

Representative Sample Guidance Q & A Document

We have received several questions concerning the Representative Sample Guidance (RSG) since it became final on March 15, 2021. This guidance answers those questions and addresses general issues related to the guidance. This document will be updated as needed.

1. Does AQD require facilities to meet the RSG requirements if the facility is just updating tank working and breathing emissions?

No. If a facility is just updating tank working and breathing emissions, they are not required to comply with the requirements of the RSG document. The RSG states “If a facility is modified such that emission calculations based off a sample do not change, a new sample is not needed.” Since the working and breathing emissions from the tank are not based on a representative sample, the submittal does not have to meet the RSG. However if they were updating tank flashing emissions, which are based on a sample, then the sample used would need to meet the RSG.

2. Does AQD require a new representative sample if the facility is updating glycol dehydration unit or fugitive equipment leak emissions?

Yes. If an applicant is updating emissions for an emissions source which relies on a sample, a sample which meets the requirements of the RSG is required.

For glycol dehydration units, the RSG requires “facility-specific sampling of the natural gas inlet to the dehydration unit for the original operating permit and subsequent modifications.” The RSG also requires “all samples used (from the actual facility or a representative facility) to be no older than three (3) calendar years at the time of submittal.” If a facility updates emission calculations from a glycol dehydration unit, the sample relied on in the program used to calculate the emissions must be facility-specific and within the last three years. However, as indicated in the RSG, applicants may request case-by-case determinations for samples that do not meet the established requirements.

For fugitive equipment leaks, the RSG requires use of site specific sampling, representative sampling, or a case-by-case determination. The RSG also requires “all samples used (from the actual facility or a representative facility) to be no older than three (3) calendar years at the time of submittal.” As indicated above, facilities may request a case-by-case determination for samples that do not meet the established requirements.

3. When using Vasquez Beggs to estimate flash emissions with facility specific data for pressure, temperature, and API gravity, does a facility need to use the RSG form?

No. While the API gravity is obtained from sampling, API Gravity is considered part of facility-specific operating data similar to separator pressure and temperature for the purpose of the RSG. As API Gravity is commonly sampled and analyzed during tanker truck loading operations, this type of sampling is not the focus of the RSG. Furthermore, many applications use the default worst case parameters which does not require actual sampling.

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4. Does the lab need to be a certified lab to run the samples?

The RSG does not specify the sampling or analysis methods that must be used or who needs to perform the sampling or analyses (e.g., that the lab needs to meet certain certifications). However, general requirements are established in OAC 252:100, Subchapter 43.

Additionally, many of the sampling and analysis methods provided by API, ASTM, GPA, etc., stress the importance of safety and accuracy as there are many inherent dangers and issues that may be encountered during sampling and analysis. These organizations stress that personnel should be properly trained, be aware of health risks and safety precautions, and be aware of potential issues which may lead to inaccuracy of an analysis. If an applicant has reason to believe that the accuracy of a sample may not be adequate, a more accurate sample should be used.

The results of the sampling and analysis will be used by the company to calculate emissions and demonstrate compliance with applicable requirements. Therefore, it is in the interest of the applicant to ensure the accuracy of the sampling and analysis and utilize trained or certified personnel. Many of the sampling and analysis methods describe the tasks and standards required to comply with those methods.

5. Does a facility need to submit multiple forms for different pieces of equipment?

An applicant should include DEQ Form # 100-702 with each sample relied on for emissions calculations. For example: at a multi-well facility (with each well stream passing through a separate inlet separator, Sample 1 (pressurized condensate from Separator 1) is used to calculate emissions from one set of storage tanks, Sample 2 (pressurized condensate from Separator 2) is used to calculate emissions from one set of storage tanks, and Sample 3 (gas inlet to the glycol dehydration unit before exiting the facility) is taken to estimate emissions from the glycol dehydration unit and fugitive VOC equipment leaks. Three samples are used to estimate emissions from the facility; therefore, three separate forms (one for each sample) would need to be submitted with the application.

Alternatively, an applicant may choose to estimate their emissions using a process simulation model using one sample for each inlet to the facility. Using the example facility above, Sample A (gas inlet to Separator 1) and Sample B (gas inlet to Separator 2) would be used as input into the process simulator model. The model would then calculate the remaining process streams to calculate emissions from the tanks, glycol dehydration unit, and fugitive equipment leaks. Two samples are used to estimate emissions from the facility; therefore, two separate forms (one for each sample) would need to be submitted with the application.

6. Does a facility have to comply with the RSG if it is an existing facility that is being modified?

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Compliance with the RSG depends on the specific “modification(s).” Several examples are provided to further outline situations where the RSG would or would not be triggered. These examples are not all-inclusive and do not represent every example or situation that may or may not trigger the RSG.

Example 1: An applicant applies for a construction permit for an existing facility to simply add a single tank. Since the facility is operating and adding the extra tank would not change any part of the process, the facility would already have existing operational data that could be used to determine if the sample selected to calculate emissions for the new tank is representative. Because the facility has an existing operational data and a new tank is being added, the applicant will need to comply with the RSG and will not be able to qualify for “pre-construction/pre-modification” option.

Example 2: An applicant applies for a Tier I operating permit to replace an engine with another engine of the same make, model, horsepower, etc. If the engine being replaced is the only change, then this change would not trigger the RSG since no emissions calculations which rely on a sample are being updated as a result of the engine replacement.

Example 3: An applicant applies for a Tier I operation permit to replace an engine with another engine of the same make, model, horsepower, etc. However, some fugitive equipment components are also added or replaced as a part of the engine replacement. Since fugitive equipment leaks emissions calculations rely on a sample, they are within the scope of the RSG and new emissions calculations, samples relied on, and a completed DEQ Form 100-702 should be included with the application for the project.

Example 4: An applicant applies for a construction permit for an existing wellhead facility to add another well and associated equipment to the facility. The new equipment includes a new separator, tanks, fugitives, etc. The applicant may qualify the new associated equipment at the facility as “pre-construction/pre-modification.” No other changes are requested. The applicant will not have to meet the requirements of the RSG for the construction permit. Furthermore, the facility will not be required to update emission calculations for the existing equipment as no changes were requested. However, with the submittal of the operating permit application, the sample(s) used to estimate emissions from the new emissions sources must meet the requirements of the RSG.

Example 5: An applicant applies for a construction permit for an existing wellhead facility to add another well and associated equipment to the facility. The new equipment includes a new separator, tanks, fugitives, etc. The applicant may qualify the new associated equipment at the facility as “pre-construction/pre-modification.” Additionally, the applicant requests to update emissions from the existing equipment. Again, the applicant will not have to meet the requirements of the RSG for the construction permit. However, with the submittal of the operating permit application, the sample(s) used to estimate emissions from the new and existing emissions sources must meet the requirements of the RSG.

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Example 6: An applicant applies for a construction permit for an existing wellhead facility to add another well and associated equipment to the facility. The new equipment includes new tanks and fugitives. The new well is routed to the existing separator on-site. Since the addition of the new well stream affects all units, the previous site-specific operational data may no longer be representative of how the new facility will operate. The applicant will be able to qualify for the “pre-construction/pre-modification” option for the entire facility. However, with the submittal of the operating permit application, the sample(s) used to estimate emissions from all emissions sources must meet the requirements of the RSG.

Example 7: An applicant requests to remove a Vapor Recovery Tower (VRT), which is located downstream of the inlet separator and upstream of the storage tanks, and associated Vapor Recovery Unit (VRU) at a wellhead facility. As such, the applicant has requested to update emissions from the storage tanks. The pressurized condensate sample previously relied on for emissions calculations from the storage tanks was taken from the outlet of the VRT. Now with the VRT removed, the previous sample is no longer representative of the facility; however, all other parameters and data upstream of the removed VRT remains the same. Therefore, the facility will still have enough operational data (e.g., inlet separator, heater treater, etc.) to select a new representative facility sample and determine if it is representative as qualified in the RSG. In this case, the facility will not be able to qualify for the “pre-construction/pre-modification” option.

Example 8: An applicant is requesting to modify facility permitted under a general permit. The applicant submits a Notice of Modification to satisfy the permitting requirements to authorize the modification. The applicant should consider the modification being requested based on the above examples and whether or not the permit action would require meeting the requirements of the RSG.

Example 9: An applicant makes changes to a facility which is covered under a PBR. The changes being made do not require submittal of an amended registration or a permit action. However, the applicant should consider the changes being made based on the above examples, the RSG document, and whether or not any updated emission calculations would require compliance with the RSG.

7. Does a facility need to follow the RSG when applying to change the permit type for which a facility operates under?

It would depend on whether there were any other additional changes requested in the permit application. For example: If an applicant applies to change the coverage of a facility from an individual operating permit to a general permit, and no other changes are being requested, then the facility is not required to update emissions or to follow the RSG. However, if the applicant is requesting additional changes (e.g., updating emissions, adding an engine), the applicant should refer to the RSG document and any other questions in this document.