Greenhouse Gas Reporting Program

XML Reporting Instructions for Subpart D – Electricity Generation

United States Environmental Protection Agency
Climate Change Division
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These instructions explain how to report the required data for the applicable regulations. Owners and operators of units should refer to the applicable regulations for information about what data are required to be reported.

EPA has finalized a rule that defers the deadline for reporting data elements used as inputs to emission equations for direct emitters. (See http://www.epa.gov/climatechange/emissions/notices.html for a pre-publication version of the rule). In accordance with the rule, e-GGRT is not currently collecting data used as inputs to emission equations.

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I.   Introduction

The U.S. Environmental Protection Agency's (EPA's) electronic greenhouse gas reporting tool (e-GGRT) extensible markup language (XML) Reporting Schema contains all of the data elements needed to comply with the Greenhouse Gas Reporting Program (GHGRP) beginning with the 2010 data collection year. The XML schema defines expected data elements and attributes, allowable data formats for each data element, and the hierarchical structure and sequence in which data elements must appear in the XML file. Similar to an architectural blueprint that describes the structural design of a house, an XML schema describes the structural design of an XML file. In some cases, it also defines which elements are optional and which are required and the maximum number of occurrences allowed for each element.

The e-GGRT XML schema is made up of a root data element (GHG) and complex and simple data elements. A simple element is a single piece of data. A complex element is a group of simple elements which are logically grouped together. The root data element is the base of the XML schema.

The schema's structure can be thought of as a family tree. The elements are related to each other in parent-child relationships. The root element is the parent element of the entire schema. Complex elements are children of the root element, and complex elements can also be children of other complex elements.

The XML upload method may be used for reporting a facility or supplier's annual GHG data; however, the following actions can only be performed using the e-GGRT web forms:

- User, facility and supplier registration
- Certificate of Representation and Notice of Delegation signing
- Facility representative and agent changes
- Facility and supplier address changes
- Notice of intent to not submit an annual GHG report

All XML files submitted to e-GGRT must be well formed and will be accepted only if they conform to the current version of the e-GGRT XML schema.

An XML submission must only contain GHG data for a single facility or supplier. All data for a facility or supplier must be submitted in a single file as a complete report and must include all of the relevant Subparts. It is not possible to submit a subset of any portion of a facility's data to add, delete, correct or update. The entire report must be resubmitted to make any modification at all. Each subsequent submission for the same facility replaces all of the previously submitted data.

The e-GGRT XML schema contains enumerated lists of the units of measures for some data elements and allowable values for some data elements. For rules regarding the unit of measure or allowable values for a specific data element, please refer to the appropriate Data Element Definitions table.

The e-GGRT XML Reporting Schema is available for download at the e-GGRT help website: http://www.ccdsupport.com/confluence/display/help/XML+Reporting+Instructions. The zip file contains:

- **GHG_Final.xsd and Included Files**
- **SchemaChanges.xlsx**

Table 1
Reporting Numbers

Number Format	Description
Rounding	• CO_2e and CO_2 emissions data expressed in metric tons should be rounded to one decimal place. This should be done regardless of the level of data collection (e.g., unit-level, facility-level). Quantities less than 0.05 metric tons would round to 0.0 and be reported as such. Quantities greater than or equal to 0.05 metric tons would round up to 0.1 and be reported as such. • CH_4 emissions data expressed in metric tons should be rounded to two decimal places. • N_2O emissions data expressed in metric tons should be rounded to three decimal places. • Emissions data for all GHGs other than CO_2, N_2O and CH_4 expressed in metric tons should be rounded to the fourth digit to the right of the decimal (one tenth of a kilogram, or 1 ten thousandth of a metric ton). This rounding should be applied regardless of the level of data collection (unit, facility, etc.). • Other (non-emissions) quantitative data reported by the user (e.g., a monthly HHV sample result, an annual production quantity) will not need to be rounded. • In the case of aggregation/roll-ups, those calculations should be performed on the rounded values.
Percentages	If a value must be reported as a percentage, then the number should be within the range of 0 to 100 (percent), e.g. 85.5% should be reported as 85.5.
Fractions	If a value must be reported as a decimal fraction, then the number should be within the range of 0 and 1, e.g., 1/4 should be reported as 0.25. Leading zeroes are optional.

Key XML Terms

- XML: A markup language for documents containing structured information. The XML specification defines a standard way to add markup to documents. Its primary purpose is to facilitate the sharing of structured data across different information systems, particularly via the internet.

- XML Schema: An XML schema describes the structure of an XML document. The schema also defines the set of rules to which the XML document must conform in order to be considered "valid".

- XML file: A file containing data organized into a structured document using XML markup.

- Data Element: An XML data element is used for storing and classifying data in an XML file. Opening and closing tags represent the start and end of a data element. An opening tag looks like <elementName>, while a closing tag has a slash that is placed before the element's name </elementName>. The following example shows how to report the facility's identification number: <FacilitySiteIdentifier>23222</FacilitySiteIdentifier>. The information shaded in blue represents the data element's value.

  If a data element does not contain a value, then a single empty tag name may be used. An empty tag has a slash placed after the element's name <FacilitySiteIdentifier/>. **Note:** If you do not intend to report a value for a particular data element, then it is recommended that you do not include the data element in the XML file.

- **Attribute:** An XML attribute contains additional information about a specific data element. An attribute for a data element is placed within the opening tag. The syntax for including an attribute in an element is <elementName attributeName="value">. For example, <TotalCH4CombustionEmissions massUOM="Metric Tons">.

- **Root/Parent/Child Element:** The schema's structure can be thought of as a family tree. At the top of the tree is some early ancestor and at the bottom of the tree are the latest children. With a tree structure you can see which children belong to which parents and many other relationships.

  XML data elements are sometimes referenced in terms of how they relate to each other, e.g., parent-child relationships, within the schema's tree structure, also known are hierarchy. The top of the XML tree is considered the root – it is the parent to all data elements within the schema. In the example below, "GHG_Unit_Details" is the root, and just like in many other family trees, there is more than one item with the same name (e.g., "Unit_ID"). The easiest way to distinguish these items is by referencing them in terms of their parent-child relationships, e.g., NoCEMS /Unit_ID vs. CEMS/Unit_ID.

Figure 1
Example of an XML Tree
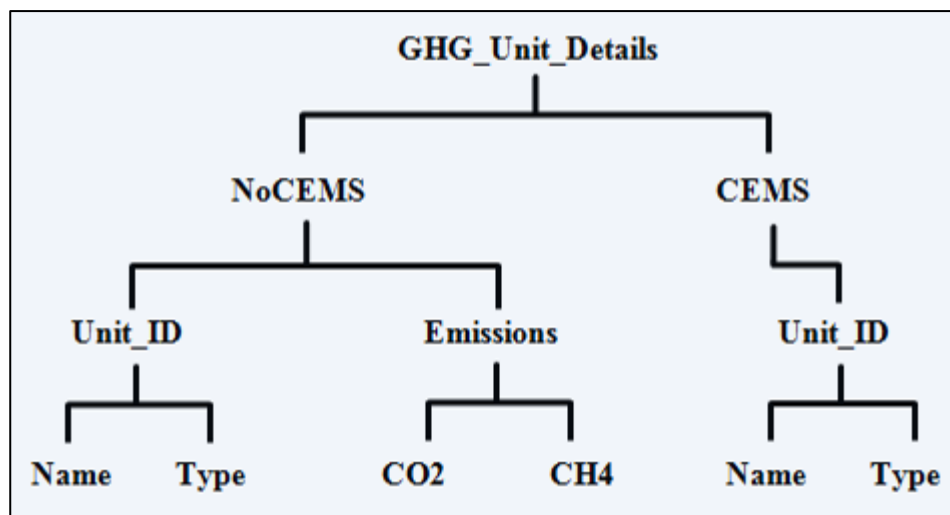
This document provides a step-by-step description of how to report emissions data using the XML schema. Please note the following:

- **Non-applicable data elements should not be included in the facility's XML file.** The schema contains many data elements, some of which may not be applicable to XML reporters in general or to a particular situation. If a data element is not referenced in the instructions (definition tables), then **do not** report or include it in the facility's XML file.

- **Data elements must be reported in a specific order.** The figures and tables in this document depict the specific sequence in which data elements must be arranged in the facility's XML file in order to produce a well-formed XML report.

- **Enumerations are case sensitive.** Many data elements have a defined set of allowable values, also known as enumerations. Values for enumerations must be entered exactly as they are defined within the schema (including punctuation marks) in order to be accepted by schema validation. See the definition tables for a complete list of enumerations.

- **Schema diagrams depict the hierarchy (or tree structure).** The primary purpose of the schema diagrams is to indicate the sequence in which data elements must appear within the facility's XML file and to identify the data elements that are required (must be reported) and conditionally required (see last bullet). Required data elements are boxed in red and conditionally required data elements are noted.

- **Definition tables provide details for required and conditionally required data elements.** The tables are designed to provide unique instructions for reporting a given data element, including the list of enumerations and required units of measure, if defined. As noted above, there are some data elements in the schema that are not applicable to XML reporters or to a particular situation. For example, the "OverrideIndicator" data element is used solely by e-GGRT to indicate that the web form reporter chose to override the system's calculated value with their own. These non-applicable data elements **are not** included in the definition tables. If a data element is not referenced in a definition table, then **do not** report or include it in the facility's XML file.

- **Commonly used data types are not depicted in the schema diagrams nor listed separately in the definition tables.** The schema diagrams display almost every data element in the schema except those that are associated with the three most commonly occurring data types:

  o Calculated Details
  o Measurement Details
  o Unit Identification Details

  Once defined, these data types (static collection of data elements) are then associated as children to every data element in the schema containing a measured or calculated value or unit details. These child data elements do not appear in the diagrams and are not listed on separate rows in the definition tables in order reduce their redundancy. They are however, referenced in the tables in the description of their parent data element. See Figures 2-4 and Tables 2-4.

- **Some data elements are conditionally required.** Data elements which are conditionally required are noted in the schema diagrams and the data element definitions tables. If your facility meets the condition specified for the data element, then the data element is required and you must report it in the facility's XML file. If your facility does not meet the condition specified for the data element, then **do not** include the data element in the facility's XML file. If a parent element is not required, then **do not** include any of its child data elements in the facility's XML file.

Figure 2
Calculated Details Data Type Schema Diagram
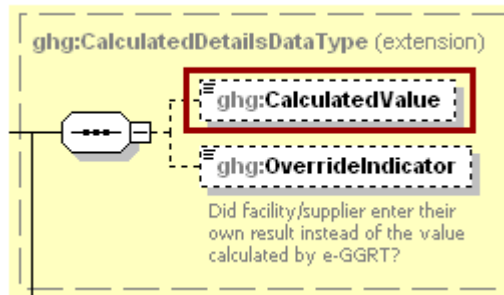
Note: Data elements boxed in red are required.

Table 2
Calculated Details Data Element Definitions

Data Element Name	Description
CalculatedDetailsDataType	
CalculatedValue	Calculated value (decimal).
OverrideIndicator	**Note:** Do not include this data element in the facility's XML file because it only applies to web form reporters. It is a flag set by e-GGRT to indicate that the system-calculated value was overridden with the web form reporter's value.

Figure 3
Measurement Details Data Type Schema Diagram
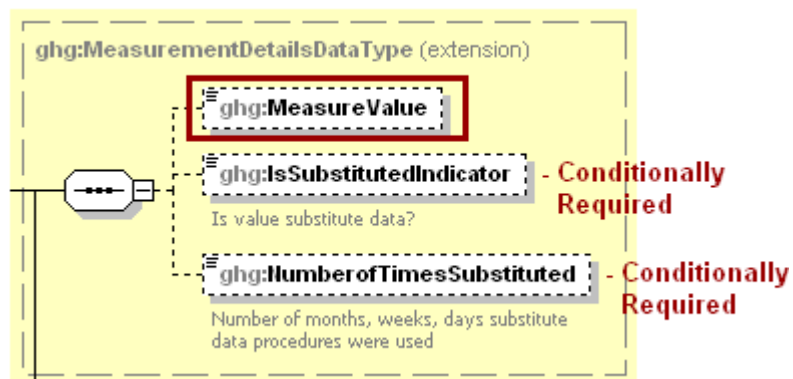
Note: Data elements boxed in red are required. Please see page 4 of this document for more information on conditionally required elements.

Table 3
Measurement Details Data Element Definitions

Data Element Name	Description
MeasurementDetailsDataType	
MeasureValue	Measured value (decimal).
IsSubstitutedIndicator	An indication (Y/N) that the measure value contains substituted data. **Note:** Do not include this data element in your XML file unless noted in the instructions for the particular measured value.
NumberofTimesSubstituted	The number (integer) of days, months, weeks or hours in the reporting year that missing data procedures were followed. **Note:** Do not include this data element in your XML file unless noted in the instructions for the particular measured value.

Figure 4
Unit Identification Details Data Type Schema Diagram
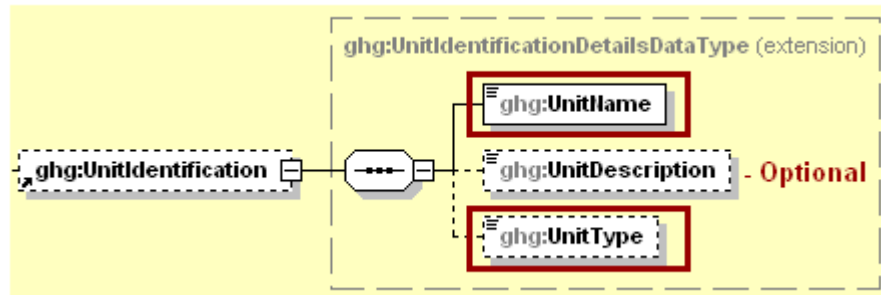
Note: Data elements boxed in red are required.

Table 4
Unit Identification Details Data Element Definitions

Data Element Name	Description
UnitIdentificationDetails	
UnitName	A unique name (ID) for each unit so that the data for different units can be recorded, maintained and retrieved clearly.
UnitDescription	Optional brief description of the unit.
UnitType	The type of unit. The list of allowable values varies. For more information, see the instructions for the specific unit process to be reported. For example, if reporting Flare Gas details, the unit type would be "Flare".

The XML symbol "1..∞" shown in Figure 5 means that the parent element is "unbounded" so that multiple instances of the parent element can be reported. XML Excerpt 1 shows an example of reporting multiple instances of a parent element.

Figure 5
"Unbounded" Symbol in Schema Diagram
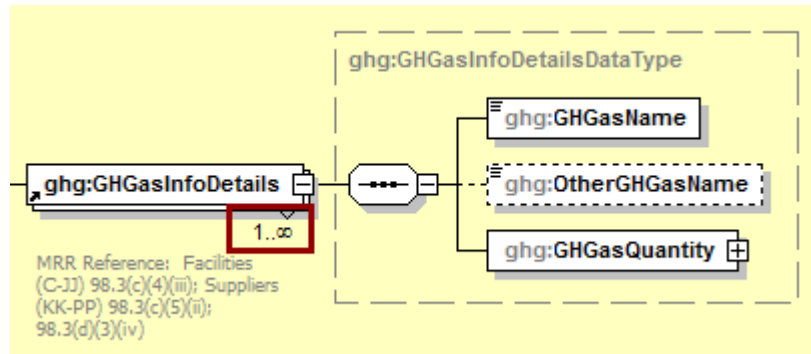
XML Excerpt 1
Example for "Unbounded" Parent Element

```
<ghg:GHGasInfoDetails>
        <ghg:GHGasName>Carbon Dioxide </ghg:GHGasName>
        <ghg:GHGasQuantity massUOM="Metric Tons">
                <ghg:CalculatedValue>384781.2</ghg:CalculatedValue>
        </ghg:GHGasQuantity></ghg:GHGasInfoDetails>
<ghg:GHGasInfoDetails>
<ghg:GHGasInfoDetails>
        <ghg:GHGasName>Methane</ghg:GHGasName>
        <ghg:GHGasQuantity massUOM="Metric Tons">
                <ghg:CalculatedValue>4004.12</ghg:CalculatedValue>
        </ghg:GHGasQuantity></ghg:GHGasInfoDetails>
<ghg:GHGasInfoDetails>
```

The XML symbol for a logical "Or" shown in Figure 6 means that **only one** of the data elements following the symbol can be reported for the current instance of the parent element.

Figure 6
Logical "Or" Symbol in Schema Diagram
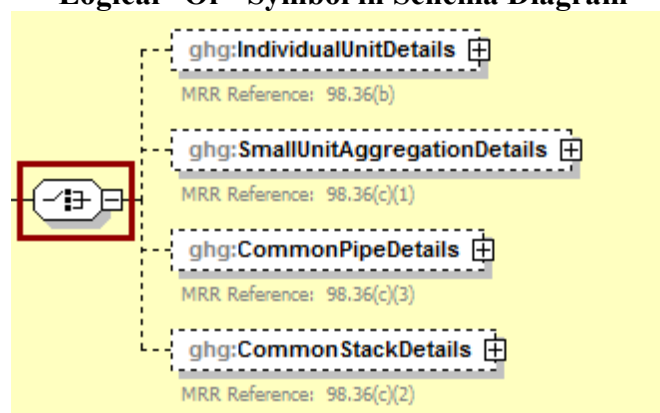
II.   Summary of Changes

Schema Changes: There were no changes to the GHG XML schema in relation to Subpart D (GHG_SubPartD_v2.0.xsd) for reporting year 2011.

Document Changes:

3-9-2012 – Modified some of the emissions values within the XML excerpts to emphasize the rounding rules, see Table 1.

3-15-2012 – Modified some of the emissions values within the XML excerpts to emphasize the rounding rules. Added ParentCompanyDetails to sample XML document.

III. Subpart D Overview

This section provides a step-by-step description of how to report emissions data from electricity generation sources as required by Subpart D of the GHGRP using the XML schema.

Figure 7
Subpart D Reporting Diagram
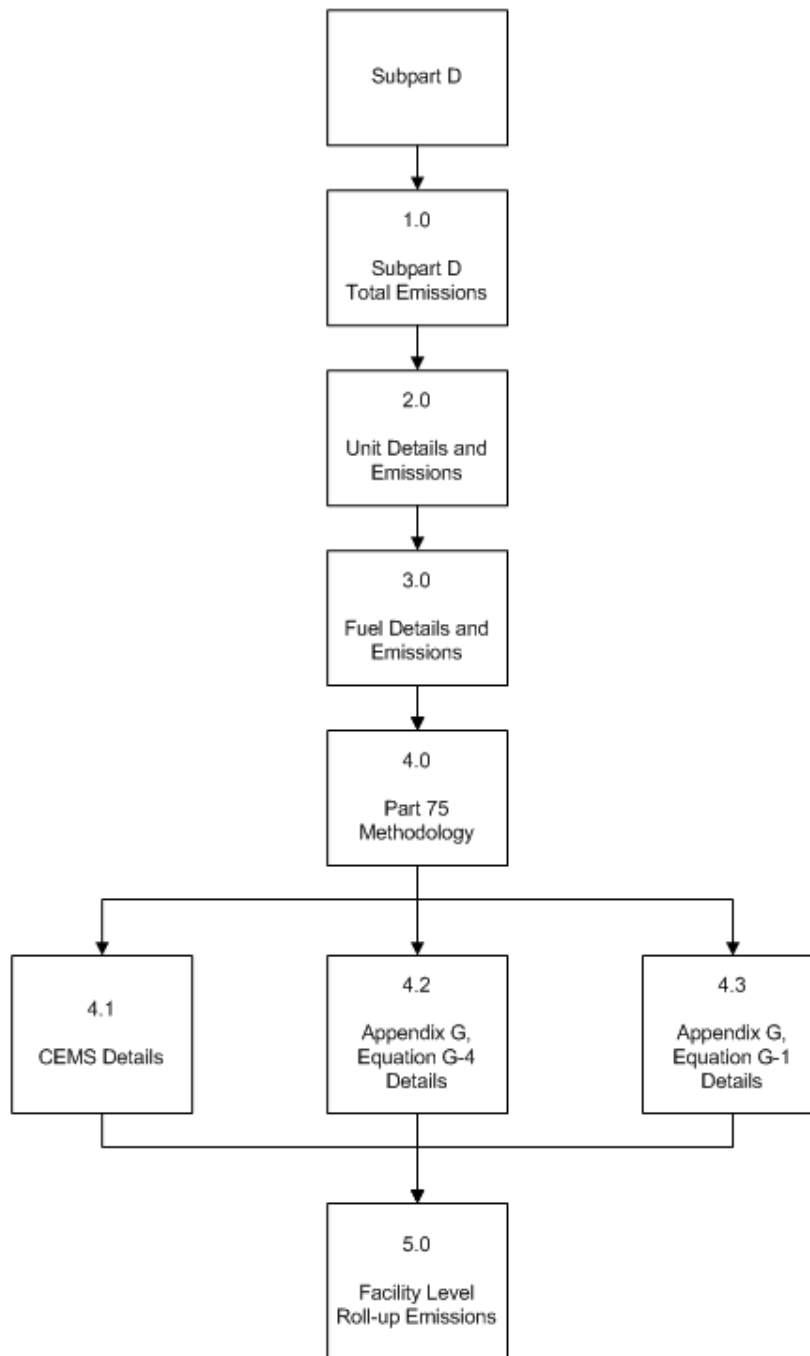
The electricity generation source category comprises electricity generating units that are subject to the requirements of the Acid Rain Program and any other electricity generating units that are required to monitor and report to EPA CO_2 mass emissions year-round according to 40 CFR part 75 (e.g. units subject to RGGI). This source category does not include portable equipment, emergency equipment or emergency generators, as defined in §98.6.

The XML schema includes the following areas for reporting for Subpart D, as displayed in the reporting diagram:

1.0   Subpart D Total Emissions: includes the total emissions for carbon dioxide and CH_4 and N_2O combustion emissions from process units.

2.0   Unit Details and Emissions: includes information on unit identification, methodology used and start and end dates, whether the unit is subject to the Acid Rain Program and CO_2 emissions.

3.0   Fuel Details and Emissions: includes information on fuel type and CH_4 and N_2O emissions.

4.0   Part 75 Methodology: includes additional information to report based on which methodology was used for the unit.

   4.1 CEMS Details

   4.2 Appendix G, Equation G-4 Details

   4.3 Appendix G, Equation G-1 Details

5.0   Facility Level Roll-up Emissions: includes information on how to report total emissions for CO_2e (excluding biogenic CO_2) and biogenic CO_2 from Subpart D at the facility level.

If your facility is subject to reporting under Subpart D (Electricity Generation), EPA recommends that you also consider the following source categories in your facility applicability determination: Subpart C (General Stationary Fuel Combustion) and Subpart PP (Suppliers of Carbon Dioxide). These source categories are only provided as suggestions - additional Subparts may be relevant for a given facility/supplier and not all listed Subparts are relevant for all facilities/suppliers.

Figure 8
Subpart D Schema Diagram
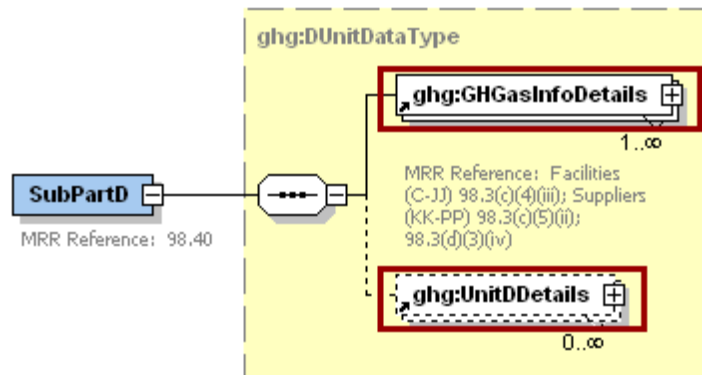
Note: Data elements boxed in red are required.

1.0   Subpart D Total Emissions

Greenhouse gas information details comprise a collection of data elements to report the total annual emissions of each greenhouse gas (GHG) listed in Table A-1 of 40 CFR 98 Mandatory Reporting of Greenhouse Gases reported under Subpart D, expressed in metric tons.

Figure 9
Greenhouse Gas Information Details Schema Diagram
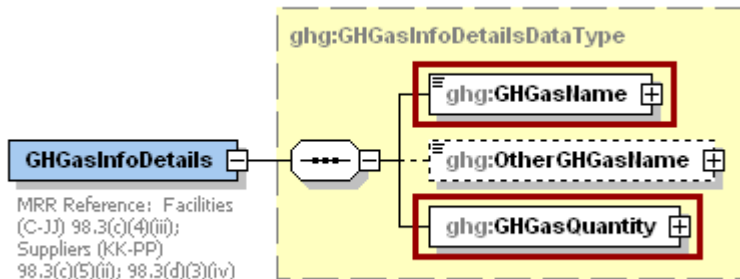
Note: Data elements boxed in red are required.

For Subpart D, report total emissions for biogenic carbon dioxide (CO_2), CO_2 (excluding biogenic CO_2), methane (CH_4) and nitrous oxide (N_2O). For greenhouse gas quantity, report the calculated value and mass unit of measure (Metric Tons) only according to the following guidelines:

1) Total CO_2 emissions (excluding biogenic CO_2): Add the annual CO_2 emissions in metric tons minus the total biogenic CO_2 mass emissions in metric tons for each unit.
2) Total biogenic CO_2 emissions: Add the total biogenic CO_2 mass emissions in metric tons for each unit.
3) Total CH_4 emissions: Divide the CO_2 equivalent value for annual CH_4 emissions in metric tons by the Global Warming Potential for CH_4 (21) for each fuel used for each unit, and add the result.
4) Total N_2O emissions: Divide the CO_2 equivalent value for annual N_2O emissions in metric tons by the Global Warming Potential for N_2O (310) for each fuel used for each unit, and add the result.

Note: You must follow the rounding rules found in Table 1.

Table 5
Greenhouse Gas Information Details Data Element Definitions

Data Element Name	Description
GHGasInfoDetails	**Parent Element:** A collection of data elements containing the total annual emissions of each greenhouse gas (GHG) listed in Table A-1 of 40 CFR 98 Mandatory Reporting of Greenhouse Gases reported under this Subpart, expressed in metric tons.

Data Element Name	Description
GHGasName	Specify the name of the GHG. See list of allowable values: Carbon Dioxide Biogenic Carbon dioxide Methane Nitrous Oxide
GHGasQuantity	A collection of data elements that quantify the annual emissions from this source category. Report the value in the child data element **CalculatedValue**. Set the units of measure to "Metric Tons" in the attribute **massUOM**.

XML Excerpt 2
Example for Greenhouse Gas Information Details

```
<ghg:SubPartD>
        <ghg:GHGasInfoDetails>
                <ghg:GHGasName>Biogenic Carbon dioxide</ghg:GHGasName>
                <ghg:GHGasQuantity massUOM="Metric Tons">
                        <ghg:CalculatedValue>1000.2</ghg:CalculatedValue>
                </ghg:GHGasQuantity>
        </ghg:GHGasInfoDetails>
        <ghg:GHGasInfoDetails>
                <ghg:GHGasName>Methane</ghg:GHGasName>
                <ghg:GHGasQuantity massUOM="Metric Tons">
                        <ghg:CalculatedValue>47.62</ghg:CalculatedValue>
                </ghg:GHGasQuantity>
        </ghg:GHGasInfoDetails>
        <ghg:GHGasInfoDetails>
                <ghg:GHGasName>Nitrous Oxide</ghg:GHGasName>
                <ghg:GHGasQuantity massUOM="Metric Tons">
                        <ghg:CalculatedValue>0.323</ghg:CalculatedValue>
                </ghg:GHGasQuantity>
        </ghg:GHGasInfoDetails>
        <ghg:GHGasInfoDetails>
                <ghg:GHGasName>Carbon Dioxide</ghg:GHGasName>
                <ghg:GHGasQuantity massUOM="Metric Tons">
                        <ghg:CalculatedValue>9000.8</ghg:CalculatedValue>
                </ghg:GHGasQuantity>
        </ghg:GHGasInfoDetails>
```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas emissions data.

2.0   Unit Details and Emissions

Figure 10
Units D Details Schema Diagram
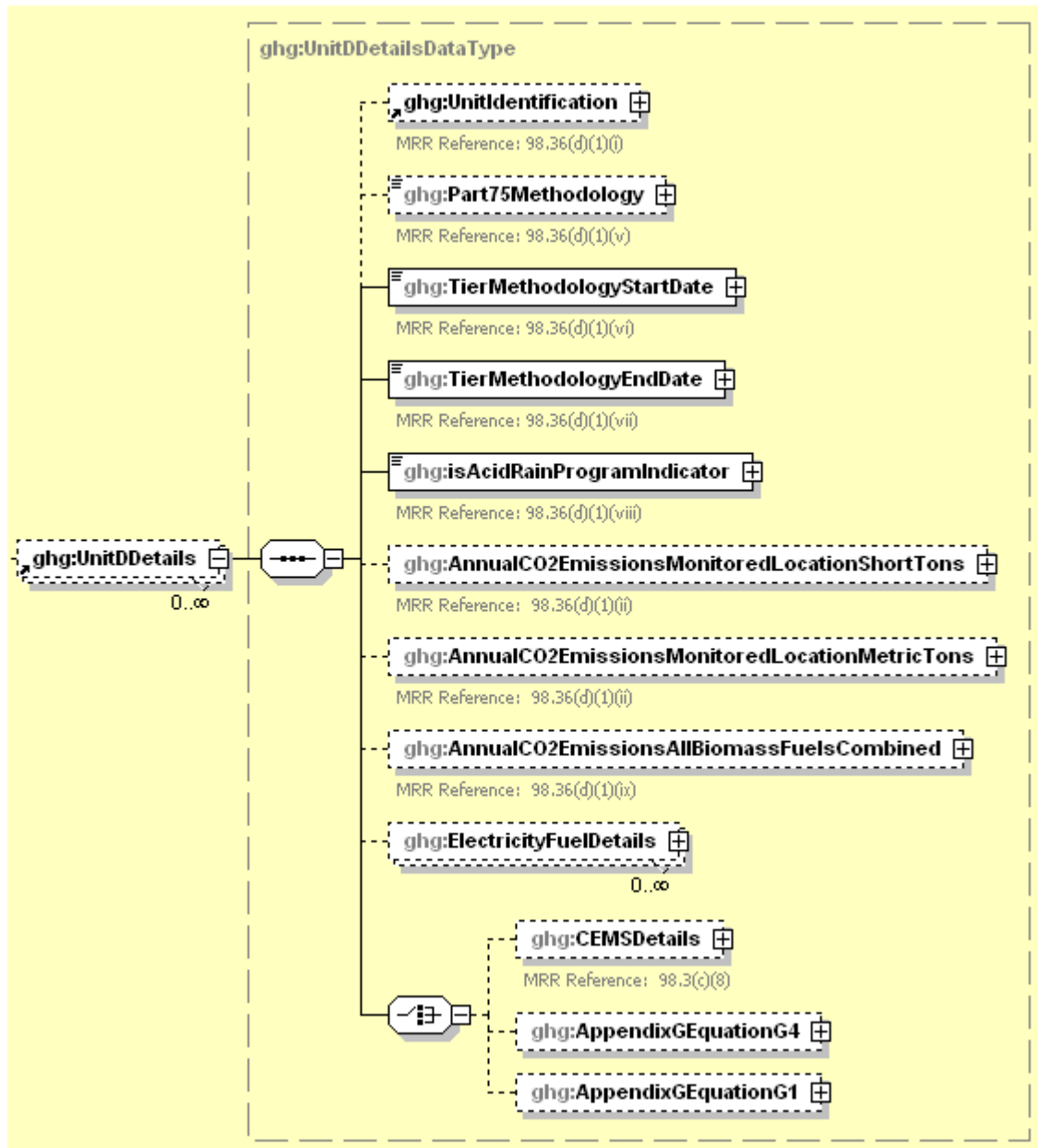
For each unit, stack or pipe at your facility, Subpart D requires the following information:

- A unique name or identifier (e.g., a unit ID number) for the monitoring location (unit, stack or pipe). The ID for this monitoring location should match the ID reported under §75.64 [98.36(d)(1)(i)].
- An optional description or label.

- The Part 75 methodology used to determine the CO_2 mass emissions [98.36(d)(1)(v)]:
  - ○ CEMS
  - ○ Appendix G, Equation G-1
  - ○ Appendix G, Equation G-4
  - ○ Low Mass Emissions (LME) (§75.19(c)(4)(iii))
- The methodology start date and end date [98.36(d)(1)(vi)-(vii)].
- An indication of participation in the Acid Rain Program [98.36(d)(1)(viii)].

For each unit, stack or pipe Subpart D requires the facility to provide the following aggregated emissions data:

- The total annual CO_2 emissions at the monitored location in short tons (exactly as reported under Part 75) [98.36(d)(1)(ii)].
- The total annual CO_2 emissions at the monitored location in metric tons (divide the CO_2 emissions in short tons by 1.1023 to obtain the CO_2 emissions value in metric tons) [98.36(d)(1)(ii)].
- The total annual biogenic CO_2 emissions. This includes CO_2 emissions from the combustion of biomass fuels and the biogenic fraction of CO_2 emissions from fuels with a mixed biogenic and fossil component (i.e. MSW or tires) [98.36(d)(1)(ix)].

Figure 11
Unit Details and Emissions Schema Diagram
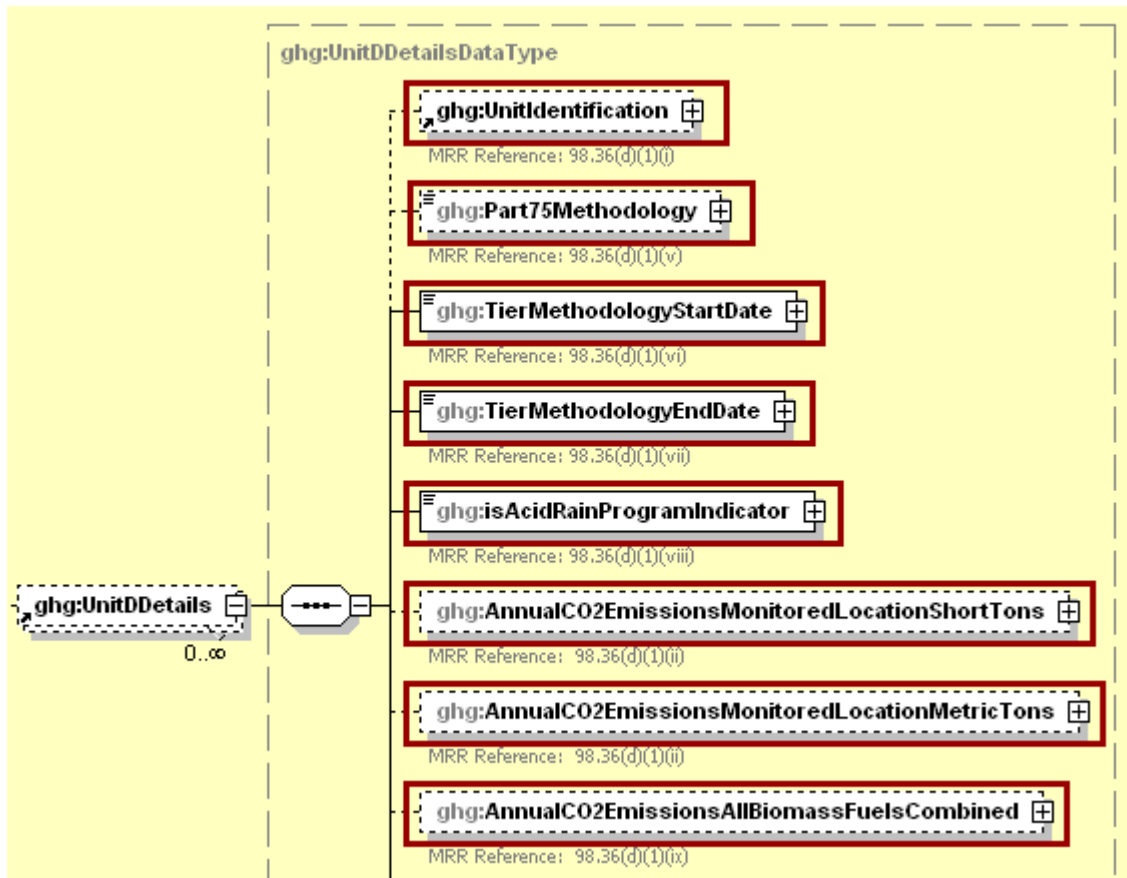
Note: Data elements boxed in red are required.

Table 6
Unit Details and Emissions Data Element Definitions

Data Element Name	Description
UnitDDetails	**Parent Element:** A collection of data elements containing details regarding each unit, stack or pipe reporting under Subpart D.
UnitIdentification	A collection of data elements containing the identity of each unit, stack or pipe reported under Subpart D. Report a unique unit name (ID) in the child data element **UnitName**, an optional brief description in the child data element **UnitDescription** and the type of unit in the child data element **UnitType**: "Electricity Generator". Use the exact same unit, common stack, common pipe or multiple stack identification numbers that represent the monitored locations (e.g., 1, 2, CS001, MS1A) that are reported under §75.64.
Part75Methodology	The Part 75 methodology used to determine the CO_2 mass emissions. See list of allowable values: CEMS Appendix G, Equation G-1 Appendix G, Equation G-4 LME (§75.19(c)(4)(iii))
TierMethodologyStartDate	The methodology start date (YYYY-MM-DD).
TierMethodologyEndDate	The methodology end date (YYYY-MM-DD).
isAcidRainProgramIndicator	An indication (Y/N) of whether the unit is subject to the Acid Rain Program.
AnnualCO2EmissionsMonitoredLocationShortTons	The total annual CO_2 emissions at the monitored location in short tons. Report the value in the child data element **CalculatedValue**. Set the units of measure to "Short Tons" in the attribute **massUOM**.
AnnualCO2EmissionsMonitoredLocationMetricTons	The total annual CO_2 emissions at the monitored location in metric tons. Report the value in the child data element **CalculatedValue**. Set the units of measure to "Metric Tons" in the attribute **massUOM**.
AnnualCO2EmissionsAllBiomassFuelsCombined	The total annual biogenic CO_2 mass emissions. Report the value in the child data element **CalculatedValue**. Set the units of measure to "Metric Tons" in the attribute **massUOM**.

XML Excerpt 3
Example for Unit Details and Emissions

```
<ghg:UnitDDetails>
        <ghg:UnitIdentification>
                <ghg:UnitName>003-AG-Eq G-4</ghg:UnitName>
                <ghg:UnitDescription>Appendix G, Eq. G-4 unit</ghg:UnitDescription>
                <ghg:UnitType>Electricity Generator</ghg:UnitType>
        </ghg:UnitIdentification>
        <ghg:Part75Methodology>Appendix G, Equation G-4</ghg:Part75Methodology>
        <ghg:TierMethodologyStartDate>2011-01-01</ghg:TierMethodologyStartDate>
        <ghg:TierMethodologyEndDate>2011-12-31</ghg:TierMethodologyEndDate>
        <ghg:isAcidRainProgramIndicator>Y</ghg:isAcidRainProgramIndicator>
        <ghg:AnnualCO2EmissionsMonitoredLocationShortTons massUOM="Short Tons">
                <ghg:CalculatedValue>3307.6</ghg:CalculatedValue>
        </ghg:AnnualCO2EmissionsMonitoredLocationShortTons>
        <ghg:AnnualCO2EmissionsMonitoredLocationMetricTons massUOM="Metric Tons">
                <ghg:CalculatedValue>3000.3</ghg:CalculatedValue>
        </ghg:AnnualCO2EmissionsMonitoredLocationMetricTons>
        <ghg:AnnualCO2EmissionsAllBiomassFuelsCombined massUOM="Metric Tons">
                <ghg:CalculatedValue>300.2</ghg:CalculatedValue>
        </ghg:AnnualCO2EmissionsAllBiomassFuelsCombined>
```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas emissions data.

3.0   Fuel Details and Emissions

For each unit, stack or pipe, Subpart D requires the facility to name each type of fuel combusted in the configuration during the reporting year.

For each fuel type combusted in each unit, stack or pipe and which is listed in Table C-2, Subpart D requires the facility to provide the following:

- **Conditionally Required:** The total annual CH_4 combustion emissions derived from Equation C-10 expressed as CO_2 equivalent (CO_2e). **Note:** this reporting element is only required for fuels listed in Table C-2.
- **Conditionally Required:** The total annual N_2O combustion emissions derived from Equation C-10 expressed as CO_2 equivalent (CO_2e). **Note:** this reporting element is only required for fuels listed in Table C-2.

Note: Units that use CEMS and elect to use the provision under 98.33(c)(4)(ii)(B) need only identify the fuels for which N_2O and CH_4 emissions are calculated.

Figure 12
Fuel Details and Emissions Schema Diagram
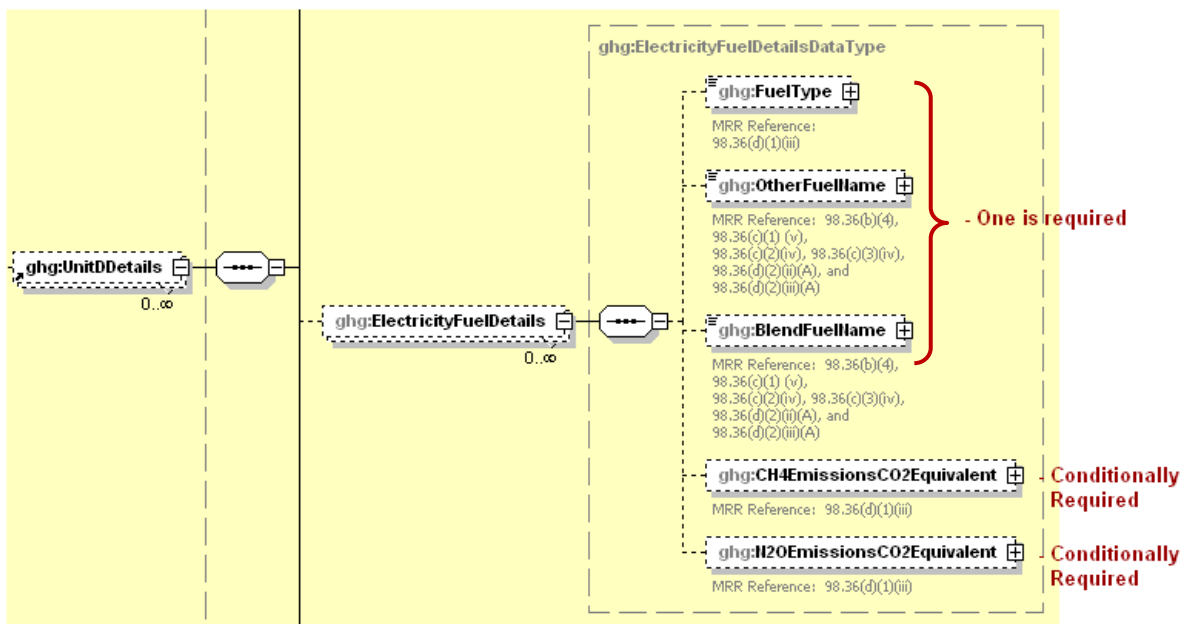
Note: Data elements boxed in red are required. Please see page 4 of this document
for more information on conditionally required elements.

Table 7
Fuel Details and Emissions Data Element Definitions

Data Element Name	Description
ElectricityFuelDetails	**Parent Element:** A collection of data elements containing information about each type of fuel combusted in the configuration during the reporting year
FuelType	**Conditionally Required:** If the fuel type is on the list of allowable values, then specify the type of fuel combusted in the unit during the report year. See the list of allowable fuel types below. If reporting a fuel not on the list or a blended fuel, then specify its name using one of the following data elements, "OtherFuelName" or "BlendFuelName", as appropriate and do not report this data element. Anthracite Bituminous Subbituminous Lignite Coke Mixed (Commercial sector) Mixed (Industrial coking) Mixed (Industrial sector) Mixed (Electric Power sector) Mixed (Electric Power sector) Plastics Petroleum Coke Municipal Solid Waste Tires Wood and Wood Residuals Agricultural Byproducts Peat Distillate Fuel Oil No. 1 Distillate Fuel Oil No. 2 Distillate Fuel Oil No. 4 Residual Fuel Oil No. 5 Residual Fuel Oil No. 6 Used Oil Kerosene Liquefied petroleum gases (LPG) Propylene Ethane Ethanol (100%) Ethylene Isobutane Isobutylene Butane Butylene Naphtha (<401 deg F) Natural Gasoline Other Oil (>401 deg F) Pentanes Plus Petrochemical Feedstocks Petroleum Coke Special Naphtha Unfinished Oils Heavy Gas Oils Lubricants Motor Gasoline Aviation Gasoline Kerosene-Type Jet Fuel Asphalt and Road Oil

Data Element Name	Description
	Crude Oil Propane Ethanol Biodiesel Rendered Animal Fat Vegetable Oil Natural Gas (Weighted U.S. Average) Blast Furnace Gas Coke Oven Gas Propane Gas Fuel Gas Biogas (Captured methane) Solid Byproducts
OtherFuelName	**Conditionally Required:** Name of the specific fuel if not found in the list of allowable values above. Otherwise, do not report this data element.
BlendFuelName	**Conditionally Required:** Name of the specific fuel blend if not found in the list of allowable values and if component fuels cannot be reported individually. Otherwise, do not report this data element.
CH4EmissionsCO2Equivalent	**Conditionally Required:** Annual CH_4 combustion emissions derived from Equation C-10 at each monitored location for the fuel specified, expressed as CO_2 equivalent. This reporting element is only required for fuels listed in Table C-2. Otherwise, do not report this data element. Report the value in the child data element **CalculatedValue**. Set the units of measure to "Metric Tons" in the attribute **massUOM**.
N2OEmissionsCO2Equivalent	**Conditionally Required:** Annual N_2O combustion emissions derived from Equation C-10 at each monitored location for the fuel specified, expressed as CO_2 equivalent. This reporting element is only required for fuels listed in Table C-2. Otherwise, do not report this data element. Report the value in the child data element **CalculatedValue**. Set the units of measure to "Metric Tons" in the attribute **massUOM**.

XML Excerpt 4
Example for Fuel Details and Emissions

```
<ghg:ElectricityFuelDetails>
        <ghg:FuelType>Anthracite</ghg:FuelType>
        <ghg:CH4EmissionsCO2Equivalent massUOM="Metric Tons">
                <ghg:CalculatedValue>300.3</ghg:CalculatedValue>
        </ghg:CH4EmissionsCO2Equivalent>
        <ghg:N2OEmissionsCO2Equivalent massUOM="Metric Tons">
                <ghg:CalculatedValue>30.5</ghg:CalculatedValue>
        </ghg:N2OEmissionsCO2Equivalent>
</ghg:ElectricityFuelDetails>
```

**Note:** The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas emissions data.

4.0   Part 75 Methodology

Details about the Part 75 methodology used to determine the CO_2 mass emissions for the unit must be reported based on the methodology indicated for the data element "Part75Methodology".

?   *Which Part 75 methodology was used to determine the CO_2 mass emissions for the unit?*

If CEMS method was used for the unit, see <u>Section 4.1</u> for reporting instructions.
If Appendix G, Equation G-4 was used for the unit, see <u>Section 4.2</u> for reporting instructions.
If Appendix G, Equation G-1 was used for the unit, see <u>Section 4.3</u> for reporting instructions.
If LME (75.19(c)(4)(iii)) was used for the unit, there are no additional details to report. See <u>Section 5.0</u> for instructions on how to report facility level roll-up emissions.

Figure 13
Part 75 Methodology Schema Diagram
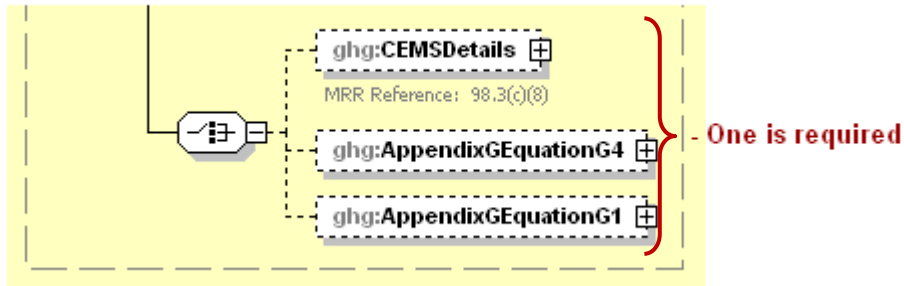
Note: Data elements boxed in red are required. Please see page 4 of this document
for more information on conditionally required elements.

4.1   CEMS Details

For each unit for which the facility selects "CEMS" as the Part 75 methodology used to determine CO_2 mass emissions, Subpart D requires the facility to provide the following additional information [98.3(c)(8)]:

- The total number of operating hours during the year that CO_2 concentration was missing.
- The total number of operating hours during the year that stack gas flow rate was missing.
- **Conditionally Required:** The total number of operating hours during the year that moisture content was missing (only if a continuous moisture monitor was in use).

Figure 14
CEMS Details Schema Diagram
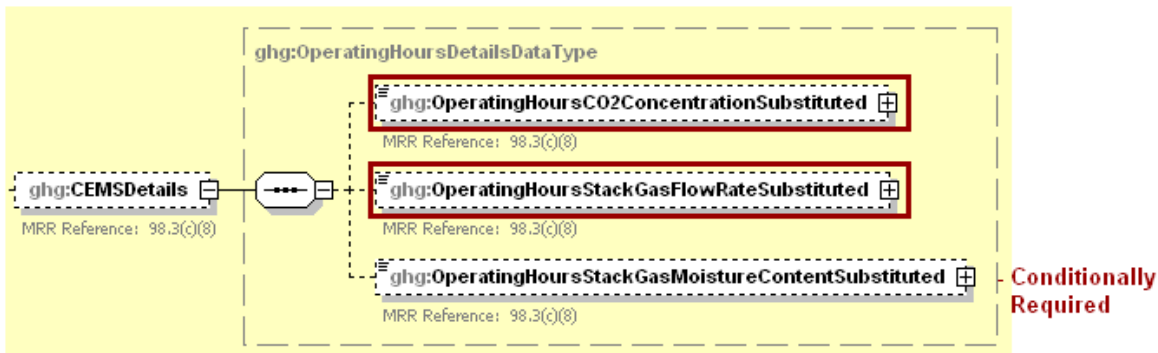
Note: Data elements boxed in red are required. Please see page 4 of this document
for more information on conditionally required elements.

Table 8
CEMS Details Data Element Definitions

Data Element Name	Description
CEMSDetails	**Parent Element** (**Conditionally Required**): Report only if "CEMS" was indicated as the Part 75 methodology used to determine CO_2 mass emissions for the unit specified. Otherwise do not report these data elements.
OperatingHoursCO2ConcentrationSubstituted	The total operating hours in which a substitute data value was used in the emissions calculations for the CO_2 concentration parameter.
OperatingHoursStackGasFlowRateSubstituted	The total operating hours in which a substitute data value was used in the emissions calculations for the stack gas flow rate parameter.
OperatingHoursStackGasMoistureContentSubstituted	**Conditionally Required:** If moisture correction is required and a continuous moisture monitor is used, then report the total operating hours in which a substitute data value was used in the emissions calculations for the stack gas moisture content parameter. Otherwise do not report this data element.

XML Excerpt 5
Example for CEMS Details

```
<ghg:CEMSDetails>
        <ghg:OperatingHoursCO2ConcentrationSubstituted>10</ghg:OperatingHoursCO2ConcentrationSubstituted>
        <ghg:OperatingHoursStackGasFlowRateSubstituted>20</ghg:OperatingHoursStackGasFlowRateSubstituted>
        <ghg:OperatingHoursStackGasMoistureContentSubstituted>30</ghg:OperatingHoursStackGasMoistureContentSubst
        ituted>
</ghg:CEMSDetails>
```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas emissions data.

See Section 5.0 for instructions on how to report facility level roll-up emissions.

4.2   Appendix G, Equation G-4 Details

For each unit for which the facility selects "Appendix G, Equation G-4" as the Part 75 methodology used to determine CO_2 mass emissions, Subpart D requires the facility to provide the following additional information [98.3(c)(8)]:

- The total number of operating hours during the year that fuel flow rate was missing.
- The total number of operating hours during the year that high heating value was missing.

Figure 15
Appendix G, Equation G-4 Details Schema Diagram
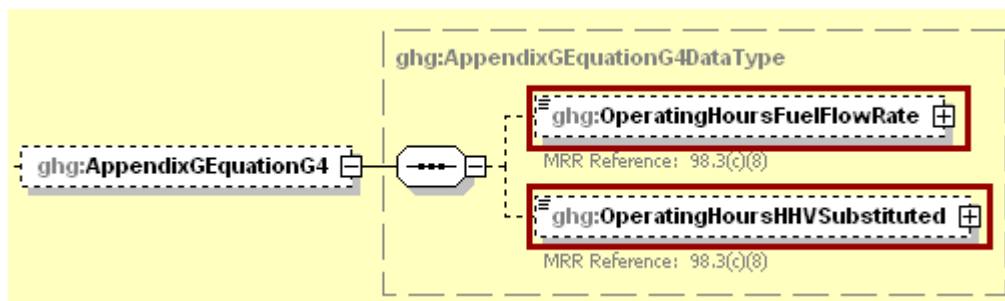
Note: Data elements boxed in red are required.

Table 9
Appendix G, Equation G-4 Details Data Element Definitions

Data Element Name	Description
AppendixGEquationG4	**Parent Element** (**Conditionally Required**): Report only if "Appendix G, Equation G-4" was indicated as the Part 75 methodology used to determine CO_2 mass emissions. Otherwise do not report these data elements.
OperatingHoursFuelFlowRate	Total number of operating hours during the year that fuel flow rate was missing
OperatingHoursHHVSubstituted	Total number of operating hours during the year that high heating value was missing.

XML Excerpt 6
Example for Appendix G, Equation G-4 Details

```
<ghg:AppendixGEquationG4>
        <ghg:OperatingHoursFuelFlowRate>1</ghg:OperatingHoursFuelFlowRate>
        <ghg:OperatingHoursHHVSubstituted>2</ghg:OperatingHoursHHVSubstituted>
</ghg:AppendixGEquationG4>
```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas emissions data.

See Section 5.0 for instructions on how to report facility level roll-up emissions.

4.3   Appendix G, Equation G-1 Details

For each unit for which the facility selects "Appendix G, Equation G-1" as the Part 75 methodology used to determine CO_2 mass emissions, Subpart D requires the facility to provide the following additional information [98.3(c)(8)]:

- The total number of operating hours during the year that fuel carbon content was missing.

Figure 16
Appendix G, Equation G-1 Details Schema Diagram
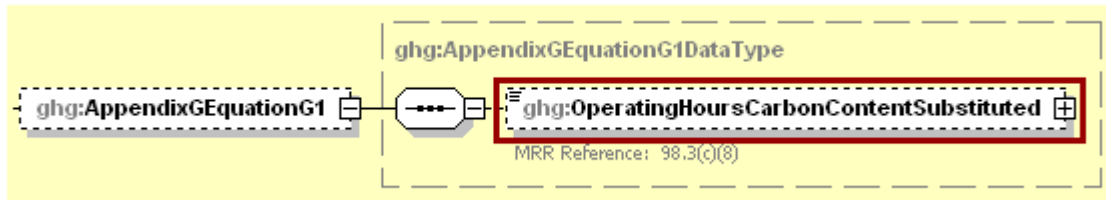
Note: Data elements boxed in red are required.

Table 10
Appendix G, Equation G-1 Details Data Element Definitions

Data Element Name	Description
AppendixGEquationG1	**Parent Element (Conditionally Required):** Report only if "Appendix G, Equation G-1" was indicated as the Part 75 methodology used to determine CO_2 mass emissions. Otherwise do not report these data elements.
OperatingHoursCarbonContentSubstituted	The total number of operating hours in the reporting year for which missing data substitution was used for carbon content values.

XML Excerpt 7
Example for Appendix G, Equation G-1 Details

```
<ghg:AppendixGEquationG1>
        <ghg:OperatingHoursCarbonContentSubstituted>1</ghg:OperatingHoursCarbonContentSubstituted>
</ghg:AppendixGEquationG1>
```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas emissions data.

➡ *See Section 5.0 for instructions on how to report facility level roll-up emissions.*

5.0 Facility-Level Roll-up Emissions

Each facility must report the following facility-level emission totals:
- Total CO_2 equivalent (CO_2e) emissions (excluding biogenic CO_2) aggregated across all direct emitter source categories (Subparts C-HH) associated with the facility.
- Total biogenic CO_2 emissions aggregated across all direct emitter source categories (Subparts C-HH) associated with the facility.

Each supplier must report the following supplier totals:
- Total CO_2e associated with products supplied aggregated across Subparts NN, OO and PP (as applicable). **Note:** Do not include Subpart LL and MM totals in this data element as these values are not being collected in e-GGRT.

Figure 17
Facility-Level Roll-up Emissions Schema Diagram
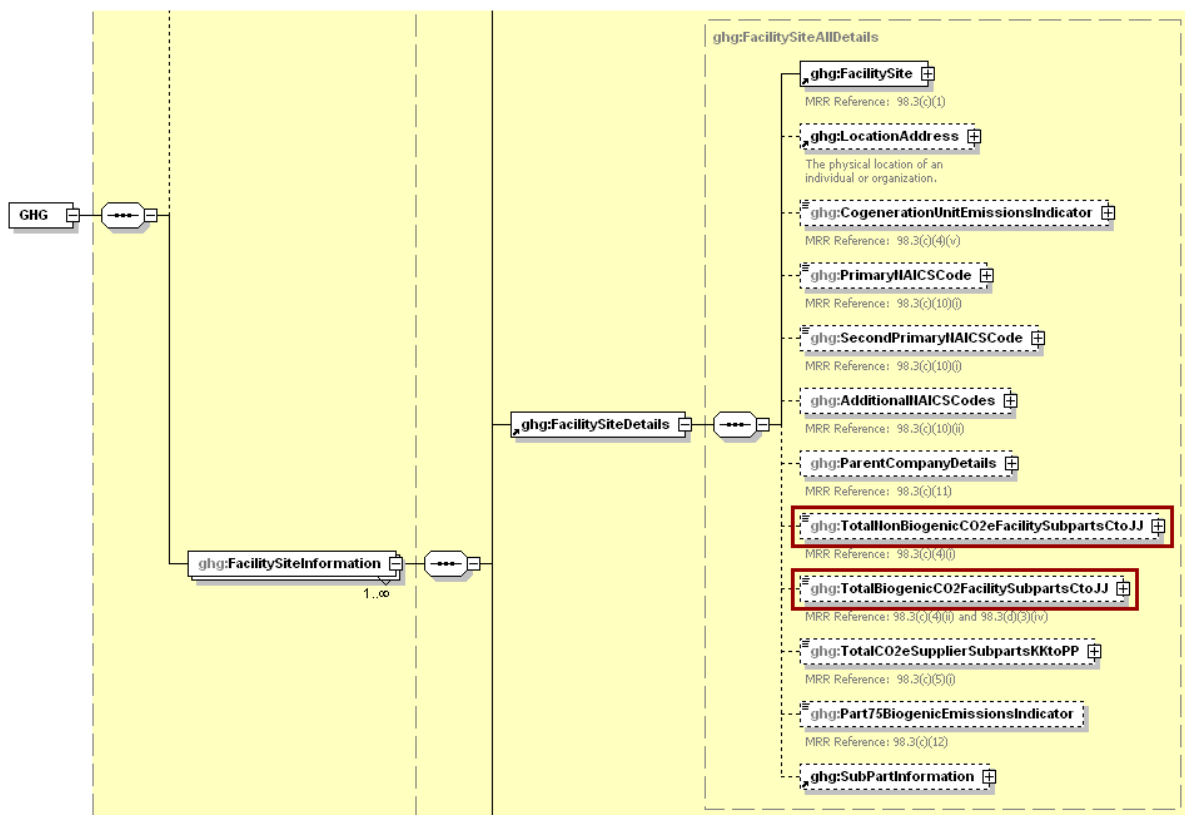
Note: Data elements boxed in red are required.

1) Add the total CO_2e value for Subpart D in metric tons to the total CO_2e emissions (excluding biogenic CO_2) aggregated across all source category Subparts associated with the facility according to the following guidelines:

- Add the annual CO_2 emissions in metric tons minus the total biogenic CO_2 mass emissions in metric tons for each unit.
- Add the CO_2 equivalent value for annual CH_4 emissions in metric tons for each fuel used in each unit.
- Add the CO_2 equivalent value for annual N_2O emissions in metric tons for each fuel used in each unit.

2) Add the total biogenic CO_2 mass emissions from each unit in metric tons to the total biogenic CO_2 aggregated across all source category Subparts associated with the facility.

Note: You must follow the rounding rules found in Table 1.

Table 11
Facility Level Roll-up Emissions Data Element Definitions

Data Element Name	Description
TotalNonBiogenicCO2eFacilitySubpartsCtoJJ	Add the total CO_2e value for Subpart D in metric tons to the total CO_2e emissions (excluding biogenic CO_2) aggregated across all source category Subparts associated with the facility according to the guidelines above. Set the units of measure to "Metric Tons" in the attribute **massUOM**.
TotalBiogenicCO2FacilitySubpartsCtoJJ	Add the total annual biogenic CO_2 value for Subpart D in metric tons to the total biogenic CO_2 emissions aggregated across all source category Subparts associated with the facility according to the guideline above. Set the units of measure to "Metric Tons" in the attribute **massUOM**.

XML Excerpt 8
Example for Facility Level Roll-up Emissions

```
<ghg:TotalNonBiogenicCO2eFacilitySubpartsCtoJJ massUOM="Metric Tons">10100.2</ghg:TotalNonBiogenicCO2eFacilitySubpartsCtoJJ>
<ghg:TotalBiogenicCO2FacilitySubpartsCtoJJ massUOM="Metric Tons">1000.7</ghg:TotalBiogenicCO2FacilitySubpartsCtoJJ>
```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas emissions data.

## IV.   Appendix A – Sample XML Document for Subpart D

(Note: Data values do not reflect an actual facility's emissions. Additional sample XML files for Subpart D are posted on the e-GGRT help site.
http://www.ccdsupport.com/confluence/display/help/Additional+XML+Examples)

```xml
<ghg:GHG xmlns="http://www.ccdsupport.com/schema/ghg">
  <ghg:FacilitySiteInformation>
    <ghg:CertificationStatement>The designated representative or alternate designated representative must sign (i.e., agree to) this certification statement. If you are an agent and
you click on  "SUBMIT", you are not agreeing to the certification statement, but are submitting the certification statement on behalf of the designated  representative or alternate
designated representative who is agreeing to the certification statement. An agent is only authorized to make the electronic submission on behalf of the designated representative, not
to sign (i.e., agree to) the certification statement.</ghg:CertificationStatement>
    <ghg:ReportingYear>2011</ghg:ReportingYear>
    <ghg:FacilitySiteDetails>
        <ghg:FacilitySite>
                <ghg:FacilitySiteIdentifier>524477</ghg:FacilitySiteIdentifier>
                <ghg:FacilitySiteName>Test Facility D</ghg:FacilitySiteName>
        </ghg:FacilitySite>
        <ghg:LocationAddress>
                <ghg:LocationAddressText>1 Main St.</ghg:LocationAddressText>
                <ghg:LocalityName>Charlottesville</ghg:LocalityName>
                <ghg:StateIdentity>
                        <ghg:StateCode>VA</ghg:StateCode>
                </ghg:StateIdentity>
                <ghg:AddressPostalCode>22911</ghg:AddressPostalCode>
        </ghg:LocationAddress>
        <ghg:CogenerationUnitEmissionsIndicator>N</ghg:CogenerationUnitEmissionsIndicator>
        <ghg:PrimaryNAICSCode>237130</ghg:PrimaryNAICSCode>
        <ghg:ParentCompanyDetails>
                <ghg:ParentCompany>
                        <ghg:ParentCompanyLegalName>Soda Ash Corporation</ghg:ParentCompanyLegalName>
                        <ghg:StreetAddress>108 Hillcrest Street</ghg:StreetAddress>
                        <ghg:City>Sandpoint</ghg:City>
                        <ghg:State>ID</ghg:State>
                        <ghg:Zip>83864</ghg:Zip>
                        <ghg:PercentOwnershipInterest>100.0</ghg:PercentOwnershipInterest>
                </ghg:ParentCompany>
        </ghg:ParentCompanyDetails>
        <ghg:TotalNonBiogenicCO2eFacilitySubpartsCtoJJ massUOM="Metric Tons">10100.2</ghg:TotalNonBiogenicCO2eFacilitySubpartsCtoJJ>
        <ghg:TotalBiogenicCO2FacilitySubpartsCtoJJ massUOM="Metric Tons">1000.2</ghg:TotalBiogenicCO2FacilitySubpartsCtoJJ>
        <ghg:TotalCO2eSupplierSubpartsKKtoPP massUOM="Metric Tons">0</ghg:TotalCO2eSupplierSubpartsKKtoPP>
        <ghg:SubPartInformation>
                <ghg:SubPartD>
                        <ghg:GHGasInfoDetails>
                                <ghg:GHGasName>Biogenic Carbon dioxide</ghg:GHGasName>
                                <ghg:GHGasQuantity massUOM="Metric Tons">
                                        <ghg:CalculatedValue>1000.4</ghg:CalculatedValue>
                                </ghg:GHGasQuantity>
                        </ghg:GHGasInfoDetails>
                        <ghg:GHGasInfoDetails>
```

```
                <ghg:GHGasName>Methane</ghg:GHGasName>
                <ghg:GHGasQuantity massUOM="Metric Tons">
                        <ghg:CalculatedValue>47.62</ghg:CalculatedValue>
                </ghg:GHGasQuantity>
        </ghg:GHGasInfoDetails>
        <ghg:GHGasInfoDetails>
                <ghg:GHGasName>Nitrous Oxide</ghg:GHGasName>
                <ghg:GHGasQuantity massUOM="Metric Tons">
                        <ghg:CalculatedValue>0.323</ghg:CalculatedValue>
                </ghg:GHGasQuantity>
        </ghg:GHGasInfoDetails>
        <ghg:GHGasInfoDetails>
                <ghg:GHGasName>Carbon Dioxide</ghg:GHGasName>
                <ghg:GHGasQuantity massUOM="Metric Tons">
                        <ghg:CalculatedValue>9000.5</ghg:CalculatedValue>
                </ghg:GHGasQuantity>
        </ghg:GHGasInfoDetails>
        <ghg:UnitDDetails>
                <ghg:UnitIdentification>
                        <ghg:UnitName>004-LME</ghg:UnitName>
                        <ghg:UnitDescription>LME unit</ghg:UnitDescription>
                        <ghg:UnitType>Electricity Generator</ghg:UnitType>
                </ghg:UnitIdentification>
                <ghg:Part75Methodology>LME (§75.19(c)(4)(iii))</ghg:Part75Methodology>
                <ghg:TierMethodologyStartDate>2011-01-01</ghg:TierMethodologyStartDate>
                <ghg:TierMethodologyEndDate>2011-12-31</ghg:TierMethodologyEndDate>
                <ghg:isAcidRainProgramIndicator>Y</ghg:isAcidRainProgramIndicator>
                <ghg:AnnualCO2EmissionsMonitoredLocationShortTons massUOM="Short Tons">
                        <ghg:CalculatedValue>4409.2</ghg:CalculatedValue>
                </ghg:AnnualCO2EmissionsMonitoredLocationShortTons>
                <ghg:AnnualCO2EmissionsMonitoredLocationMetricTons massUOM="Metric Tons">
                        <ghg:CalculatedValue>4000.3</ghg:CalculatedValue>
                </ghg:AnnualCO2EmissionsMonitoredLocationMetricTons>
                <ghg:AnnualCO2EmissionsAllBiomassFuelsCombined massUOM="Metric Tons">
                        <ghg:CalculatedValue>400.6</ghg:CalculatedValue>
                </ghg:AnnualCO2EmissionsAllBiomassFuelsCombined>
                <ghg:ElectricityFuelDetails>
                        <ghg:FuelType>Coke</ghg:FuelType>
                        <ghg:CH4EmissionsCO2Equivalent massUOM="Metric Tons">
                                <ghg:CalculatedValue>400.7</ghg:CalculatedValue>
                        </ghg:CH4EmissionsCO2Equivalent>
                        <ghg:N2OEmissionsCO2Equivalent massUOM="Metric Tons">
                                <ghg:CalculatedValue>40.8</ghg:CalculatedValue>
                        </ghg:N2OEmissionsCO2Equivalent>
                </ghg:ElectricityFuelDetails>
        </ghg:UnitDDetails>
        <ghg:UnitDDetails>
                <ghg:UnitIdentification>
                        <ghg:UnitName>003-AG-Eq G-4</ghg:UnitName>
                        <ghg:UnitDescription>Appendix G, Eq. G-4 unit</ghg:UnitDescription>
                        <ghg:UnitType>Electricity Generator</ghg:UnitType>
                </ghg:UnitIdentification>
                <ghg:Part75Methodology>Appendix G, Equation G-4</ghg:Part75Methodology>
                <ghg:TierMethodologyStartDate>2011-01-01</ghg:TierMethodologyStartDate>
                <ghg:TierMethodologyEndDate>2011-12-31</ghg:TierMethodologyEndDate>
```

```
<ghg:isAcidRainProgramIndicator>Y</ghg:isAcidRainProgramIndicator>
<ghg:AnnualCO2EmissionsMonitoredLocationShortTons massUOM="Short Tons">
        <ghg:CalculatedValue>3307.3</ghg:CalculatedValue>
</ghg:AnnualCO2EmissionsMonitoredLocationShortTons>
<ghg:AnnualCO2EmissionsMonitoredLocationMetricTons massUOM="Metric Tons">
        <ghg:CalculatedValue>3000.2</ghg:CalculatedValue>
</ghg:AnnualCO2EmissionsMonitoredLocationMetricTons>
<ghg:AnnualCO2EmissionsAllBiomassFuelsCombined massUOM="Metric Tons">
        <ghg:CalculatedValue>300.1</ghg:CalculatedValue>
</ghg:AnnualCO2EmissionsAllBiomassFuelsCombined>
<ghg:ElectricityFuelDetails>
        <ghg:FuelType>Anthracite</ghg:FuelType>
        <ghg:CH4EmissionsCO2Equivalent massUOM="Metric Tons">
                <ghg:CalculatedValue>300.3</ghg:CalculatedValue>
        </ghg:CH4EmissionsCO2Equivalent>
        <ghg:N2OEmissionsCO2Equivalent massUOM="Metric Tons">
                <ghg:CalculatedValue>30.5</ghg:CalculatedValue>
        </ghg:N2OEmissionsCO2Equivalent>
</ghg:ElectricityFuelDetails>
<ghg:AppendixGEquationG4>
        <ghg:OperatingHoursFuelFlowRate>1</ghg:OperatingHoursFuelFlowRate>
        <ghg:OperatingHoursHHVSubstituted>2</ghg:OperatingHoursHHVSubstituted>
</ghg:AppendixGEquationG4>
</ghg:UnitDDetails>
<ghg:UnitDDetails>
        <ghg:UnitIdentification>
                <ghg:UnitName>002-AG-Eq G-1</ghg:UnitName>
                <ghg:UnitDescription>Appendix G, Eq. G-1 unit</ghg:UnitDescription>
                <ghg:UnitType>Electricity Generator</ghg:UnitType>
        </ghg:UnitIdentification>
        <ghg:Part75Methodology>Appendix G, Equation G-1</ghg:Part75Methodology>
        <ghg:TierMethodologyStartDate>2011-01-01</ghg:TierMethodologyStartDate>
        <ghg:TierMethodologyEndDate>2011-12-31</ghg:TierMethodologyEndDate>
        <ghg:isAcidRainProgramIndicator>N</ghg:isAcidRainProgramIndicator>
        <ghg:AnnualCO2EmissionsMonitoredLocationShortTons massUOM="Short Tons">
                <ghg:CalculatedValue>2205.4</ghg:CalculatedValue>
        </ghg:AnnualCO2EmissionsMonitoredLocationShortTons>
        <ghg:AnnualCO2EmissionsMonitoredLocationMetricTons massUOM="Metric Tons">
                <ghg:CalculatedValue>2000.2</ghg:CalculatedValue>
        </ghg:AnnualCO2EmissionsMonitoredLocationMetricTons>
        <ghg:AnnualCO2EmissionsAllBiomassFuelsCombined massUOM="Metric Tons">
        <ghg:CalculatedValue>200.1</ghg:CalculatedValue>
                </ghg:AnnualCO2EmissionsAllBiomassFuelsCombined>
        <ghg:ElectricityFuelDetails>
                <ghg:FuelType>Bituminous</ghg:FuelType>
                <ghg:CH4EmissionsCO2Equivalent massUOM="Metric Tons">
                        <ghg:CalculatedValue>200.7</ghg:CalculatedValue>
                </ghg:CH4EmissionsCO2Equivalent>
                <ghg:N2OEmissionsCO2Equivalent massUOM="Metric Tons">
                        <ghg:CalculatedValue>20.8</ghg:CalculatedValue>
                </ghg:N2OEmissionsCO2Equivalent>
        </ghg:ElectricityFuelDetails>
        <ghg:AppendixGEquationG1>
                <ghg:OperatingHoursCarbonContentSubstituted>1</ghg:OperatingHoursCarbonContentSubstituted>
        </ghg:AppendixGEquationG1>
```

```
                            </ghg:UnitDDetails>
                            <ghg:UnitDDetails>
                                    <ghg:UnitIdentification>
                                            <ghg:UnitName>001-CEMS</ghg:UnitName>
                                            <ghg:UnitDescription>CEMS unit</ghg:UnitDescription>
                                            <ghg:UnitType>Electricity Generator</ghg:UnitType>
                                    </ghg:UnitIdentification>
                                    <ghg:Part75Methodology>CEMS</ghg:Part75Methodology>
                                    <ghg:TierMethodologyStartDate>2011-01-01</ghg:TierMethodologyStartDate>
                                    <ghg:TierMethodologyEndDate>2011-12-31</ghg:TierMethodologyEndDate>
                                    <ghg:isAcidRainProgramIndicator>N</ghg:isAcidRainProgramIndicator>
                                    <ghg:AnnualCO2EmissionsMonitoredLocationShortTons massUOM="Short Tons">
                                            <ghg:CalculatedValue>1102.4</ghg:CalculatedValue>
                                    </ghg:AnnualCO2EmissionsMonitoredLocationShortTons>
                                    <ghg:AnnualCO2EmissionsMonitoredLocationMetricTons massUOM="Metric Tons">
                                            <ghg:CalculatedValue>1000.5</ghg:CalculatedValue>
                                    </ghg:AnnualCO2EmissionsMonitoredLocationMetricTons>
                                    <ghg:AnnualCO2EmissionsAllBiomassFuelsCombined massUOM="Metric Tons">
                                            <ghg:CalculatedValue>100.7</ghg:CalculatedValue>
                                    </ghg:AnnualCO2EmissionsAllBiomassFuelsCombined>
                                    <ghg:ElectricityFuelDetails>
                                            <ghg:FuelType>Mixed (Electric Power sector)</ghg:FuelType>
                                            <ghg:CH4EmissionsCO2Equivalent massUOM="Metric Tons">
                                                    <ghg:CalculatedValue>100.9</ghg:CalculatedValue>
                                            </ghg:CH4EmissionsCO2Equivalent>
                                            <ghg:N2OEmissionsCO2Equivalent massUOM="Metric Tons">
                                                    <ghg:CalculatedValue>10.3</ghg:CalculatedValue>
                                            </ghg:N2OEmissionsCO2Equivalent>
                                    </ghg:ElectricityFuelDetails>
                                    <ghg:CEMSDetails>
                                            <ghg:OperatingHoursCO2ConcentrationSubstituted>1</ghg:OperatingHoursCO2ConcentrationSubstituted>
                                            <ghg:OperatingHoursStackGasFlowRateSubstituted>2</ghg:OperatingHoursStackGasFlowRateSubstituted>
                                            <ghg:OperatingHoursStackGasMoistureContentSubstituted>3</ghg:OperatingHoursStackGasMoistureContentSubstituted>
                                    </ghg:CEMSDetails>
                            </ghg:UnitDDetails>
                    </ghg:SubPartD>
            </ghg:SubPartInformation>
    </ghg:FacilitySiteDetails>
    <ghg:CalculationMethodologyChangesDescription>None</ghg:CalculationMethodologyChangesDescription>
    <ghg:BestAvailableMonitoringMethodsUsed>N/A</ghg:BestAvailableMonitoringMethodsUsed>
    <ghg:StartDate>2011-01-01</ghg:StartDate>
    <ghg:EndDate>2011-12-31</ghg:EndDate>
    <ghg:DateTimeReportGenerated>2012-02-09T09:58:09</ghg:DateTimeReportGenerated>
  </ghg:FacilitySiteInformation>
</ghg:GHG>
```