Form Series D Instructions – Emission Unit and Stationary Source Emissions Summary

Form Series D provides forms for summarizing emissions from individual emission units and the stationary source. The following forms are included in this series.

Form Number	Description	Page Number
D1	Form D1 is the Emission Unit Summary of Emissions form. Use this form to represent emissions from the emissions units defined in Form Series B.	2
D2	Form D2 is the Stationary Source Emission Summary form. Use this form to summarize the emissions from all the individual D1 forms.	3

The owner/operator must complete a D1 form for each of the emissions units described in Form Series B (except as described in the next paragraph). On Form D1, the emissions units are defined by the emissions units and control devices described in Form Series B and Form Series C, respectively. However, do not include emissions from any nonroad engines located at the source on Form D1 or Form D2 as these emissions are not used to determine the major source status of a stationary source (18 AAC 50.100) and are not included in the stationary source potential emissions for fees. Note that if multiple operating scenarios exist as indicated by Form A3 for an emission unit or units, a D1 form should be completed for each operating scenario. Supporting documentation showing calculation methodology, emission factors, and all assumptions must accompany the application.

The Department will accept D1 and D2 form data submitted in spreadsheet format alone (information not transcribed to the Series D forms). However, all information required by the forms must be included in the spreadsheet. Supporting documentation showing calculation methodology, emission factors, and all assumptions must accompany the application.

Whether the Series D forms or only the spreadsheets are submitted, all calculations must be developed in Excel and submitted with the permit application in both printed form and as electronic files so that the Department may review the underlying equations and calculations supporting the results.

FORM D1 - EMISSION UNIT SUMMARY OF EMISSIONS

For each emissions unit, complete one Emission Unit Summary of Emissions, Form D1 for each emission unit/operating scenario combination.

The Department will accept D1 form data submitted in spreadsheet format alone (information not transcribed to the Series D forms). However, all information required by the forms must be included in the spreadsheet. Supporting documentation showing calculation methodology, emission factors, and all assumptions must accompany the application.

Whether the Series D forms or only the spreadsheets are submitted, all calculations must be developed in Excel and submitted with the permit application in both printed form and as electronic files so that the Department may review the underlying equations and calculations supporting the results.

1. Enter the Emission Unit ID Number.
2. Briefly describe the emission unit (e.g., boiler, dryer, etc.).
3. Enter the identification number(s) of the operating scenario(s) for which the owner/operator is defining emissions.
4. Note if the emission unit is a significant or insignificant unit. If the unit is insignificant, provide the regulatory basis for insignificance under 18 AAC 50.326(e – i).
5. Define the emissions unit:
   - Enter the identification number(s) of the control device(s) associated with the emission unit. (The identification numbers are assigned in Form Series C.)
6. Enter the annual tons of emissions of each criteria pollutant (NO_X, CO, PM-10, SO_2, VOC and CO_2e). All Hazardous Air Pollutants (HAPs) emitted by the emission unit are to be identified and entered below the criteria pollutants. If the HAP is also a VOC, *do not* include the individual HAP emissions in the VOC total emissions. This will prevent double-counting of VOC emissions.

   The owner/operator must provide supporting calculations for the emissions from each emission unit attached to the permit application. The supporting calculations must identify all emission factors used, assumptions made (e.g., hours of operation, applicable controls), and any other information necessary to describe the methodology used by the owner/operator to estimate emissions. All calculations must be developed in Excel, and submitted with the permit application in electronic format.

   Descriptions of the three emission calculations required by Form D1 are provided below. This emission information is required in order to assess compliance with regulatory requirements.

   - **Expected Actual Annual Emissions (after controls/limitations {if any})**: Emission calculation based upon expected actual annual operating hours with use of any applicable controls and implementation of any limitations required by an air permit (e.g., the emission unit may be permitted to operate 8,760 hours per year, but is only expected to operate 500 hours per year; therefore, the expected actual annual emissions after controls/limitations would be based on operation of the emission unit for 500 hours per year.) This information is not required for insignificant emission units, except those that are insignificant units on an emission rate basis under 18 AAC 50.326(e) and potential annual emissions exceed 80% of the thresholds in 18 AAC 50.326(e)(1-15).
   - **Potential Annual Emissions (*before* controls/limitations)**: Emission calculation based upon 8,760 hours of operation of the emission unit, and without factoring in any emission controls or permit limitations. For emission units with only one operating scenario, but permitted for more than one method of operation (e.g., natural gas/fuel oil dual-fuel boiler), the potential annual emissions (before controls/limitations) should include the emissions from the method with greater potential to emit (e.g. fuel oil combustion emissions from a dual-fuel boiler).
   - **Potential Annual Emissions (*after* controls/limitations)**: Emission calculation based upon the permitted potential of the emission unit (e.g., a boiler is limited by an Alaska Title I owner requested limit to combust no more than 500,000 gallons of no. 2 fuel oil annually; therefore, the potential annual emissions after controls/limitations would be based on the emissions from combusting 500,000 gallons of no. 2 fuel oil in the boiler.) For emission units with only one operating scenario, but permitted for more than one method of

operation (e.g., natural gas/fuel oil dual-fuel boiler), the potential annual emissions (before controls/limitations) should include the emissions from the method with greater potential to emit (e.g., fuel oil combustion emissions from a dual-fuel boiler).

FORM D2 - STATIONARY SOURCE EMISSION SUMMARY

Complete one Stationary Source Emission Summary, Form D2 for the stationary source. Note that the first page of Form D2 is for significant sources and the second page is for insignificant sources. (More than one Form D2 is required for stationary sources/emission units with more than one operating scenario.)

The Department will accept D2 form data submitted in spreadsheet format alone (information not transcribed to the Series D forms). However, all information required by the forms must be included in the spreadsheet. Supporting documentation showing calculation methodology, emission factors, and all assumptions must accompany the application.

Whether the Series D forms or only the spreadsheets are submitted, all calculations must be developed in Excel and submitted with the permit application in both printed form and as electronic files so that the Department may review the underlying equations and calculations supporting the results.

1. Enter the Emission Unit IDs of all emission units included in this Form D2. All emission units should be included. Include significant units on page 1 of D2, and insignificant units on page 2.
2. Enter the applicable Operating Scenario ID number.
3. Enter the sum of the annual tons of emissions of each criteria pollutant (NO_X, CO, PM-10, SO_2, VOC, and CO_2e) from each emission unit – significant and insignificant separately (all Form D1's). All Hazardous Air Pollutants (HAPs) with emissions in excess of 0.1 tons per year are to be identified and entered below the criteria pollutants. Include the HAP total for the stationary source where indicated. If the HAP is also a VOC, *do not* include the individual HAP emissions in the VOC total emissions. This will prevent double-counting of VOC emissions.

   The stationary source expected actual annual emissions after controls/limitations, potential annual emissions before controls/limitations, and potential annual emissions after controls/limitations are the sum of these emissions from all emission units for which a Form D1 was completed. For emission units for which there is more than one operating scenario (i.e., more than one Form D1), the owner/operator may either complete more than one Form D2 to represent the multiple operating scenarios *or* include only the Form D1's representing the greater annual emissions.

   The owner/operator must provide supporting calculations for the emissions from each emission unit attached to the permit application. The supporting calculations must identify all emission factors used, assumptions made (e.g., hours of operation, applicable controls), and any other information necessary to describe the methodology used by the owner/operator to estimate emissions. All calculations must be developed in Excel, and submitted with the permit application in electronic format.

4. Enter the Pollutant Emission Status for each criteria pollutant and the stationary source HAP total indicating whether the stationary source is a major or minor source of that pollutant.

FORM D1
Emission Unit Summary of Emissions

Permit Number: _____

1.	Emission Unit ID Number	
2.	Emissions Unit description	
3.	Operating Scenario ID number	
4.	Is this a significant or insignificant unit? (If insignificant, provide basis for insignificance)	

5. Emission control devices:

Control Device ID(s) from Form Series C

6. Pollutants/Emissions:

Pollutant Name	Expected Actual Annual Emissions[1] (after controls/ limitations) (*tons/year*)	Potential Annual Emissions (before controls/limitations) (*tons/year*)	Potential Annual Emissions (after controls/limitations) (*tons/year*)
NO_X			
CO			
PM-10			
SO_2			
VOC			
CO_2e			
(List individual HAPs)			

[1] For significant emission units. For insignificant emission units, expected actual annual emissions are only required if the unit is an insignificant unit on an emission rate basis under 18 AAC 50.326(e) and potential annual emissions exceed 80% of the thresholds in 18 AAC 50.326(e)(1-15).

FORM D2

Stationary Source Emission Summary – Significant Emission Units

Permit Number: _____

1.	Applicable Emission Unit IDs (list)	
2.	Applicable Operating Scenario ID number	

3. Pollutants/Emissions:

Pollutant Name	Pollutant Emission Status (Major / Minor)	Expected Actual Annual Emissions (after controls/ limitations) (*tons/year*)	Potential Annual Emissions (before controls/limitations) (*tons/year*)	Potential Annual Emissions (after controls/limitations) (*tons/year*)
NO_X				
CO				
PM-10				
SO_2				
VOC				
HAP Total				
CO_2e				
(List individual HAPs)				

FORM D2

Stationary Source Emission Summary – Insignificant Emission Units

Permit Number: _____

Pollutants/Emissions:

Pollutant Name	Pollutant Emission Status (Major / Minor)	Expected Actual Annual Emissions[1] (after controls/ limitations) (*tons/year*)	Potential Annual Emissions (before controls/limitations) (*tons/year*)	Potential Annual Emissions (after controls/limitations) (*tons/year*)
NO_X				
CO				
PM-10				
SO_2				
VOC				
HAP Total				
CO_2e				
(List individual HAPs)				

[1] For insignificant emission units, expected actual annual emissions are only required if the unit is an insignificant unit on an emission rate basis under 18 AAC 50.326(e) and potential annual emissions exceed 80% of the thresholds in 18 AAC 50.326(e)(1-15)