e-GGRT Training Webinar on Reporting GHG Data for Subpart W

U.S. Environmental Protection Agency

Greenhouse Gas Reporting Program (GHGRP)

September 4 2012

3:00 PM EDT

This training is provided by EPA solely for informational purposes. It does not provide legal advice, have legally binding effect, or expressly or implicitly create, expand, or limit any legal rights, obligations, responsibilities, expectations, or benefits in regard to any person.

Topics for Today's Q &A

- Please only submit questions regarding e-GGRT functionality
- Questions on other topics (requirements of the Greenhouse Gas Reporting Rule, legal issues, etc.) should be submitted to **ghgreporting@epa.gov**

Webinar Outline/Overview

- Background on Petroleum and Natural Gas systems, Subpart W
- Confidential Business Information
- Use of Calculation Spreadsheets
- Overview of Submission Process
- Overview of Subpart W Reporting Form
- Reporting General Provisions
- Review of Select Emission Sources
- Questions and Answers Resources

Subpart W – General Background

Reporting is required by facilities in specific segments of the petroleum and natural gas industry that emit GHGs ≥ 25,000 metric tons carbon dioxide equivalent (CO_2e) per year:

- Offshore petroleum and natural gas production
- Onshore petroleum and natural gas production facilities, basin level reporting*
- Natural gas processing facilities
- Natural gas transmission compression
- Underground natural gas storage
- Liquefied natural gas (LNG) storage
- LNG import and export terminals
- Natural gas distribution, owned or operated by Local Distribution Companies (LDCs)*

* Due to their unique characteristics, the facility definition for onshore petroleum and natural gas production and natural gas distribution differs from the definition of facility in subpart A.

General Background Continued

- Amendments to subpart W since promulgation of the final rule in 2010:
  - Revisions to BAMM provisions – Final Rule (09/27/11)
  - 2011 Technical Revisions and Clarifications – Final Rule (12/23/11)
  - 2012 Technical Corrections and Clarifications – Final Rule (08/24/12)

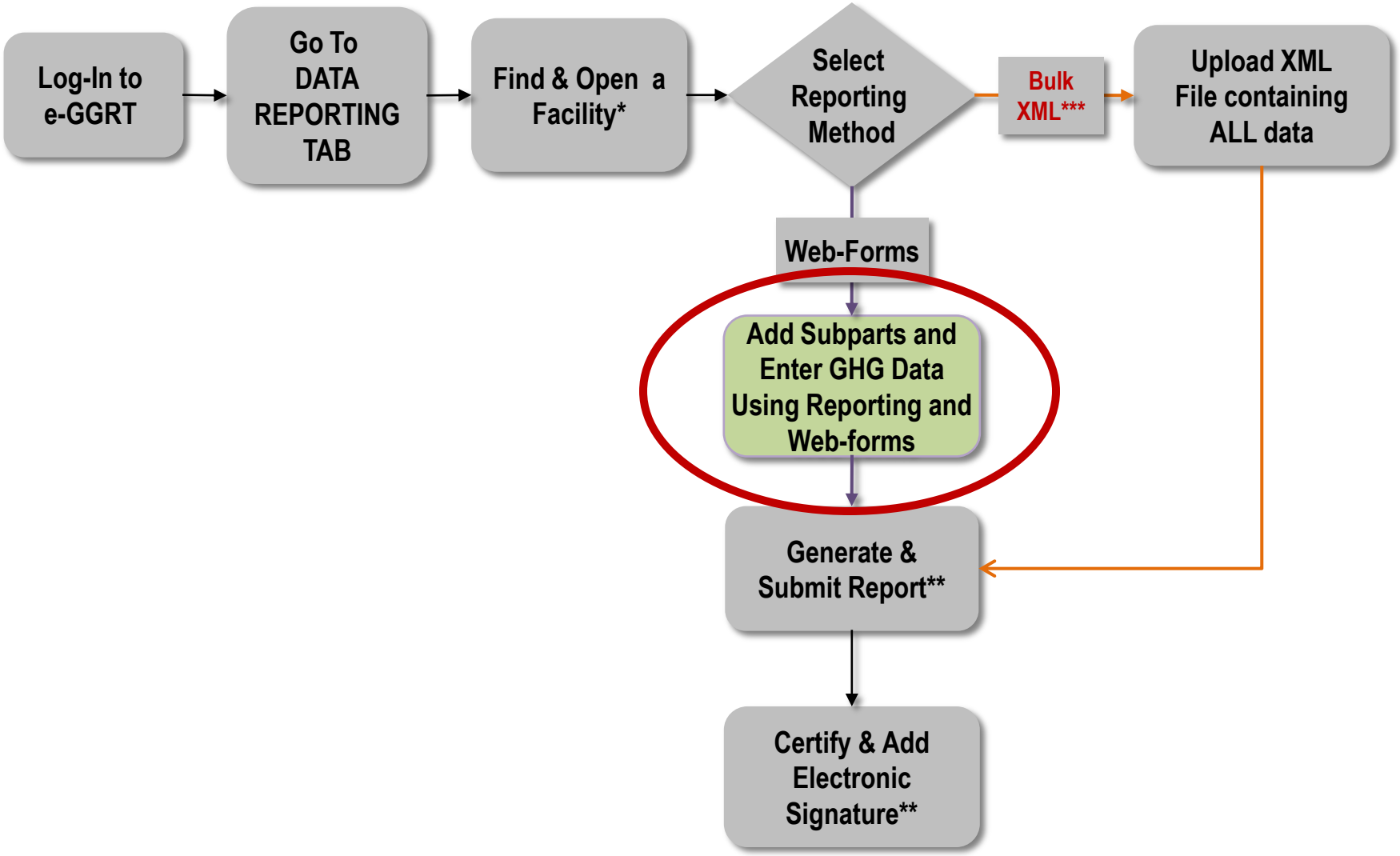
Confidential Business Information

- All elements included in e-GGRT are required reporting elements, as applicable
- E-GGRT reflects the final rule deferring the reporting deadline for inputs to emission equations for direct emitters (76 FR 53057, published Aug. 25, 2011, and 77 FR 48072, published August 13, 2012)
- Data elements that have been determined to be CBI must be reported
- Reporting elements that have been determined to be CBI will be protected under the Clean Air Act (Sec. 114(c)) and EPA regulations (40 CFR Part 2)

Use of Optional Calculation Spreadsheets

- Optional spreadsheets available to assist with performing calculations
- Will NOT be collected by e-GGRT and should NOT be submitted

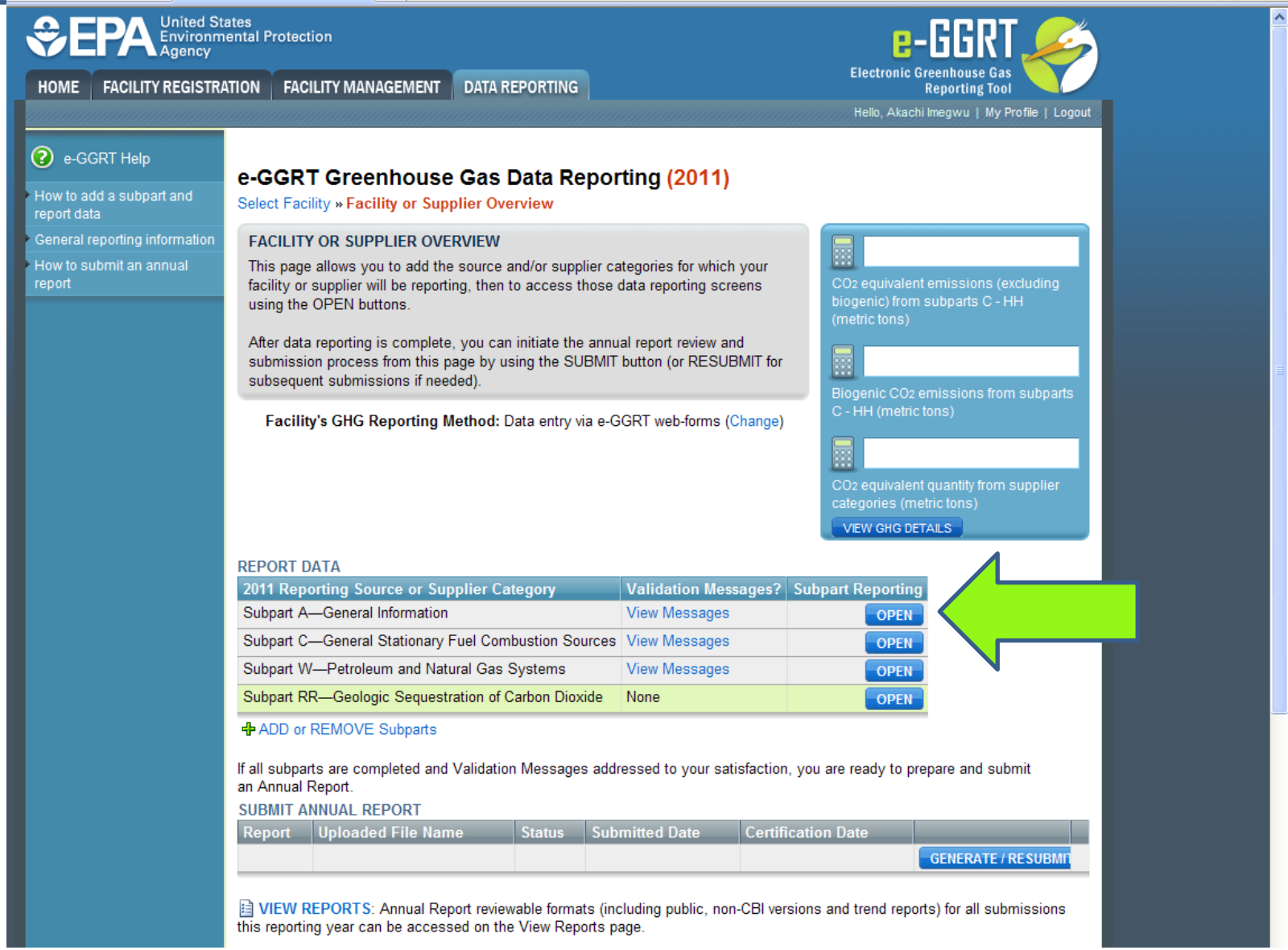
e-GGRT Data Reporting Workflow



Adding Subpart W Module to Your Facility in e-GGRT

Subpart Selection Page in e-GGRT

Facility Overview Page

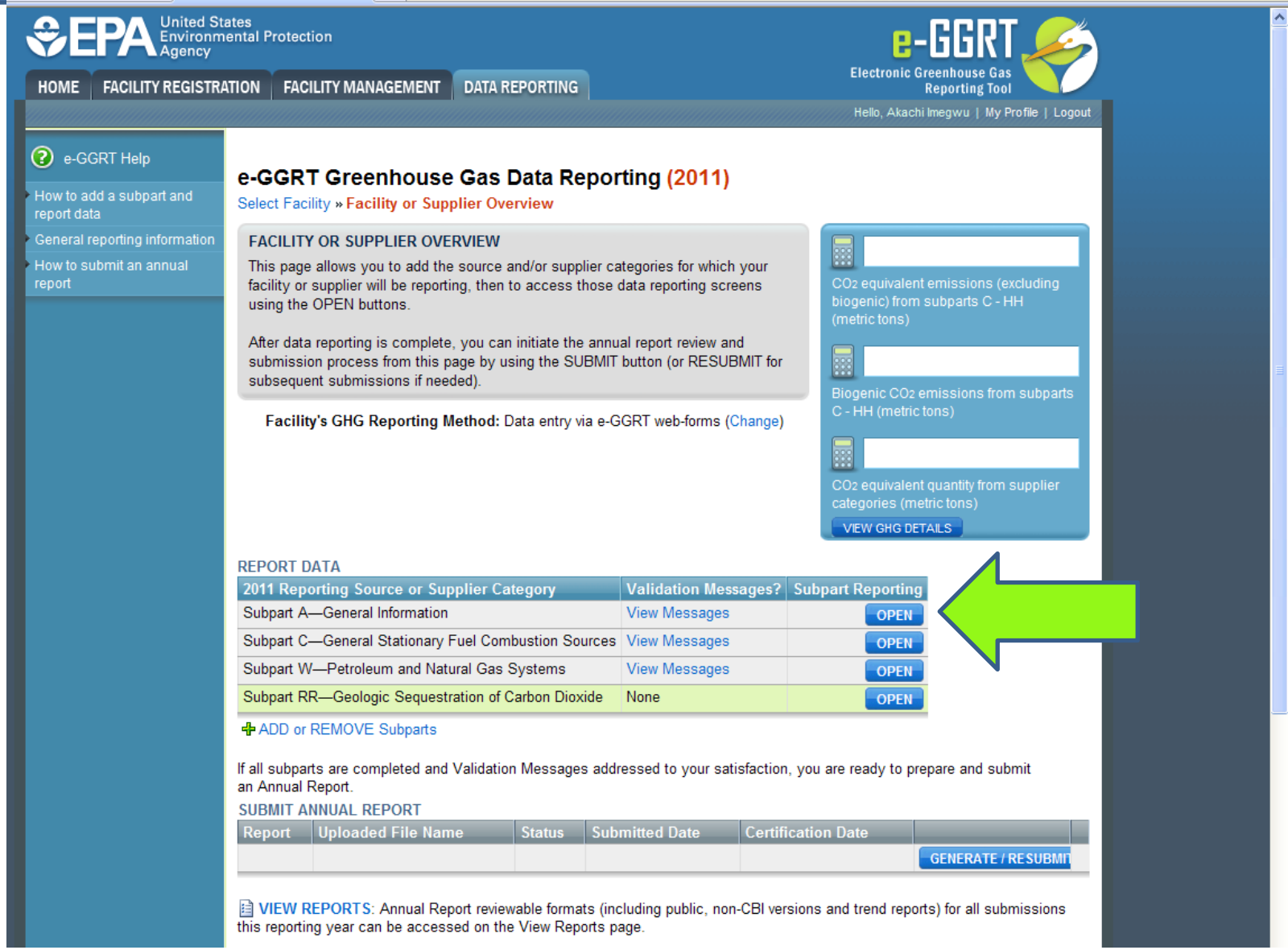


Subpart A- General Information

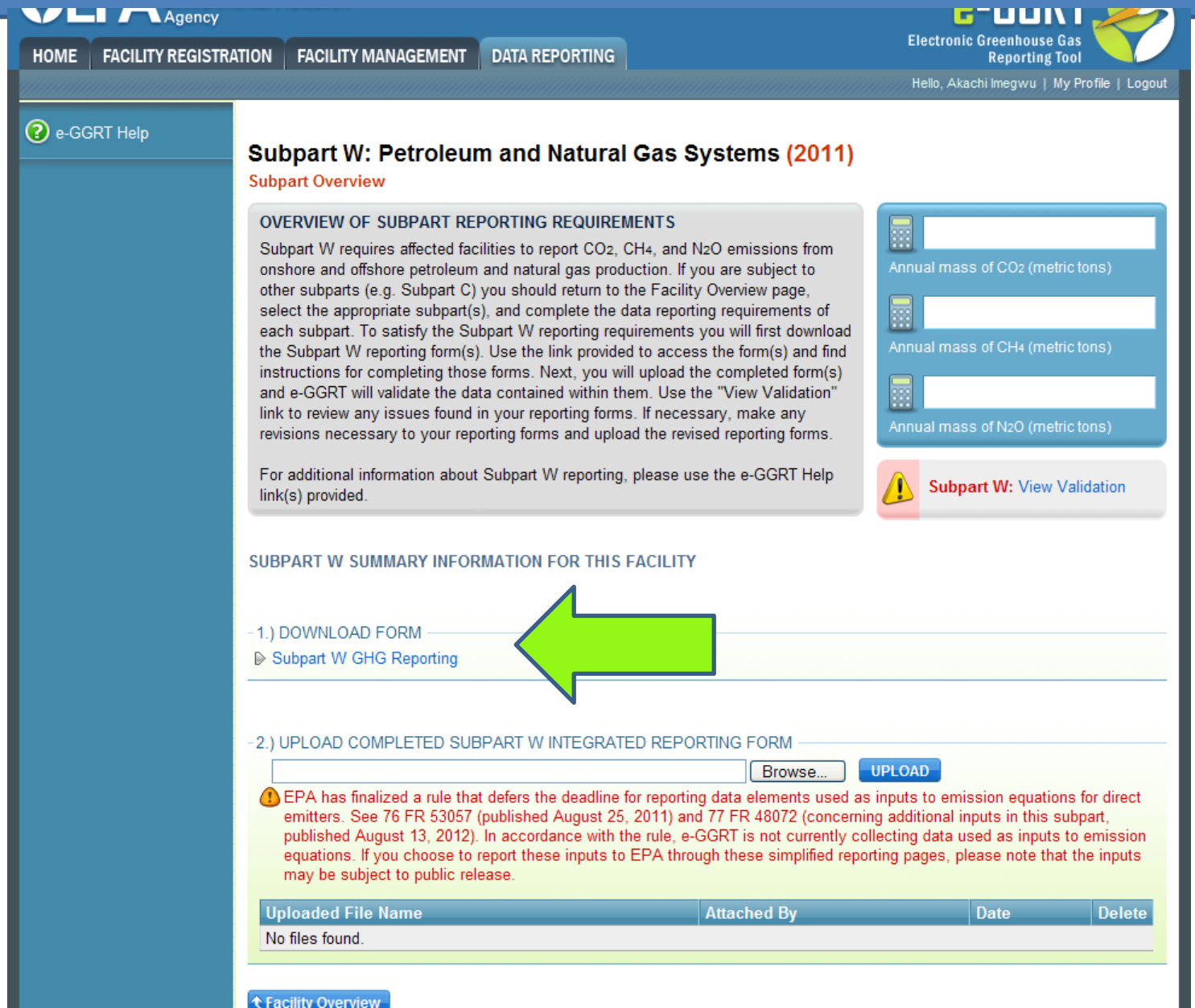
- All must report Subpart A information:
- NAICS codes
- U.S. Parent Company
- Start date and end date for report
- Methodological changes during the year, if applicable
- Best Available Monitoring Methods used, if applicable
- Indicate if emissions include emissions from co-generation

Subpart A Screenshot

Facility Overview Page



Facility Overview Page



Subpart W Reporting Form: Introduction Tab

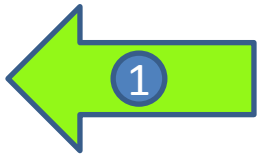
Subpart W: Petroleum and Natural Gas Systems

Version e-GGRT RY2011.R.01 Updated: 8/28/2012

1.) Select the applicable industry segment for this workbook:

Note: One workbook must be submitted for each industry segment. If your facility is required to report emissions under more than one industry segment, a workbook should be filled which that facility falls.

- (●) Offshore petroleum and natural gas production [98.230(a)(1)]
- ( ) Onshore petroleum and natural gas production [98.230(a)(2)]
- ( ) Onshore natural gas processing [98.230(a)(3)]
- ( ) Onshore natural gas transmission compression [98.230(a)(4)]
- ( ) Underground natural gas storage [98.230(a)(5)]
- ( ) Liquefied natural gas (LNG) storage [98.230(a)(6)]
- ( ) LNG import and export equipment [98.230(a)(7)]
- ( ) Natural gas distribution [98.230(a)(8)]



Subpart W Reporting Form: I

2.) Fill out the following table with general information about this facility:

Facility Name:	
GHGRP ID:	
Reporting Period:	2011
Annual throughput [98.236(d)] Gaseous Throughput (MMscf)	
Annual throughput [98.236(d)] Liquid Throughput (thousand barrels)	
Comments:	

3.) Fill out the applicable source reporting forms for your industry segment, as indicated with a green "Yes", below:

	Required for Offshore petroleum and natural gas production [98.230(a)(1)]:	Go to Reporting Spreadsheet	Total Reported CO_2 Emissions (mt CO_2)	Total Reported CH_4 Emissions (mt CO_2e)	T
Sub-Basin Selection	No	Go to Form	N/A	N/A	
Natural Gas Pneumatic Devices [98.236(c)(1)]	No	Go to Form	0	0	
Natural Gas Driven Pneumatic Pumps [98.236(c)(2)]	No	Go to Form	0	0	
Acid Gas Removal Units [98.236(c)(3)]	No	Go to Form	0	N/A	
Dehydrators [98.236(c)(4)]	No	Go to Form	0	0	
Well Venting for Liquids Unloading [98.236(c)(5)]	No	Go to Form	0	0	

Introduction | Sub-Basin Selection | (1) Pneumatic Device Venting | (2) NG Driven Pneumatic Pumps | (3) Acid Gas Removal Units | (4) Dehydrators | (5) W

Subpart W Reporting Form: Introduction worksheet contd.,

Subpart W: Petroleum and Natural Gas Systems

Version e-GGRT RY2011.R.01.

1.) Select the applicable industry segment for this workbook:

Note: One workbook must be submitted for each industry segment. If your facility is required to report emissions under more than one industry segment, a workbook should be fille which that facility falls.

- ○ **Offshore petroleum and natural gas production [98.230(a)(1)]**
- ◉ **Onshore petroleum and natural gas production [98.230(a)(2)]**
- ○ **Onshore natural gas processing [98.230(a)(3)]**
- ○ **Onshore natural gas transmission compression [98.230(a)(4)]**
- ○ **Underground natural gas storage [98.230(a)(5)]**
- ○ **Liquefied natural gas (LNG) storage [98.230(a)(6)]**
- ○ **LNG import and export equipment [98.230(a)(7)]**
- ○ **Natural gas distribution [98.230(a)(8)]**

2.) Fill out the following table with general information about this facility:

Facility Name:	
GHGRP ID:	
Reporting Period:	2011
Annual throughput [98.236(d)] Gaseous Throughput (MMscf)	
Annual throughput [98.236(d)] Liquid Throughput (thousand barrels)	
Comments:	

2

3.) Fill out the applicable source reporting forms for your industry segment, as indicated with a green "Yes", below:

	Required for Onshore petroleum and natural gas production [98.230(a)(2)]:	Go to Reporting Spreadsheet	Total Reported CO_2 Emissions (mt CO_2)	Total Reported CH_4 Emissions (mt CO_2e)	To
Sub-Basin Selection	Yes	Go to Form	N/A	N/A	
Natural Gas Pneumatic Devices [98.236(c)(1)]	Yes	Go to Form	0	0	
Natural Gas Driven Pneumatic Pumps [98.236(c)(2)]	Yes	Go to Form	0	0	
Acid Gas Removal Units [98.236(c)(3)]	Yes	Go to Form	0	N/A	
Dehydrators [98.236(c)(4)]	Yes	Go to Form	0	0	

Introduction | Sub-Basin Selection | (1) Pneumatic Device Venting | (2) NG Driven Pneumatic Pumps | (3) Acid Gas Removal Units | (4) Dehydrators | (5) Well Venting

Subpart W Reporting Form: Introduction worksheet contd.,

Subpart W: Petroleum and Natural Gas Systems

Version e-GGRT RY2011.R.01.

1.) Select the applicable industry segment for this workbook:

Note: One workbook must be submitted for each industry segment. If your facility is required to report emissions under more than one industry segment, a workbook should be fille which that facility falls.

- ○ Offshore petroleum and natural gas production [98.230(a)(1)]
- ◉ Onshore petroleum and natural gas production [98.230(a)(2)]
- ○ Onshore natural gas processing [98.230(a)(3)]
- ○ Onshore natural gas transmission compression [98.230(a)(4)]
- ○ Underground natural gas storage [98.230(a)(5)]
- ○ Liquefied natural gas (LNG) storage [98.230(a)(6)]
- ○ LNG import and export equipment [98.230(a)(7)]
- ○ Natural gas distribution [98.230(a)(8)]

2.) Fill out the following table with general information about this facility:

Facility Name:	
GHGRP ID:	
Reporting Period:	2011
Annual throughput [98.236(d)] Gaseous Throughput (MMscf)	
Annual throughput [98.236(d)] Liquid Throughput (thousand barrels)	
Comments:	

3

3.) Fill out the applicable source reporting forms for your industry segment, as indicated with a green "Yes", below:

	Required for Onshore petroleum and natural gas production [98.230(a)(2)]:	Go to Reporting Spreadsheet	Total Reported CO_2 Emissions (mt CO_2)	Total Reported CH_4 Emissions (mt CO_2e)	To
Sub-Basin Selection	Yes	Go to Form	N/A	N/A	
Natural Gas Pneumatic Devices [98.236(c)(1)]	Yes	Go to Form	0	0	
Natural Gas Driven Pneumatic Pumps [98.236(c)(2)]	Yes	Go to Form	0	0	
Acid Gas Removal Units [98.236(c)(3)]	Yes	Go to Form	0	N/A	
Dehydrators [98.236(c)(4)]	Yes	Go to Form	0	0	

Introduction | Sub-Basin Selection | (1) Pneumatic Device Venting | (2) NG Driven Pneumatic Pumps | (3) Acid Gas Removal Units | (4) Dehydrators | (5) Well Venting

Subpart W Reporting Form: Introduction Tab

3. Fill out the applicable source reporting forms for your industry segment, as indicated with a green "Yes", below:

	Required for Onshore petroleum and natural gas production	Go to Reporting Spreadsheet	Total Reported CO_2 Emissions (mt CO_2)	Total Reported CH_4 Emissions (mt CO_2e)	Total Reported N_2O Emissions (mt CO_2e)	Total Reported Emissions (mt CO_2e)
Sub-Basin Selection	Yes	Go to Form	N/A	N/A	N/A	N/A
Natural Gas Pneumatic Devices [98.236(c)(1)]	Yes	Go to Form	0	0	N/A	0
Natural Gas Driven Pneumatic Pumps [98.236(c)(2)]	Yes	Go to Form	0	0	N/A	0
Acid Gas Removal Units [98.236(c)(3)]	Yes	Go to Form	0	N/A	N/A	0
Dehydrators [98.236(c)(4)]	Yes	Go to Form	0	0	0	0
Well Venting for Liquids Unloading [98.236(c)(5)]	Yes	Go to Form	0	0	N/A	0
Gas Well Completions and Workovers [98.236(c)(6)]	Yes	Go to Form	0	0	0	0
Blowdown Vent Stacks [98.236(c)(7)]	No	Go to Form	0	0	N/A	0
Gas from Produced Oil Sent to Atmospheric Tanks [98.236(c)(8)]	Yes	Go to Form	0	0	0	0
Transmission Tanks [98.236(c)(9)]	No	Go to Form	0	0	0	0
Well Testing Venting and Flaring [98.236(c)(10)]	Yes	Go to Form	0	0	0	0
Associated Gas Venting and Flaring [98.236(c)(11)]	Yes	Go to Form	0	0	0	0
Flare Stacks [98.236(c)(12)]	Yes	Go to Form	0	0	0	0
Centrifugal Compressors [98.236(c)(13)]	Yes	Go to Form	0	0	N/A	0
Reciprocating Compressors [98.236(c)(14)]	Yes	Go to Form	0	0	N/A	0
Other Emissions from Equipment Leaks Estimated Using Emission Factors [98.236(c)(15)]	Yes	Go to Form	0	0	N/A	0
Local Distribution Companies [98.236(c)(16)]	No	Go to Form	0	0	N/A	0
Enhanced Oil Recovery Injection Pump Blowdown [98.236(c)(17)]	Yes	Go to Form	0	N/A	N/A	0
Enhanced Oil Recovery Hydrocarbon Liquids Dissolved CO_2 [98.236(c)(18)]	Yes	Go to Form	0	N/A	N/A	0
Onshore Petroleum and Natural Gas Production and Natural Gas Distribution Combustion Emissions [98.236(c)(19)]	Yes	Go to Form	0	0	0	0
Offshore Sources [98.236(c)(19)]	No	Go to Form	0	0	0	0
			0	**0**	**0**	**0**

Introduction | Sub-Basin Selection | (1) Pneumatic Device Venting | (2) NG Driven Pneumatic Pumps | (3) Acid Ga

Subpart W Reporting Form: Pneumatic Devices

Worksheet Instructions:
In accordance with 98.232, only the following industry segments must report data for natural gas pneumatic device venting: -Onshore petroleum and natural gas production [98.230(a)(2)] -Onshore natural gas transmission compression [98.230(a)(4)] -Underground natural gas storage [98.230(a)(5)]

External Links:	
Subpart W Resources Page	http://www.epa.gov/climatechange/emissions/subpart/w.html
Optional Calculation Spreadsheet	http://www.ccdsupport.com/...Optional+Calculation+Spreadsheet+Instructions
Help Resources	http://www.ccdsupport.c...Subpart+W+-+Petroleum+and+Natural+Gas+Systems

1

Total Emissions for Pneumatic Device Venting [98.236(c)]			
mt CO_2	mt CH_4 ($mt\ CO_2e$)	mt N_2O ($mt\ CO_2e$)	Total Emissions ($mt\ CO_2e$)
0	0	N/A	0

2

Does the Facility have any continuous high-bleed pneumatic devices subject to reporting under 98.232?	◯ Yes ◯ No
Does the Facility have any intermittent bleed pneumatic devices subject to reporting under 98.232?	◯ Yes ◯ No
Does the Facility have any continuous low-bleed pneumatic devices subject to reporting under 98.232?	◯ Yes ◯ No

Best Available Monitoring Methods (BAMM) and Missing Data:

Were BAMM used for any parameters to calculate GHG emissions? [98.3(c)(7)]	Provide a brief description of each BAMM used, parameter measured, and time period. [98.3(c)(7)]	Were missing data procedures used for any parameters to calculate GHG emissions? [98.235]

3

Type of Pneumatic Device	Total CO_2 Emissions ($mt\ CO_2$) [98.236(c)(1)(iv)]	Total CH_4 Emissions ($mt\ CO_2e$) [98.236(c)(1)(iv)]
High-bleed Pneumatic Devices		
Intermittent Bleed Pneumatic Devices		
Low-Bleed Pneumatic Devices		

4

Subpart W Reporting Form: Sub-Basin Information

Provide information for each applicable sub-basin in the following tables:

Select the Basin in which applicable Sub-Basins are Located

1

Select the County in which the Sub-Basin is located	Select the Formation Type of the Sub-Basin	Sub-Basin ID	Complete These Rows ONLY if the Formation Type is Oil		
			Best Available Estimate of API Gravity (degrees) [98.236(e)]	Best Available Estimate of Gas-to-Oil Ratio (cubic feet of gas per barrel of oil) [98.236(e)]	Best Available Estimate of Average Low Pressure Separator Pressure (psia)

2

3

4

Gas Well Completions and Workovers With and Without Hydraulic Fracturing

1

Total Emissions for Gas Well Completions and Workovers [98.236(c)]			
mt CO_2	mt CH_4 (mt CO_2e)	mt N_2O (mt CO_2e)	Total Emissions (mt CO_2e)
0	0	0	0

Did the facility have any gas well completions or workovers WITH hydraulic fracturing?	(●) Yes ( ) No
Did the facility have any gas well completions or workovers WITHOUT hydraulic fracturing?	(●) Yes ( ) No

2

Best Available Monitoring Methods (BAMM) and Missing Data:

Were BAMM used for any parameters to calculate GHG emissions? [98.3(c)(7)]	Provide a brief description of the BAMM used, parameter measured, and time period. [98.3(c)(7)]	Were missing data procedures used for any parameters to calculate GHG emissions? [98.235]

For gas well completions and workovers WITH hydraulic fracturing:	CLICK HERE
For gas well completions and workovers WITHOUT hydraulic fracturing:	CLICK HERE

3

Gas Well Completions and Workovers With Hydraulic Fracturing

Sub-Basin ID [98.236(c)(6)]	Well Type (Select from list) [98.236(c)(6)(i)]	Select the Equation Used to Calculate Emissions From Gas Well Completions With Hydraulic Fracturing [98.236(c)(6)(i)]	Select the Equation Used to Calculate Emissions From Gas Well Workovers With Hydraulic Fracturing [98.236(c)(6)(i)]	Total Count of All Types of Completions Combined 98.236(c)(6)(i)(A)]	Total Count of Workovers that Flare Gas [98.236(c)(6)(i)(C)]	Total Count of Workovers that Vent Gas to the Atmosphere [98.236(c)(6)(i)(C)]	CO_2 Emissions from Venting for Completions (mt CO_2) 98.236(c)(6)(i)(I)]	CH_4 Emissions from Venting for Completions (mt CO_2e) [98.236(c)(6)(i)(I)]	CO_2 Emissions from Flaring for Completions (mt CO_2) [98.236(c)(6)(i)(J)]	CH_4 Emissions from Flaring for Completions (mt CO_2e) [98.236(c)(6)(i)(J)]	N_2O Emissions from Flaring for Completions (mt CO_2e) [98.236(c)(6)(i)(J)]

1 2 3

CO_2 Emissions from Venting for Workovers (mt CO_2) [98.236(c)(6)(i)(I)]	CH_4 Emissions from Venting for Workovers (mt CO_2e) [98.236(c)(6)(i)(I)]	CO_2 Emissions from Flaring for Workovers (mt CO_2) [98.236(c)(6)(i)(J)]	CH_4 Emissions from Flaring for Workovers (mt CO_2e) [98.236(c)(6)(i)(J)]	N_2O Emissions from Flaring for Workovers (mt CO_2e) [98.236(c)(6)(i)(J)]	Number of well completions that employed purposely designed equipment that separates natural gas from the backflow	Number of workovers that employed purposely designed equipment that separates natural gas from the backflow

4 5

Gas Well Completions and Workovers without Hydraulic Fracturing

Complete the following table for gas well completions and workovers *without* hydraulic fracturi | GO BACK

Sub-Basin ID [98.236(c)(6)]	Total Number of days of gas venting during backflow for completion [98.236(c)(6)(ii)(C)]	CO_2 Emissions from Venting for Completions and Workovers (mt CO_2) [98.236(c)(6)(ii)(D)]	CH_4 Emissions from Venting for Completions and Workovers (mt CO_2e) [98.236(c)(6)(ii)(D)]	CO_2 Emissions from Flaring for Completions and Workovers (mt CO_2) [98.236(c)(6)(ii)(E)]	CH_4 Emissions from Flaring for Completions and Workovers (mt CO_2e) [98.236(c)(6)(ii)(E)]	N_2O Emissions from Flaring for Completions and Workovers (mt CO_2e) [98.236(c)(6)(ii)(E)]

1 2 3

Centrifugal Compressor

1

Total Emissions for Centrifugal Compressors [98.236(c)]			
mt CO_2	mt CH_4 (mt CO_2e)	mt N_2O (mt CO_2e)	Total Emissions (mt CO_2e)
0	0	N/A	0

Does the facility have any centrifugal compressors with wet or dry seals subject to reporting under 98.232? (●) Yes ( ) No

2

Best Available Monitoring Methods (BAMM) and Missing Data:

Were BAMM used for any parameters to calculate GHG emissions? [98.3(c)(7)]	Provide a brief description of the BAMM used, parameter measured, and time period. [98.3(c)(7)]	Were missing data procedures used for any parameters to calculate GHG emissions? [98.235]

Centrifugal Compressors - Onshore Production Industry Segment

For Onshore Petroleum and Natural Gas Production Only	
Total annual compressor emissions CO2 Emissions (mt CO2) [98.236(c)(13)(v)(B)]	Total annual compressor emissions CH4 Emissions (mt CO2e) [98.236(c)(13)(v)(B)]

3

Compressor ID	Were BAMM Used for This Compressor?	Seal Type (wet or dry)	For Centrifugal Compressors in OPERATI							
			For Centrifugal Compressors with WET SEALS							
			Annual throughput using an engineering calculation based on best available data (MMscf)	Number of wet seals connected to the degassing vent [98.236(c)(13)(i)(A)]	Type of meter used for making measurements	Fraction of vent gas recovered for fuel [98.236(c)(13)(i)(B)]	Fraction of vent gas recovered for sales [98.236(c)(13)(i)(B)]	Fraction of vent gas recovered and flared	Measured	
									Seal vent CO_2 emissions (mt CO_2)	Seal vent CH_4 emissions (mt CO_2e)
[redacted]										

Centrifugal Compressors – Other Applicable Industry Segments

4

Compressor ID	Were BAMM Used for This Compressor?	Seal Type (wet or dry)	For Centrifugal Compressors in OPERATI							
			For Centrifugal Compressors with WET SEALS							
			Annual throughput using an engineering calculation based on best available data (MMscf)	Number of wet seals connected to the degassing vent [98.236(c)(13)(i)(A)]	Type of meter used for making measurements [98.236(c)(13)(i)(D)]	Fraction of vent gas recovered for fuel [98.236(c)(13)(i)(B)]	Fraction of vent gas recovered for sales [98.236(c)(13)(i)(B)]	Fraction of vent gas recovered and flared [98.236(c)(13)(i)(B)]	Measured	
									Seal vent CO_2 emissions ($mt\ CO_2$) [98.236(c)(13)(i)(G)]	Seal vent CH_4 emissions ($mt\ CO_2e$) [98.236(c)(13)(i)(G)]

5

	For Centrifugal Compressors in OPERATING MODE									
	For Centrifugal Compressors with WET SEALS									
	Annual throughput using an engineering calculation based on best available data (MMscf)	Number of wet seals connected to the degassing vent [98.236(c)(13)(i)(A)]	Type of meter used for making measurements [98.236(c)(13)(i)(D)]	Fraction of vent gas recovered for fuel [98.236(c)(13)(i)(B)]	Fraction of vent gas recovered for sales [98.236(c)(13)(i)(B)]	Fraction of vent gas recovered and flared [98.236(c)(13)(i)(B)]	Measured		Not Measured	
							Seal vent CO_2 emissions ($mt\ CO_2$) [98.236(c)(13)(i)(G)]	Seal vent CH_4 emissions ($mt\ CO_2e$) [98.236(c)(13)(i)(G)]	Seal vent CO_2 emissions ($mt\ CO_2$) [98.236(c)(13)(i)(G)]	Seal vent CH_4 emissions ($mt\ CO_2e$) [98.236(c)(13)(i)(G)]

Centrifugal Compressors – Other Applicable Industry Segments

6

7

For Centrifugal Compressors with WET or DRY SEALS			
Measured		Not Measured	
Blowdown Vent CO2 emissions (mt CO2) [98.236(c)(13)(ii)(C)]	Blowdown Vent CH4 emissions (mt CO2e) [98.236(c)(13)(ii)(C)]	Blowdown Vent CO2 emissions (mt CO2) [98.236(c)(13)(ii)(C)]	Blowdown Vent CH4 emissions (mt CO2e) [98.236(c)(13)(ii)(C)]

Centrifugal Compressors – Other Applicable Industry Segments

For Centrifugal Compressors in NOT OPERATING, DEPRESSURIZED MODE			
For Centrifugal Compressors with WET or DRY SEALS			
Measured		Not Measured	
Isolation valve leakage CO2 emissions (mt CO2) [98.236(c)(13)(iii)(C)]	Isolation valve leakage CH4 emissions (mt CO2e) [98.236(c)(13)(iii)(C)]	Isolation valve leakage CO2 emissions (mt CO2) [98.236(c)(13)(iii)(C)]	Isolation valve leakage CH4 emissions (mt CO2e) [98.236(c)(13)(iii)(C)]

8

9

Centrifugal Compressors – Other Applicable Industry Segments

For Centrifugal Compressors Venting Emissions to FLARES				For Centrifugal Compressors in ALL OPERATING MODES		
Does this compressor route gas to a flare? [98.236(c)]	Total annual CO_2 emissions from flaring for all modes of operation combined (mt CO_2) [98.236(c)]	Total annual CH_4 emissions from flaring for all modes of operation combined (mt CO_2e) [98.236(c)]	Total annual N_2O emissions from flaring for all modes of operation combined (mt CO_2e) [98.236(c)]	Total annual CO_2 emissions from all modes of operation combined (mt CO_2) [98.236(c)(13)(iv)]	Total annual CH_4 emissions from all modes of operation combined (mt CO_2e) [98.236(c)(13)(iv)]	Total annual N_2O emissions from all modes of operation combined (mt CO_2e) [98.236(c)]

10

11

Reciprocating Compressors

Total Emissions for Reciprocating Compressors [98.236(c)]			
mt CO_2	mt CH_4 (CO_2e)	mt N_2O (CO_2e)	Total Emissions (CO_2e)
0	0	0	0

1

Does the facility have any reciprocating compressors subject to reporting under 98.232? ◯ Yes ◯ No

2

Best Available Monitoring Methods (BAMM) and Missing Data:

Were BAMM used for any parameters to calculate GHG emissions? [98.3(c)(7)]	Provide a brief description of the BAMM used, parameter measured, and time period. [98.3(c)(7)]	Were missing data procedures used for any parameters to calculate GHG emissions? [98.235]

3

For Onshore Petroleum and Natural Gas Production Only	
Total annual compressor emissions CO_2 Emissions (mt CO_2) [98.236(c)(14)(v)(B)]	Total annual compressor emissions CH_4 Emissions (CO_2e) [98.236(c)(14)(v)(B)]

4

Reciprocating Compressors – Other Applicable Industry Segments

5 6 7

Compressor ID	Were BAMM Used for This Compressor?	Annual throughput using an engineering calculation based on best available data (million SCF) [98.236(c)(14)(i)(A)]	Were blowdown vents manifolded to rod packing vents for this compressor? [98.236(c)(14)(ii)]

For Reciprocating Compressors in OPERATING MODE							
Measured		Not Measured		Measured		Not Measured	
Rod packing CO_2 emissions when in operating mode (mt CO_2) [98.236(c)(14)(i)(C)]	Rod packing CH_4 emissions when in operating mode (mt CO_2e) [98.236(c)(14)(i)(C)]	Rod packing CO_2 emissions when in operating mode (mt CO_2) [98.236(c)(14)(i)(C)]	Rod packing CH_4 emissions when in operating mode (mt CO_2e) [98.236(c)(14)(i)(C)]	Blowdown vent CO_2 emissions when in operating mode (mt CO_2) [98.236(c)(14)(ii)(C)]	Blowdown vent CH_4 emissions when in operating mode (mt CO_2e) [98.236(c)(14)(ii)(C)]	Blowdown vent CO_2 emissions when in operating mode (mt CO_2) [98.236(c)(14)(ii)(C)]	Blowdown vent CH_4 emissions when in operating mode (mt CO_2e) [98.236(c)(14)(ii)(C)]

Reciprocating Compressors – Other Applicable Industry Segments

For Reciprocating Compressors in STANDBY, PRESSURIZED MODE				For Reciprocating Compressors in NOT OPERATING, DEPRESSURIZED MODE			
Measured		Not Measured		Measured		Not Measured	
Blowdown vent CO_2 emissions when in standby pressurized mode ($mt\ CO_2$) [98.236(c)(14)(ii)(C)]	Blowdown vent CH_4 emissions when in standby pressurized mode ($mt\ CO_2e$) [98.236(c)(14)(ii)(C)]	Blowdown vent CO_2 emissions when in standby pressurized mode ($mt\ CO_2$) [98.236(c)(14)(ii)(C)]	Blowdown vent CH_4 emissions when in standby pressurized mode ($mt\ CO_2e$) [98.236(c)(14)(ii)(C)]	Isolation valve leakage CO_2 emissions in not operating, depressurized mode ($mt\ CO_2$) [98.236(c)(14)(iii)(C)]	Isolation valve leakage CH_4 emissions in not operating, depressurized mode ($mt\ CO_2e$) [98.236(c)(14)(iii)(C)]	Isolation valve leakage CO_2 emissions in not operating, depressurized mode ($mt\ CO_2$) [98.236(c)(14)(iii)(C)]	Isolation valve leakage CH_4 emissions in not operating, depressurized mode ($mt\ CO_2e$) [98.236(c)(14)(iii)(C)]

Reciprocating Compressors – Other Applicable Industry Segments

10

11

For Reciprocating Compressors Venting Emissions to FLARES				For Reciprocating Compressors in ALL MODES		
Does this compressor route gas to a flare? [98.236(c)]	Total annual CO_2 emissions from flaring for all modes of operation combined (mt CO_2) [98.236(c)]	Total annual CH_4 emissions from flaring for all modes of operation combined (mt CO_2e) [98.236(c)]	Total annual N_2O emissions from flaring for all modes of operation combined (mt CO_2e) [98.236(c)]	Total annual CO_2 emissions from all modes of operation combined (mt CO_2) [98.236(c)(14)(iv)]	Total annual CH_4 emissions from all modes of operation combined (mt CO_2e) [98.236(c)(14)(iv)]	Total annual N_2O emissions from all modes of operation combined (mt CO_2e) [98.236(c)]

Equipment Leaks

1

Total Other Emissions from Equipment Leaks Estimated Using Emission Factors [98.236(c)]			
mt CO_2	mt CH_4 ($mt\ CO_2e$)	mt N_2O ($mt\ CO_2e$)	Total Emissions ($mt\ CO_2e$)
0	0	N/A	0

2

Does the facility have any equipment leaks subject to reporting under 98.232? (●) Yes ( ) No

Best Available Monitoring Methods (BAMM) and Missing Data:

Were BAMM used for any parameters to calculate GHG emissions? [98.3(c)(7)]	Provide a brief description of the BAMM used, parameter measured, and time period. [98.3(c)(7)]	Were missing data procedures used for any parameters to calculate GHG emissions? [98.235]

3

Equipment Leaks contd.,

Complete the following table for each component type that uses emission factors for estimating emissions for equipment leaks found in each leak survey:

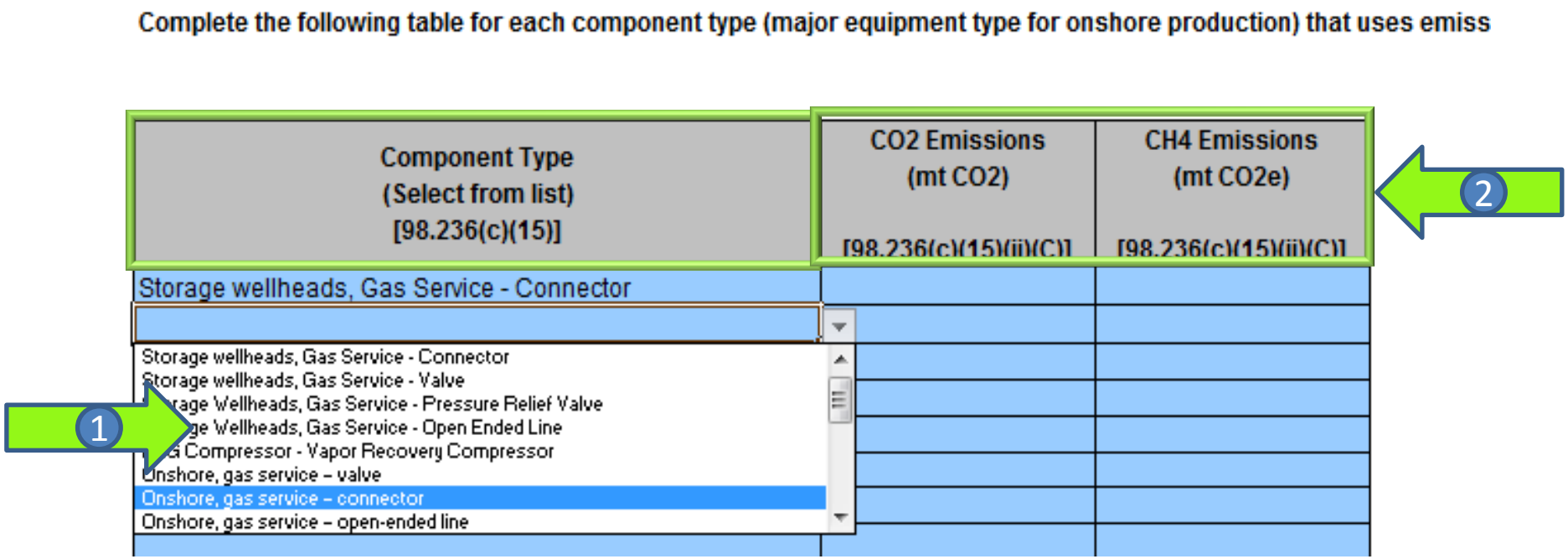
Component Type (Select from list) [98.236(c)(15)]	Date of first complete survey [98.236(c)(15)(i)(A)]	Total count of leaks found in the first survey [98.236(c)(15)(i)(A)]	Date of second complete survey (if applicable) [98.236(c)(15)(i)(A)]	Total count of leaks found in the second survey (if applicable) [98.236(c)(15)(i)(A)]	Date of third complete survey (if applicable) [98.236(c)(15)(i)(A)]	Total count of leaks found in the third survey (if applicable) [98.236(c)(15)(i)(A)]	Date of fourth complete survey (if applicable) [98.236(c)(15)(i)(A)]	Total count of leaks found in the fourth survey (if applicable) [98.236(c)(15)(i)(A)]

Equipment Leaks contd.,

	Complete ONLY for Onshore Natural Gas Processing				DO NOT complete these columns if you selected Natural Gas Distribution as your industry segment. LDCs should report emissions on tab 16 - Local Distribution Companies	
	Range of Concentrations of CO_2 (volumetric fraction)		Range of Concentrations of CH_4 (volumetric fraction)			
	Minimum concentration of CO_2 (volumetric fraction) [98.236(c)(15)(i)(B)]	Maximum concentration of CO (volumetric fraction) [98.236(c)(15)(i)(B)]	Minimum concentration of CH_4 (volumetric fraction) [98.236(c)(15)(i)(B)]	Maximum concentration of CH_4 (volumetric fraction) [98.236(c)(15)(i)(B)]	CO_2 Emissions (mt CO_2) [98.236(c)(15)(i)(C)]	CH_4 Emissions (mt CO_2e) [98.236(c)(15)(i)(C)]

9 10 11

Equipment Leaks for Onshore Production and Population Count EF's



Local Distribution Company

Total Emissions for Local Distribution Company [98.236(c)]			
mt CO_2	mt CH_4 ($mt\ CO_2e$)	mt N_2O ($mt\ CO_2e$)	Total Emissions ($mt\ CO_2e$)
0	0	N/A	0

1

Best Available Monitoring Methods (BAMM) and Missing Data:

Were BAMM used for any parameters to calculate GHG emissions? [98.3(c)(7)]	Provide a brief description of the BAMM used, parameter measured, and time period. [98.3(c)(7)]	Were missing data procedures used for any parameters to calculate GHG emissions? [98.235]

2

Local Distribution Company contd.,

NOTE: If you do not have any metering-regulating stations or transmission-distribution transfer stations, enter zero, do not leave blank.

Complete the following table for the facility:

Total number of above grade T-D transfer stations [98.236(c)(16)(i)]	
Number of years over which all T-D transfer stations will be monitored at least once [98.236(c)(16)(ii)]	
Number of T-D stations monitored in calendar year [98.236(c)(16)(iii)]	
Total number of below grade T-D transfer stations [98.236(c)(16)(iv)]	
Total number of above grade metering-regulating stations (this count will include above grade T-D transfer stations) [98.236(c)(16)(v)]	
Total number of below grade metering-regulating stations (this count will include below grade T-D transfer stations) [98.236(c)(16)(vi)]	
Annual CO_2 emissions from all above grade T-D transfer stations combined (mt CO_2) [98.236(c)(16)(xvii)]	
Annual CH_4 emissions from all above grade T-D transfer stations combined (mt CO_2e) [98.236(c)(16)(xvii)]	
Annual CO_2 emissions from all below grade T-D transfer stations combined (mt CO_2) [98.236(c)(16)(xviii)]	
Annual CH_4 emissions from all below grade T-D transfer stations	

3

4

Reporting of the following data elements is OPTIONAL NOTE: EPA has deferred the deadline for reporting these data elements until March 31, 2015 You may wait until the 2015 deadline to report these data, or you may voluntarily report these data elements this year. These data elements may be subject to public availability once reported to EPA. Refer to the following page on the EPA website for more information: http://www.epa.gov/climatechange/emissions/CBI.html.	
Leak factor for meter/regulator run developed in Equation W-32 of 98.233 [98.236(c)(16)(viii)] (NOTE: Report the leak factor for CH_4 ONLY)	
Number of miles of unprotected steel distribution mains [98.236(c)(16)(ix)]	
Number of miles of protected steel distribution mains [98.236(c)(16)(x)]	
Number of miles of plastic distribution mains [98.236(c)(16)(xi)]	
Number of miles of cast iron distribution mains [98.236(c)(16)(xii)]	
Number of unprotected steel distribution services [98.236(c)(16)(xiii)]	
Number of protected steel distribution services [98.236(c)(16)(xiv)]	
Number of plastic distribution services [98.236(c)(16)(xv)]	

Offshore Petroleum and Natural Gas Production

1

Total Offshore Source Emissions			
mt CO_2	mt CH_4 ($mt\ CO_2e$)	mt N_2O ($mt\ CO_2e$)	Total Emissions ($mt\ CO_2e$)
0	0	0	0

Best Available Monitoring Methods (BAMM) and Missing Data:

2

Were BAMM used for any parameters to calculate GHG emissions? [98.3(c)(7)]	Provide a brief description of the BAMM used, parameter measured, and time period. [98.3(c)(7)]	Were missing data procedures used for any parameters to calculate GHG emissions? [98.235]

3

Emission Source [98.236(b)]	mt CO_2 [98.236(b)]	mt CH_4 ($mt\ CO_2e$) [98.236(b)]	mt N_2O ($mt\ CO_2e$) [98.236(b)]	Total Emissions for Source ($mt\ CO_2e$)
Amine Unit				0.0
Combustion Flares - Light Smoke - No Pilot Fuel-flaring				0.0
Combustion Flares - Light Smoke - Pilot Fuel - pilot				0.0
Combustion Flares - Light Smoke - Pilot Fuel-flaring				0.0

4

Questions?

- GHG Reporting Program Information & Help
  - www.epa.gov/ghgreporting/reporters/index.html
  - mail: ghgreporting@epa.gov
- Subpart W GHG website
  - http://www.epa.gov/ghgreporting/reporters/subpart/w.html