

TERMS OF CLEARANCE

Reformulated Gasoline and Conventional Gasoline: Requirements for Refiners, Oxygenate Blenders, and Importers of Gasoline: ICR. 1591.26; OMB. 2060-0277

Section I - Background Material

Background Material

EPA has developed and implemented several regulatory programs addressing air quality and motor vehicle emissions which have significant impacts on gasoline properties and composition. Portions of these regulations impose data-related obligations on gasoline refiners, importers and other entities, requiring that they analyze gasoline to measure certain emission-related parameters, and submit these data to EPA. Refiners and importers must also submit gasoline volume data. These data, although intended for compliance evaluation, also provide a unique source of information about trends in emission related gasoline properties and performance.

Reformulated Gasoline Program

Reformulated gasoline (RFG) is gasoline blended to burn cleaner and reduce smog-forming and toxic pollutants. In 211(k) of the 1990 Amendments to the Clean Air Act (CAA 1990), Congress required RFG to be sold in cities with the worst ozone non-attainment problems. In addition, other cities with significant smog problems may choose to use RFG. RFG is currently used in 17 states and the District of Columbia. About 30 percent of gasoline sold in the U.S. is reformulated.

In the 1990 Amendments, Congress also required that non-RFG, or conventional gasoline (CG), sold in the rest of the country become no more polluting than gasoline sold in 1990. This requirement ensures that refiners do not "dump" into conventional gasoline fuel components that are restricted in RFG and that cause environmentally harmful emissions.

EPA introduced the RFG program in 1995, as required by the CAA. The RFG program establishes emissions performance standards for volatile organic compounds (VOCs), nitrogen oxides (NOx), and toxics. These standards are based on percent reductions from the average emissions of these pollutants in 1990 model year vehicles operated on a specified baseline gasoline. The RFG program also establishes a maximum benzene standard of 1.0 volume percent, and an oxygen minimum standard of 2.0 weight percent. (The Energy Policy Act of 2005 repealed the oxygen content requirement.) For conventional gasoline, the program establishes emissions standards for exhaust toxics and NOx designed to ensure that an individual refinery's or importer's gasoline will not have higher levels of these pollutants than the refinery's or importer's 1990 gasoline. These standards for conventional gasoline are called the anti-dumping standards. EPA has implemented the RFG program in three phases; the A Simple Model program began in 1995 and ended in 1997, the Phase I "Complex Model" RFG program began in 1998 and ended in 1999, and the Phase II RFG program began in 2000. Phase II RFG is designed to result in greater reductions of VOCs, NOx, and toxics emissions.

Refiners and importers of RFG are allowed to comply with each RFG standard either per gallon or annual average basis. Refiners and importers of conventional gasoline must comply with their anti-dumping standards on an annual average basis. Refiners of RFG must comply with the RFG standards separately for each refinery. Refiners of conventional gasoline may comply separately for each refinery, or they may aggregate their refineries. Importers comply with both the RFG and conventional gasoline standards for the aggregate of the gasoline they import during the year.

The emissions performance of gasoline is calculated using a model, called the Complex Model, which predicts the emissions level of each regulated pollutant based on the measured values of certain gasoline properties. These properties are: aromatics, olefins and sulfur, Reid Vapor Pressure (RVP), benzene, oxygen and distillation points. Refiners and importers are required to measure these properties in each batch of gasoline they produce or import, using a prescribed regulatory test method, and calculate the emissions level of each pollutant in each batch of gasoline using the Complex Model. The actual emissions level of each regulated pollutant in the refiner's or importer's gasoline is compared to the emissions standard for that pollutant to determine if the gasoline is in compliance.

Content Limits for Sulfur in Gasoline

In addition to the emissions requirements for RFG and conventional gasoline under the RFG program, EPA established limits on the amount of sulfur that may be present in gasoline nationwide beginning in 2004. These gasoline sulfur limits are part of a major program designed to significantly reduce the emissions from new passenger cars and light trucks. This program, called the "Tier 2" program, was a comprehensive regulatory initiative that treats vehicles and fuels as a system, combining requirements for cleaner vehicles with requirements for much lower levels of sulfur in gasoline.

The Tier 2 program phased in a single set of tailpipe emission standards that apply to all passenger cars and light trucks. To achieve these standards, very clean vehicle emission control technology was employed. Gasoline with reduced sulfur levels was required under the Tier 2 program to enable this very clean vehicle emission control technology to be effective. In addition to its beneficial effects on vehicle emission control systems, the reduction in gasoline sulfur levels required under the Tier 2 program contributed directly to cleaner air. The Tier 2 program included an initial phase-in period in which gasoline refiners and importers were required to comply with a company-wide annual average sulfur standard of 120 parts per million (ppm) in 2004 and 90 ppm 2005. In 2005, refineries and importers began complying with a 30 ppm annual average sulfur standard. The program also limited the amount of sulfur that may be present in any gallon of gasoline to 300 ppm in 2004 and 2005, and 80 ppm thereafter.

Under the Tier 2 program, refiners and importers were allowed to generate sulfur "credits" prior to 2004 for reductions from refinery sulfur baselines established under the Tier 2 regulations. Beginning with 2004, they were allowed to generate sulfur credits if they over-complied with the annual average sulfur standard by producing or importing gasoline with a sulfur level that was lower than the applicable standard. Refiners and importers that generated credits could use them to comply with the sulfur standard in a subsequent year or they could trade the credits to another refiner or importer who needed them to meet the sulfur standard.

In 2014, the EPA finalized a new rulemaking to establish the Tier 3 program to further reduce the sulfur content in gasoline beginning January 2017 and to streamline certain regulatory provisions. The Tier 3

program is part of a comprehensive approach to reducing the impacts of motor vehicles on air quality and public health.

The Tier 3 program continues the successful transition that began with EPA's Tier 2 program in which EPA treated vehicles and fuels as a system to reduce both gasoline sulfur and vehicle emissions. While there were claims at the time that the program would cause fuel prices to increase far in excess of EPA's estimates and would result in closures and fuel supply shortages, the Tier 2 program was a success and resulted in gasoline sulfur reductions of up to 90 percent and enabled the use of new emission control technologies in cars and trucks with no serious negative impacts on the refining industry. EPA's Clean Diesel Program similarly utilized a systems approach to reducing sulfur emissions from diesel fuels and enabling cleaner diesel technologies with the Highway Diesel Rule (finalized in 2001) and the Nonroad Diesel Rule (finalized in 2004) again with no serious negative impacts. Now that the U.S. refining industry routinely produces lower sulfur fuel products, new market opportunities for international fuel exports have opened up.

Mobile Source Air Toxics Program

In addition to the RFG and sulfur programs, EPA's Mobile Source Air Toxics (MSAT) program established requirements for refiners and importers designed to ensure that the average level of toxic air emissions from gasoline does not increase. This program requires refiners and importers to establish an individual toxics baseline, separately for RFG and conventional gasoline, based on the average toxics performance of their gasoline during the baseline period 1998 to 2000. Refiners and importers also must establish a total baseline volume based on their volume of gasoline production or imports during the baseline period. The volume of gasoline produced or imported during the year, up to the refiner's or importer's baseline volume can be no more polluting than the refiner's or importer's MSAT baseline level for that type of gasoline (RFG or conventional). Any volume produced or imported in excess of the refiner's or importer's individual MSAT baseline volume can be no more polluting than the RFG toxics standard or the refiner's or importer's conventional gasoline anti-dumping toxics baseline level, as applicable.

Refiner/Importer Compliance Reports

EPA has required refiners and importers of RFG to submit compliance reports on a quarterly basis. These reports include information on the volume, properties, and emissions performance for VOC, NOx and toxics of each individual batch of gasoline produced or imported during the quarter. In addition, refiners and importers who comply with an RFG standard for a particular pollutant on an annual average basis must submit an annual report which calculates the refinery's or importers annual average emissions for that pollutant. In addition, refiners and importers of conventional gasoline are required to submit an annual averaging report. This report includes information on the volume, fuel properties, and exhaust toxics and NOx emissions of each batch of gasoline produced or imported during the annual averaging period, and a calculation of the refinery's or importer's annual average for each pollutant. Refiners and importers of conventional gasoline are allowed to compile composite gasoline samples up to one month for purposes of batch reporting.

Beginning in 2004, all refiners and importers were also required to submit an annual average sulfur compliance report, which demonstrates compliance with the gasoline sulfur standards. This report must include data on each batch of RFG and conventional gasoline produced or imported during the annual

averaging period, including batch volume and sulfur content. The sulfur compliance report also includes information on the amount of sulfur credits that were generated or during the averaging period, used to demonstrate compliance, transferred to another party, or carried over to the next averaging period.

Since most of the information required to be reported under the MSAT program is also required under the RFG program, refiners and importers are not required to submit a separate MSAT compliance report. The only additional information required to be reported under the MSAT program relates to the toxics baseline volume and incremental volume of gasoline produced during the year by a refiner or importer. Refiners and importers are required to include this information in their RFG and conventional gasoline reports.

All refiners and importers of gasoline sold in the U.S. are required to comply with the reporting requirements described above, except for refiners and importers of gasoline produced or imported for use in California. Refiners and importers of California gasoline are exempted from the federal reporting requirements, and certain other federal enforcement requirements, based on a determination by EPA that California's emissions standards are as stringent as, or more stringent than, the federal emissions standards, and California's enforcement program is sufficient to ensure that refiners and importers of California gasoline meet California's standards.

EPA's Fuel Database

The information provided by refiners and importers in the compliance reports described above is stored in a database by EPA's Office of Transportation and Air Quality. This OTAQ database is a unique repository of information regarding gasoline production and importation in the U.S. Much of the information provided in the individual refiner and importer reports is claimed by the regulated parties to be confidential business information (CBI), which the Agency may not make available to the public. However, the raw data in EPA's database may be collectively analyzed to provide statistics on various aspects of gasoline production and importation, such as aggregated gasoline production and import volumes; and volume-weighted gasoline properties.

RFG Surveys

Under the CAA, areas required to use RFG are called RFG "covered areas". Gasoline meeting RFG emissions standards is required to be sold in each covered area. The most straightforward way to meet this requirement would be to require that the contribution of each refinery to the gasoline supply of each covered area would meet the RFG standards, on average. However, such an approach is unworkable in a fungible gasoline distribution system - one in which a refiner pumps his product into a pipeline where it mingles with other refiners product in unknown proportions before reaching the various covered areas. Gasoline is supplied to many covered areas in this manner. As a result, the RFG program provides for a system of "refinery gate averaging", in which each refiner is responsible only for the compliance, on average, of its own product as it leaves the refinery. This approach, however, has the potential for geographical skewing, where one covered area receives very clean gasoline while another gets very dirty gasoline, or temporal skewing, where a covered area receives clean gasoline for part of the year, but gets dirty gasoline for another part of the year.

To ensure that such skewing does not occur, the RFG program requires refiners and importers to conduct surveys of gasoline quality in RFG covered areas. These surveys are conducted by an industry association according to a statistical sampling plan approved by EPA and involve sampling gasoline at retail gasoline stations. If the gasoline in an area fails to meet the RFG standard for a particular RFG pollutant, the standard for that pollutant is made more stringent and the number of surveys that must be conducted in the following year is increased.

Under the RFG survey program, gasoline samples are taken at retail stations according to the statistical sampling plan, the samples are tested for the relevant gasoline properties, and the emissions performance of the gasoline is calculated to determine if the gasoline complies with the RFG standards. Therefore, the survey data provides much information regarding the quality of gasoline sold at retail gasoline stations in RFG covered areas.

Section II - Estimated Savings from Key Provisions of Tier 3 Streamlining Initiatives

In the Tier 3 Final Rulemaking, the EPA finalized a range of technical amendments and regulatory streamlining actions as part of the Regulatory Review initiative. Four changes in particular will affect the information collection burden of parties regulated under the RFG and Anti-dumping fuel programs.

First, the EPA is now allowing parties to collect, analyze, and report a monthly composite fuel sample for winter RFG. Prior to the streamlining efforts in Tier 3, for RFG, every batch would have had to have been tested for every parameter identified in 40 CFR § 80.65. In Tier 3, the EPA finalized an option that allow parties to collect and test a monthly composite sample for six of the 17 required fuel parameters. Since most refineries produce more than one batch per month, this greatly reduces the reporting burden of responsible parties as well as decreases operations and maintenance (O&M) and purchased service costs since refiners do not have to perform as many analytical tests.

Second, EPA removed the testing and reporting of two fuel parameters. One, API gravity was altogether removed from the RFG and Anti-dumping programs. This constitutes an approximate 1/17th reduction in reporting burden across several reporting categories for the RFG and Anti-dumping collection. Additionally, EPA removed the testing and reporting requirement for oxygenates from batches unless the gasoline includes oxygenates or the refiner is including downstream added oxygenate in its compliance calculations. All RFG samples have oxygenates included in their batch report, so the RFG reporting requirements are unaffected by this change. However, in 2014 only 8.3 percent of batches reported under Anti-dumping included oxygenates. Therefore, there are savings associated with the reduction of oxygenate testing and reporting for the Anti-dumping program.

Third, the Agency decreased the reporting frequency of reports from independent laboratories under 40 CFR 80.65(f) from quarterly to annually. This constitutes a 75 percent reduction of the burden associated with refiners and importers having RBOB and RFG tested by independent labs.

Fourth, EPA finalized requirements that allow for the quicker adoption of alternative test methods to those designated primary test methods in the regulations if certain performance based measurement system standards are met. This is expected to reduce the compliance costs of test results for assuring compliance to these fuels programs when reported to EPA under the RFG and Anti-dumping programs. Under the Performance Based Analytical Test Method Approach regulations (§80.47), responsible

parties are provided the flexibility to utilize newer, innovative test methods that are less expensive with respect to instrumentation cost as well as operating costs compared to the designated primary test methods incorporated by reference in the regulations.

Below is a description of the analysis EPA staff conducted to approximate the information collection burden reductions associated with the four major streamlining efforts finalized in Tier 3. Table 1 summarizes the findings of this analysis and shows that the streamlining efforts constituted totaled \$5,236,500 reduction to responsible parties under the RFG and Anti-dumping collection. The previously estimated overall annual costs for the RFG/Antidumping collection was about \$39,000,000. This reduction constitutes an estimated total reduction of 13.3 percent reduction in the burden to responsible reporting parties under the RFG/Antidumping collection.

Table 1. Estimated savings from Tier 3 Streamlining.

	Monthly Composites	Removal of API Gravity and Oxygenates	Decrease Frequency	Total
RFG Reporting	\$250,000	\$84,000		\$334,000
RFG Other Costs	\$322,000	\$270,000		\$592,000
Anti-dumping Reporting		\$463,000		\$463,000
Anti-dumping Other Costs		\$3,336,000		\$3,336,000
RFG Survey Reporting		\$16,500		\$16,500
RFG Survey Other Costs		\$153,000		\$153,000
Ind. Lab Reports			\$342,000	\$342,000
Total Savings	\$572,000	\$4,322,500	\$342,000	\$5,236,000

A. Monthly composites for winter RFG

Based on data submitted to us in prior years from RFG refineries, there were about 100 refiners that reported batches for winter RFG. Each company submitted on average 90 reports for a total of 5,400 batch reports. For RFG, there are four parameters association with distillation required under the RFG regulations (T50, T90, E200, and E300). In addition, there are parameters for olefins and aromatics content totaling six (plus the four distillation parameters) covered by the Tier 3 streamlining provisions. By streamlining, 32,400 responses from the six parameters across 5,400 batch reports are no longer required.

For monthly composites, the number of responses for winter RFG is calculated by multiplying the number of months that may be composited times the number of parties submitting reports times the number of parameters reports. Similar to the above scenario, there are 60 refineries reporting six parameters. However, instead of average batches, we calculate that there are eight months that refiners

could combine results. This equals 2,880 total responses representing approximately an 89 percent decrease of industry reporting burden for these six parameters.

To calculate the reduction in costs, we assume that 56 percent (5/9) of the reporting burden for total reporting burden is from winter RFG reporting. This is based on an approximation of the relative number of batches reported between the summer and winter seasons observed in data submitted to EPA under the RFG/Anti-dumping program. Assuming the current estimate of \$1,425,000, the total cost for winter RFG reporting is about \$792,000. An approximate decrease of 90 percent for six of 17 parameters for just the winter RFG reports equals a reduction of about \$250,000 per year. This equates to an approximate 31.5 percent decrease in the batch reporting burden for winter RFG.

There should also be a reduction in O&M and capitalization burden associated with the reduced sampling and testing required for distillation, olefins, and aromatics. According to the RFG Survey Association, the estimated costs per sample for conducting ASTM D86 to measure distillation parameters is approximately \$55 per sample. The reduction of reports for winter RFG from 5,400 to 2,880, as described above, results in a reduction of 2,520 tests that would be required under the RFG requirements for the measurement of distillation. This results in a reduction of the O&M and capitalization costs for winter RFG of approximately \$138,600.

For olefins and aromatics, which are typically measured using the same analytical test method ASTM D 1319, according to estimates received from the RFG Association and an independent laboratory, estimated costs for the conducting the tests is \$73 per sample. A reduction of 2,520 would result in a further reduction of the O&M and capitalization costs for winter RFG of approximately \$184,000.

In total, O&M and capitalization cost reductions for winter RFG related to the allowance of monthly composites results are \$322,000. Combined with the reduced reporting burden of \$250,000, total estimated reduction of burden on winter RFG refiners is estimated to be \$572,000.

B. Removal of API Gravity Reduction of Oxygenate Reporting

The complete removal of one of 17 parameters from all periodic batch reports from both RFG and Anti-dumping reports equates to about \$84,000 for RFG and about \$240,000 dollars for Anti-dumping. This is calculated by reducing the estimated costs for batch reporting by taking 1/17th of the value of the estimated reporting burden of \$1,425,000 for RFG and \$4,075,000 for Anti-dumping respectively. Additionally, the RFG survey will no longer have to measure API gravity which would reduce the reporting and purchased services costs associated with participation of refiners in the RFG survey program. The removal of reporting one of 17 fuel parameters from the RFG survey reporting burden (estimated to be \$285,000 per year) is approximately \$16,500 per year. Concerning decreased O&M costs, after contacting the RFG Survey Association, they estimated their costs per running ASTM D 4052 per 40 CFR 80.46 was \$34 per sample. The RFG survey examines approximately 4,500 samples per year, so this translates to an approximate decrease in purchased costs burden for refiners related to the RFG survey of \$153,000 per year.

There should also be a decrease in the O&M, purchased services and capitalization costs associated with the reduced burden from testing each batch for API gravity for all batches. For RFG, as mentioned above, there are approximately 9,000 batches of reformulated blendstock for oxygenate blending (RBOB)/RFG submitted to EPA reported each year. After consulting with the RFG Survey Association, it is

estimated that the cost for running ASTM D 4052 for a sample using market prices is \$30 per sample. This differs from the survey prices because the independent survey requirements necessitate a higher quality assurance element. This reduction of 9,000 tests for API gravity at \$30 per test results in a total reduction of \$270,000 for O&M and capitalization costs for RFG.

For Anti-dumping, EPA receives approximately 32,000 individual batches per annual reporting cycle. Assuming 32,000 tests for API gravity at \$30 per test, this translates to a reduction of approximately \$960,000 for O&M and capitalization costs for CG. A relatively small number of batches of CG reported for Anti-dumping purposes contain oxygenates. Only about 2,300 of these batches report oxygen content. This is primarily due to the fact the most batch reports are for conventional blendstock for oxygenate blending (CBOB) and therefore do not assume that ethanol has been added. However, some refiners certify batches of CG with ethanol already blended into it to take advantage of the dilution of some fuel properties, namely sulfur and benzene, if they meet certain criteria established in the regulations. Only parties that blend oxygenate (e.g. ethanol) into CG would have to test and report oxygenate values to EPA after the Tier 3 streamlining initiatives go into effect. This translates to a 93 percent reduction in oxygenate testing and reporting burdens. That translates to an approximate reporting reduction for refiners submitting Anti-dumping reports of \$223,000.

Every batch of RFG reported to EPA for the past 10 years has included oxygenate content in accordance with the regulations; so there is no anticipated reduction in reporting or testing costs associated with the flexibility of allowing the testing and reporting of oxygenates.

We estimated a substantial reduction in required O&M costs and capitalization costs associated with the reduced number of required oxygenate analyses. Based on information provided by the RFG Survey Association and an independent laboratory, costs to run ASTM D5599 to evaluate oxygen and oxygenate content for fuel is \$80 per sample. This leads to an estimated reduction of O&M and capitalization burden of \$2,376,000. It should be noted that the tests for oxygenates are the most expensive test methods required under the RFG/Anti-dumping requirements.

The total reduction in O&M and capitalization costs associated with the reduction of burden from API gravity and oxygenate testing and reporting is \$270,000 for RFG and \$3,336,000 for CG for a total reduction of \$3,606,000. Taken together with the reduced reporting burden for RFG and CG (\$547,000) and the reduced purchased service costs and reporting costs of the RFG Survey Association (\$169,500), the total savings to industry for removing the API gravity testing and reporting burden and the reduction of the oxygen and oxygenate testing and reporting totals approximately \$4,322,500.

C. Reduction in frequency of independent laboratory reporting

Another way that the Tier 3 streamlining reduced burden was by changing the frequency of independent laboratory analysis reports for refiners of RBOB or RFG from a quarterly requirement to an annual requirement. The prior estimate for this cost per year was \$456,000 per year. Three-fourths reduction in costs results in an estimated savings of \$342,000 per year in independent laboratory analysis reporting costs.

Section III – Future efforts to reduce the information collection burden for the RFG and Antidumping programs

Although EPA has already taken some steps to reduce the collection burden on industry, EPA will further continue to evaluate whether additional streamlining of the existing RFG and Antidumping requirements would reduce the collection burden on the regulated parties and on the Agency. The Agency has identified two primary candidates for future significant reductions of collection burdens: 1) EPA's E-Enterprise and; 2) to harmonize reporting elements across several fuels program reducing burdens once fully implemented.

E-Enterprise for the EPA is a transformative 21st century strategy to modernize how government agencies deliver environmental protection by streamlining, reforming, and better integrating our data systems and environmental programs. The adoption of an electronic single reporting form through EPA's E-Enterprise initiative could significantly reduce reporting burdens on industry. Higher performing programs could operate more efficiently and effectively deliver positive environmental results. Through joint governance, the states, EPA and tribes are collaboratively streamlining business processes and driving and sharing innovations across agencies and programs. EPA's fuels programs were selected as a pilot program to help demonstrate a functional deployment of E-Enterprise components for shared services focusing on the discrete universe of regulated parties in the fuels programs that are required to report compliance data.

Secondly, the EPA fuels program has approximately 90 reports that responsible parties must use to satisfy obligations under the part 79 and part 80 programs for fuel additives, RFS, RFG, Tier 2/3 gasoline, and diesel. E-Enterprise single reporting form could combine all of these reports into one online "smart report" and prevent users from submitting reports with data validation errors to the EPA.

In 2014, about 65,000 RFG/Anti-dumping reports were submitted and approximately 20 percent of these reports had errors that required manual correction by EPA staff or resubmission from the company. Users submitted approximately 8,000 part 79 reports in hard copy that required duplicate data entry into a database by EPA contractors. Many of these reports have overlapping elements that contribute significantly to the amount of time required by responsible parties to provide required information to the EPA. Additionally, the burden on EPA to ensure that the information is appropriately collected and accurate is significantly higher than it would be with a simpler overall reporting scheme.

By combining industry submitted reports into one cyclical report that combines all reporting requirements under 40 CFR parts 79 and 80 and incorporates business rules to ensure data quality, EPA could create a "customer-centric" tool that tells the regulated party what they are required to report based on profile and thus eliminating the need for reporting processing and manual corrections by EPA.

EPA has begun the implementation of this project by aligning all periodic reporting deadlines across all fuels programs into the same reporting schedules in Tier 3 and in other recent EPA actions. Although there are no immediate savings to reporting burdens for responsible parties, the alignment of reporting deadlines across EPA fuels programs could allow the Agency to harmonize reporting elements across several fuels program reducing burdens once fully implemented. It is important to note that other changes to the regulations are necessary to fully this approach.

Since many of EPA's fuels programs have disparate definitions of key terms (i.e. gasoline, what constitutes a batch) and exemptions to the program (e.g. which US territories must participate a program and when a party can be exempt from standards), the immediate savings from such a shift to a single electronic report may take some time to fully implement.

EPA has made an asserted effort to implement a user friendly approach to gathering information by launching the E-enterprise initiative. It is important to us to constantly reduce duplication and increase synchronicity wherever it occurs. However, the timing for developing and implementing any streamlined processes or regulatory revisions will depend on the Administrator's discretion to consider various factors.