proposed EPA equation. Also, several commented that the ASTM equation has been confirmed by an additional separate study, and that the EPA equation is less comprehensive and has not been confirmed. For the

¹ The Agency realizes that under today's action, a laboratory will have to run the 1998 version of D 1319 for olefin determinations and the 1999 version of D 1319 for alternative aromatic determinations, as we recognize that it would be preferable for laboratories to be able to use ASTM D 1319-99 for both olefins and aromatics. However, as discussed above, adoption of D 1319-99 as EPA's designated method for olefins would be inconsistent with EPA's adoption of ASTM D 5599-00 as the designated test method for oxygen and oxygen content. Thus, for now, unless a determination is made that ASTM 5599-00 can be appropriately included as a method for measuring oxygen and oxygen content with ASTM D 1319-99, EPA will retain the 1998 version of D 1319 as the designated test method for olefins.

measurement of RVP, EPA proposed to eliminate Appendix E which contains EPA Method 3, and designate ASTM D 5191-99 as the required method, with the exception that the correlation equation as described in EPA Method 3 must be used in place of the correlation equation described in ASTM D 5191-99. EPA believes ASTM D 5191-99 as proposed, and/or ASTM 5191-01 which is being promulgated as the designated test method today, is identical to the RVP test method in Appendix E when the correlation equation from EPA Method 3 is used with this ASTM method. The issue of the choice of the correlation equation to use for RVP was already addressed in a previous rulemaking. On March 17, 1993, EPA promulgated a new test method, Method 3, as the regulatory method for measuring RVP (58 FR 14476). This method specified that the pressure value obtained by Method 3 must be correlated to the digital Herzog method. ASTM D 5191-01 is identical to Method 3 except that the equation in ASTM D 5191-01 correlates the pressure value obtained by this method with the dry manual method, rather than with the digital Herzog method. As discussed in the March 17, 1993, rulemaking, the Agency continues to believe the digital Herzog method, which utilizes a transducer for the measurement of RVP for unleaded gasoline, is the most accurate measurement of RVP at the specified test condition. Therefore, the Agency believes the Method 3 value should be correlated to the digital Herzog method, which is reflected in the correlation equation as proposed, rather than to a less accurate test method, such as the dry manual method as specified in the ASTM method D 5191-01. EPA does not believe that specifying the ASTM method but requiring the Method 3 equation compromises the test method procedure. Rather, this approach provides a better technological certitude than the ASTM equation would provide.

Several commenters supported the adoption of ASTM 5599-00, as a valid and current

ASTM test method, instead of the EPA-OFID method. In addition, some commenters recommended that EPA permanently adopt the alternative test method for oxygen and oxygen content analysis, ASTM 4815-99, as ASTM D 5599-00 is more costly to operate and maintain, and ASTM D 4815-99 is a reliable and dependable method and requires significantly less overhead for operation and maintenance. The February 16, 1994, final reformulated gasoline rule provided flexibility for the use of alternative test methods in two cases (regarding oxygenates and aromatics) for industry to use for compliance measurements under an original sunset provision of January 1, 1997, to provide lead time for industry to acquire equipment necessary for the designated test methods and to become familiar with designated test method operation. Since that time, we have extended the sunset provision for the use of both alternative test methods several times, and the current sunset provision for use of both alternative test methods expires on September 1, 2004. The purpose of the several extensions of the use of alternative test methods for oxygenates and aromatics was to allow for the promulgation of the performance based analytical test method approach rulemaking which the Agency still intends to promulgate and which would set forth criteria for which any candidate alternative test method may qualify for compliance measurement. Rather than permanently adopting ASTM D 4815-99 as an alternative test method for measuring oxygen and oxygen content analysis in gasoline, the Agency believes it would be more prudent to defer the decision as to whether ASTM D 4815-99 should be a permanent alternative test method until the performance based analytical test method approach rulemaking has been promulgated.

Finally, API and several refiners that EPA adopt ASTM D 5769-98 for aromatics, including chilling the sample. API recognized EPA's concern about a sample chilling

requirement in ASTM D 5769-98 which may lead to condensation on chilled sample containers during the weighing of the sample. However, API argued chilling is completed in order to minimize the loss of light ends when weighing samples using an analytical balance, and loss of light ends will create an unnecessary bias since most of the aromatics are present in heavier fractions of the gasoline. Thus aromatic values will be higher if non-chilling of samples is allowed. API recognized that EPA could adopt language outside of the method that suggests the user be alert to any condensation occurring, and take steps to eliminate the condensation effect, if necessary. The Agency agrees with API and the several commenters that effort should be put forth into minimizing sample degradation due to light end loss. However, the Agency remains concerned about the potential for added weight of condensation on the outside of a sample vial which would serve to reduce the measured aromatic concentration from the “real” value. Therefore, the Agency today is adopting ASTM D 5769-98 as the designated method for measuring aromatics in gasoline, but with the stipulation that the procedural requirement in ASTM 5769-98 for chilling the sample be optional. We believe that analytical laboratories utilizing good laboratory practice standards will always make significant effort into minimizing sample degradation due to light end loss. By making the sample chilling requirement optional, we provide flexibility to analytical laboratories in allowing them to choose the best approach for their situation in their attempt to obtain the correct result with this method.

NPRA commented that aromatics is not listed in Table 3 in the preamble (66 FR 60169). Aromatics should be added to Table 3, per the proposed revision to section 80.46(f)(2)(i). This change updates the version of ASTM D1319 for aromatics content, which is an option until September 1, 2004. The Agency agrees with NPRA, and in fact on September 1, 2000, the

Agency published a Federal Register Notice of Final Rulemaking which extended the deadline for the use of ASTM D1319, as an alternative test method for aromatics, until September 1, 2004, as well as updating this test method to its most recent version, ASTM D1319-99 (see 65 FR 53189). The purpose of Table 3 in the December 3, 2001, proposal in the preamble (66 FR 60169) was to notify the public of the designated test methods the Agency proposed to update to their most recent ASTM version or replace certain Agency specific designated test methods with its corresponding ASTM version of the test method.

One commenter requested that a transition time of between six to nine months be provided for industry to become familiar with the ASTM standard test methods before they are required to implement them. The Agency does not believe a six to nine month transition time is needed for industry to become familiar with these ASTM standard test methods. The ASTM standard test methods being promulgated today are either newer versions of existing ASTM designated test methods or a replacement of Agency-specific designated test methods with the respective current ASTM version of the designated test method. Because these ASTM standard test methods are voluntary consensus standards in which the regulated industry fully participates during their development, industry should be sufficiently familiar with, and/or have sufficient access to the necessary expertise, to be able to implement these updated ASTM standard test methods within the time allowed by today's final rule. We are confident that the sixty (60) day lead time as provided by today's final rule is sufficient lead time for industry to become familiar with and implement these ASTM standard test methods.

Table 1 lists the designated analytical test methods which are being updated for each gasoline parameter measured under RFG and CG fuels program in today's final rule. We have

reviewed these newer versions of the ASTM test methods. The Agency believes that the revisions in the newer versions of the ASTM designated test methods are not significant changes that would cause a user of an older version of the same method to incur significant costs. All of the revisions were deemed necessary by ASTM so that improvements in the test method's procedures would ensure better operation for the user of the test method.

Table 1.-Designated Analytical Test Method Under RFG and CG Fuel Programs

Fuel parameter	Designated analytical test method
Olefins.....	ASTM D 1319-98, entitled, "Standard Test Method for Hydrocarbon Types in Liquid Petroleum Products by Fluorescent Indicator Absorption"
Reid Vapor Pressure.....	ASTM D 5191-01, entitled, "Standard Test Method for Vapor Pressure of Petroleum Products (Mini Method)", except that the following correlation equation be used with ASTM D 5191-01: $\text{RVP psi} = (0.956 * X) - 0.347$ $\text{RVP kPa} = (0.956 * X) - 2.39$ Where: X=total measured vapor pressure in psi or kPa
Distillation.....	ASTM D 86-01, entitled, "Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure"
Oxygen and Oxygen content analysis.....	ASTM D 5599-00, entitled, "Standard Test Method for Determination of Oxygenates in Gasoline by Gas Chromatography and Oxygen Selective Flame Ionization Detection" ²
Aromatics.....	ASTM D 5769-98, entitled, "Standard Test Method for Determination of Benzene, Toluene, and Total Aromatics in Finished Gasolines by Gas Chromatography/Mass Spectrometry", except that

² Prior to September 1, 2004, and when oxygenates are limited to MTBE, ETBE, TAME, DIPE, tertiary-amyl alcohol, and C₁ and C₄ alcohols, any refiner, importer, or oxygenate blender may determine oxygenate content using ASTM standard method D 4815-99, entitled, "Standard Test Method for Determination of MTBE, TAME, tertiary-amyl Alcohol and C₁ and C₄ Alcohols in Gasoline by Gas Chromatography" provided the result is correlated to ASTM D 5599-00.

the sample chilling requirements in section 8 of this method be optional³

³

Prior to September 1, 2004, any refiner, or importer may determine aromatics content using ASTM standard method D 1319-99, entitled, "Standard Test Method for Hydrocarbon Types in Liquid Petroleum Products by Fluorescent Indicator Absorption" provided the result is correlated to ASTM D 5769-98.

4 CORRECTIONS TO GASOLINE AND DIESEL SAMPLE TESTING METHODOLOGY

40 CFR Part 80, Appendices D and G, specify sampling procedures for gasoline and diesel fuel for all motor vehicle fuel programs under 40 CFR Part 80, including the programs for unleaded gasoline, gasoline volatility, diesel sulfur, RFG, and anti-dumping. We proposed to replace the sampling procedures in Appendices D and G with the following ASTM standard practices:

- D 4057-95(2000), “Standard Practice for Manual Sampling of Petroleum and Petroleum Products;”
- D 4177-95(2000), “Standard Practice for Automatic Sampling of Petroleum and Petroleum Products;”
- D 5842-95(2000), “Standard Practice for Sampling and Handling of Fuels for Volatility Measurements;” and
- D 5854-96(2000), “Standard Practice for Mixing and Handling of Liquid Samples of Petroleum and Petroleum Products.”

These changes were formerly proposed in “Regulation of Fuels and Fuel Additives: Modifications to Standards and Requirements for Reformulated and Conventional Gasoline - Proposed Rule,” 62 FR 37338 (July 11, 1997), although these provisions were never finalized. Since we are proposing to update various other test methods via this notice, it is logical to consider sampling methodologies here as well.

Appendices D and G of 40 CFR Part 80 were adopted from the 1981 version of D 4057.

Over time, however, ASTM has updated D 4057, and these changes are not reflected in Appendices D and G.

EPA received several supportive comments for adopting the ASTM sampling standards as proposed. One commenter requested that a transition time of between six to nine months be provided for industry to become familiar with the ASTM sampling standards before they are required to implement them. As discussed above, appendices D and G of 40 CFR Part 80 were adopted from the 1981 version of ASTM D 4057. Because these ASTM sampling standards are voluntary consensus standards in which the regulated industry fully participates during their development, industry should be sufficiently familiar with, and/or have sufficient access to the necessary expertise, to be able to implement these sampling standards within the time allowed by today's final rule. We are confident that the sixty (60) day lead time as provided by today's final rule is sufficient lead time for industry to become familiar with and implement these ASTM sampling standards.

Thus, EPA is today adopting three ASTM methods in addition to D 4057-95(2000) as proposed in order to include procedures that address a broad scope of sampling situations that are relevant to EPA's motor vehicle fuels programs. D 4177-95(2000) deals with automatic sampling of petroleum products, which is relevant under the anti-dumping regulations for refiners who produce conventional gasoline using an in-line blending operation where automatic sampling is necessary. Similarly, D 5842-95(2000) deals with sampling and sample handling for volatility measurement, which is relevant to determining compliance with the volatility standards in § 80.27 and the RFG standards in § 80.41. Last, D 5854-96(2000) deals with the creation of composite samples, which is relevant under the RFG and anti-dumping programs in certain

situations involving imported gasoline where the gasoline from multiple ship compartments is treated as a single batch.

EPA believes it is appropriate to replace Appendices D and G with ASTM standard practices. The current ASTM practices reflect up to date procedures, which if followed would result in improved sample quality for regulatory purposes. In addition, today's adoption of industry standard procedures reduces the regulatory burden because parties would be able to follow their customary practices when meeting regulatory requirements.

Regarding sampling of RFG in terminal tanks, one commenter suggested sampling "product leaving the terminal gate and entering into commerce" instead of product contained in storage at a terminal. However, due to concerns (described below) of winter gasoline forming a stratified layer on top of summer gasoline, sampling product leaving the terminal gate may not necessarily represent the tank as a whole, and is therefore not a viable alternative to current sampling methods.

5 TERMINAL RECEIPT DATE

ESTABLISHMENT OF APRIL 15 AS TERMINAL RECEIPT DATE

EPA has decided not to take final action at this time on an April 15 date by which terminals must begin receiving summer grade RFG. EPA proposed an April 15 terminal receipt date with the intent of helping to facilitate a smoother turnover of storage tanks containing reformulated gasoline (RFG) from winter grade to summer grade RFG. EPA had believed that terminal tanks were primarily turned over in a short period of time immediately before the May 1 compliance date by drawing tanks down to extremely low levels, then refilling the tanks with summer grade RFG to come into compliance by May 1. EPA believed that this near-simultaneous draw down significantly decreased RFG inventories and made the distribution system more vulnerable to upsets late in April. Adding the April 15 date to the existing May 1 compliance date was intended to encourage a more gradual blend down of terminal tanks over the two week period between April 15 and May 1, and to discourage the more severe draw down approach late in April. Thereby, EPA intended to help prevent inventories of RFG in terminal tanks from reaching critically low levels at any point during the winter-to-summer transition.

Several commenters on EPA's proposal stated that the window of time between April 15 and May 1 was too short to promote any appreciable amount of blending down. Many commenters, particularly refiners, stated that EPA was trying to correct a problem that has been short lived and localized at worst, and that the current regulatory requirements for transitioning tanks from winter to summer grade RFG were satisfactory. Most commenters pointed out that

tanks are drawn down not only to minimize the time and cost to convert them to summer grade RFG, but that drawing down tanks was the only practical way to promote mixing of residual volumes of winter RFG and completely convert tanks from winter to summer grade RFG.

Storage tanks are typically filled with gasoline through a nozzle located at the bottom of the tank, and emptied by withdrawing gasoline through another nozzle at the bottom of the tank. The bottom-fill design minimizes the amount of turbulence and mixing that occurs when gasoline flows into the tank, and allows any entrained water to settle to the bottom of the tank for later withdrawal through a separate nozzle. Winter grade gasoline contains more light hydrocarbon material (butane and pentane) and is therefore less dense than summer grade gasoline. When denser summer grade gasoline flows into a nozzle at the bottom of a tank containing less dense winter gasoline, the winter gasoline tends to float upward and form a layer on top of the summer gasoline (stratify). EPA regulations stipulate that by May 1, all RFG contained in and upstream of terminal tanks must meet summer grade requirements, and when EPA performs compliance tests it draws gasoline samples from the bottom, middle, and top of each tank. Therefore, to prevent any residual stratified layers of winter grade RFG from simply floating on top of summer grade RFG flowing into a storage tank, and causing a violation, terminal operators generally try to draw down as much winter grade RFG as possible before adding summer grade RFG to a tank. This procedure is typically repeated two or three times before the residual volume is sufficiently mixed to assure that all RFG subsequently drawn from the tank will meet summer grade RFG requirements. Although some RFG tanks have mixing equipment which helps in mixing winter and summer grade RFG (presumably after water has settled and been withdrawn from the tank), terminal tanks are typically not equipped with mixing

equipment, and such equipment may not always be able to effectively reach the very top layer of gasoline in a tank.

Ideally, tanks would need to be drawn down only once in order to achieve the transition from winter to summer grade RFG. During the winter to summer RFG transition, terminals try to schedule deliveries of summer RFG at a time when the residual volume of winter RFG in the tank is at a minimum. However, terminals must balance the desire to turn their RFG tanks over as quickly as possible against the risk of prematurely running out of RFG and not being able to supply downstream customers (retail stations or other terminals). From follow-up conversations with four refiners who submitted comments, a terminal tank typically needs to be drawn down and refilled two, or often three, times in order to complete the transition. The final number of draw downs and refills depends on the volume and quality of residual winter RFG in the tank when it is filled with summer RFG, and the amount of mixing that occurs when summer grade RFG is added to the terminal tank.

The frequency that a tank can be refilled with summer grade RFG depends on the cycle length of the pipeline supplying the tank. A pipeline cycle is the frequency of availability of a particular product from a pipeline for delivery into a customer's terminal tank. For example, a pipeline on a 10 day cycle would have RFG available to refill its customers' tanks once every 10 days. From follow-up conversations with four refiners who submitted comments, pipeline cycles can vary from 5 to 10 days. Thus, terminals may need up to 20 or 30 days to turn their RFG tanks, depending on the number of turns required to completely turn a tank and the cycle length of the pipeline supplying the tank. Consequently, many terminals are already receiving summer grade RFG by April 15 and establishing an April 15 terminal receipt date for these terminals

would not have the intended effect of easing the terminal transition from winter to summer grade RFG. Commenters generally believed that EPA's proposal would not significantly change the current tank turnover process at terminals, would create the new possibility of stranded product (i.e., product that goes into a pipeline with intended delivery before April 15, but arrives at its destination after April 15 due to an operational slowdown in the pipeline), and would prohibit the transfer of winter RFG from one terminal to another terminal starting April 15. According to commenters, this terminal to terminal transfer prohibition would reduce the flexibility currently available to terminal operators and might adversely impact localized fuel supply.

EFFECTS OF DELAYING OR ELIMINATING MAY COMPLIANCE DATE

In connection with establishing an April 15 terminal receipt date, EPA also asked for comment on delaying the current May 1 compliance date to May 15, or eliminating the May compliance date altogether. Delaying or eliminating the May 1 compliance date was intended to widen the window of time available for terminals to blend their tanks from winter to summer RFG. Thus, terminals would be able to further spread out the turnover of their tanks from winter to summer grade RFG and further decrease the current magnitude of the reduction in RFG inventories just before May 1.

Since EPA is not taking final action today on an April 15 terminal receipt date, the May 1 compliance date will remain in its current form, in order to ensure adequate lead time for retailers to turn over their tanks. EPA received a wide range of comments regarding delay or elimination of the May 1 compliance date in connection with establishing an April 15 terminal receipt date. Refiners generally agreed that the May 1 compliance date should be eliminated, or at

least delayed, to maximize terminal flexibility if an April 15 terminal receipt date were established. Although draw down, rather than blend down, would continue to be the primary method of converting terminal tanks, allowing a wider window of time after April 15 for conversion of terminal tanks would help stagger the timing of when terminals drew down their tanks. Some refiners commented that a May compliance date is already unnecessary, even without an April 15 terminal receipt date, because they could better optimize their RFG supply system without a May compliance date. However, one refiner did suggest that the May compliance date helps provide a “level playing field” in the system for determining when RFG prices change from winter grade to summer grade.

In contrast, comments received from retail station trade associations opposed any delay or elimination of the May 1 compliance date. One retail trade association, and some refiners, pointed out that some retailers already must carefully manage slow moving premium gasoline tanks to be in compliance by June 1. If delaying the May 1 date reduced the availability of summer grade RFG during early May, it could become more difficult for some retailers to turn their slow moving tanks to summer RFG by June 1. If the May 1 date were eliminated, one retail trade association expressed deep concern that major integrated oil companies could adopt supply and pricing strategies that effectively denied adequate supplies of summer RFG to independent marketers. However, one refiner commented that even if the May compliance date were eliminated, his company’s terminals would still have to turn their tanks around May 1 to ensure compliance at their retail stations. While the comments from the retail industry did not include detailed data or analyses regarding the need to retain the May 1 terminal compliance date, it is clear from their comments, and from follow up conversations with retail trade association

representatives, that they did not believe any relaxation of this date would improve summer grade RFG supply to retail, which was the intent of this proposal.

LIMITING TERMINAL RECEIPT DATE TO CHICAGO AND MILWAUKEE RFG AREAS

EPA sought comment on the feasibility of only establishing an April 15 terminal receipt date in the Chicago/Milwaukee RFG areas, due to the supply problems experienced in these areas during the past two seasonal transitions. EPA is not taking final action today on an April 15 terminal receipt date for the Chicago/Milwaukee area, for the same reasons given above. Some commenters remarked that operational problems, in conjunction with the spring transition, have been responsible for RFG supply problems in the Midwest the past two years, however, if an April 15 date were to be established at all, it should be limited to the Chicago/Milwaukee RFG areas where supply concerns have been the greatest. Other commenters suggested that any new transition procedures should be implemented nationwide to help ease the transition in other RFG areas such as St. Louis and Louisville, and avoid creating different compliance dates for different RFG areas.

ESTABLISH APRIL 1 TERMINAL RECEIPT DATE

EPA requested comment on establishing an April 1 terminal receipt date instead of an April 15 terminal receipt date. Establishing an April 1 terminal receipt date instead of an April 15 terminal receipt date would have further widened the window of time before the May 1 compliance date from two weeks to one month during which terminals could turn over their tanks from winter to summer grade RFG. However, several refiners expressed concern that an

earlier terminal receipt date would further decrease overall RFG production by removing additional butane and pentane from the gasoline pool, and possibly create difficulties in maintaining the overall butane balance between summer and winter gasoline. Additionally, other commenters cited potential problems with driveability, thus EPA is not taking final action on an April 1 terminal receipt date.

TWO STEP RVP PHASE-IN

As an alternative to a terminal receipt date, EPA sought comment on the feasibility of establishing a two step phase-in process to help ease the transition from winter to summer grade RFG. The two step turnover process required terminals to have their RFG tanks completely turned over to RFG with an intermediate RVP of 8.0 psi (or alternatively 9.0 psi) by April 15 and completely turned over to summer grade RFG by May 1 (or alternatively, May 15). Most commenters felt that the two step phase-in only further increased the complexity of the transition, and increased recordkeeping burden by adding an additional compliance date. Some commenters felt the least restrictive option (terminal tanks must have 9.0 psi RFG by May 1 and be completely turned over to summer grade RFG by May 15) was a viable alternative to the terminal receipt date. Due to little support for this option, EPA is not taking final action on any of the two step phase-in scenarios described in the proposal.

6 REDUCTION OF MINIMUM RVP OF SUMMER RFG FROM 6.4 TO 6.0 PSI

In the NPRM, we requested comment on (but did not propose) the option of decreasing the allowable minimum RVP for RFG at the refinery gate to 6.0 psi from 6.4 psi, as an addition to the proposed terminal receipt date, to further help ease the winter to summer RFG transition. Under the emissions model used to measure RFG performance, the lowest allowable RVP for RFG is 6.4 psi.

In seeking comment on this option we had reasoned that if the minimum allowable RVP of summer grade RFG were decreased, a greater volume of winter grade RFG could be blended with the sub-RVP summer grade RFG to produce an acceptable blend of summer grade RFG. We assumed that the net effect of reducing the minimum allowable RVP would be that RFG inventory does not have to be reduced as greatly in order to achieve the winter to summer RVP transition.

Comments from automobile representatives opposed this option, citing driveability as a concern. Reducing RVP also reduces the driveability index of RFG. In the event of late cold weather, vehicles could experience driveability problems if fueled with RFG with an RVP less than 6.4 psi.

Refiners generally supported this option since it increased their flexibility during terminal transition. As noted above, however, refiners also stated that little to no mixing or blending of the different types of gasoline would occur at terminals because of stratification. Thus, it was

possible some RFG with an RVP less than 6.4 psi could be distributed to retail stations. While some refiner representatives commented that significant mixing would likely occur in retail tanks, so that any 6.0 psi gasoline that was not mixed at a terminal would be mixed with higher RVP gasoline at a retail station, they provided no evidence or explanation why such mixing should occur. In light of 1) concerns from the automobile sector about driveability, 2) refiners' arguments that stratification would occur at terminals, and 3) the lack of evidence that despite such stratification the two types of gasoline would blend downstream, EPA is not taking final action to change the 6.4 psi RVP minimum.