Equipment Leaks Surveys and Population Counts

This page provides an overview of the other emissions from equipment leaks estimated using emission factors source type reporting requirements for Subpart W.

Please see Reporting Form Instructions on downloading the blank reporting form and uploading the completed reporting form.
You may also refer to Optional Calculation Spreadsheet Instructions to download the Subpart W calculation spreadsheet.

The other emissions from equipment leaks estimated using emission factors source type is applicable to following industry segments:

- 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)]
- Onshore petroleum and natural gas gathering and boosting [98.230(a)(9)]

Indicate the method used to calculate emissions for this source type via the picklist selection.

Applicability	
Did this facility use leak surveys to calculate emissions from equipment leaks in accordance with 98.232 [per 98.236(q)]?	
Did this facility use population counts to calculate emissions from equipment leaks in accordance with 98.232 [per 98.236(r)]?	
Did the facility elect to comply with 98.236(q) according to 98.233(q)(1)(iv) for any components at the facility [per 98.236(q)(1)(iv)]?	

If you have questions about how you should respond to the applicability questions, follow this link for additional help content.

If the facility has the source type, then indicate whether missing data procedures were used.

Best Available Monitoring Methods (BAMM) and Missing Data

Were BAMM used for any parameters to calculate GHG emissions?	Provide a brief description of the BAMM used, parameter measured, and time period.	Were missing data procedures used for any parameters to calculate GHG emissions? [98.235]
BAMM not available for Equipment Leaks		

Reporting Requirements

Table Q.1 Leak Survey Characterization must be completed for each facility that completed a leak survey. Required data elements include:

- Number of complete equipment leak surveys performed during the calendar year (98.236(q)(1)(i))
- For Natural gas distribution facilities conducting multi-year surveys, number of years in the leak survey cycle (98.236(q)(1)(ii))
- Method Use to Conduct Leak Surveys (98.236(q)(1)(v)) Select “Yes” from the picklist for all that apply:
    - Optical gas imaging instrument as specified in §60.18 (98.234(a)(1))

- Method 21 (98.234(a)(2))
- Infrared laser beam illuminated instrument (98.234(a)(3))
- Acoustic leak detection devices (98.234(a)(5))
- Optical gas imaging instrument as specified in §60.5397a (98.234(a)(6))
- Method 21 as specified in §60.5397a (98.234(a)(7))

Table Q.1 Leak Survey Characterization

Table Q.1 Leak Survey Characterization

		Method Used to Conduct Leak Surveys [98.236(q)(1)(v)] Select all that apply					
Number of complete equipment leak surveys performed during the calendar year [98.236(q)(1)(i)]	For Natural gas distribution facilities conducting multi-year surveys, number of years in the leak survey cycle [98.236(q)(1)(ii)]	Optical gas imaging instrument as specified in §60.18 [98.234(a)(1)]	Method 21 [98.234(a)(2)]	Infrared laser beam illuminated instrument [98.234(a)(3)]	Acoustic leak detection device [98.234(a)(5)]	Optical gas imaging instrument as specified in §60.5397a [98.234(a)(6)]	Method 21 as specified in §60.5397a [98.234(a)(7)]

Table Q.2 Emissions calculated for component types using emissions factors must be completed for each facility for each component type that uses emission factors for estimating emissions for equipment leaks found in each leak survey. Report the count of components surveyed of all component types and the emissions from those component types (as calculated by Equation W-30) for your industry segment. Note that certain component types are only required if they are subject to the well site or compressor station fugitive emissions standards in 40 CFR 60.5397a or if the facility elected to comply with 98.236(q) as indicated in the applicability questions. If no leaks were identified from any components of a component type during the leak survey, enter "0" (zero) in columns G through I for that component type. Required data elements include:

- Component type (98.236(q)(2)(i)) - this data element is autofilled in the Smart Form
- Total number of surveyed component type identified as leaking (98.236(q)(2)(ii))
- Average time the surveyed components are assumed to be leaking and operational (98.236(q)(2)(iii))
- CO_2 emissions (surveyed components identified as leaking only) (mt CO_2) (98.236(q)(2)(iv))
- CH4 emissions (surveyed components identified as leaking only) (mt CH_4) (98.236(q)(2)(v))

Table Q.2 Emissions calculated for component types using emissions factors

Report the count of components surveyed of all component types and the emissions from those component types (as calculated by Equation W-30) for your industry segment. ***If no leaks were identified from any components of a component type during the leak survey, enter "0" in columns G through I for that component type.***	**Component Type** **[98.236(q)(2)(i)]**	**Total number of surveyed component type identified as leaking, x_p** **[98.236(q)(2)(ii)]**	**Average time the surveyed components are assumed to be leaking and operational, $T_{p,z}$ (hours)** **[98.236(q)(2)(iii)]**	**CO_2 Emissions (surveyed components identified as leaking only) (mt CO_2)** **[98.236(q)(2)(iv)]**	**CH_4 Emissions (surveyed components identified as leaking only) (mt CH_4)** **[98.236(q)(2)(v)]**
Onshore petroleum and natural gas production and Onshore petroleum and natural gas gathering and boosting [98.232(c)(21) and (j)10)] (Table W-1E)	Onshore Production or GB Components, Gas Service - Valve				
	Onshore Production or GB Components, Gas Service - Flange				
	Onshore Production or GB Components, Gas Service - Connector (other)				
	Onshore Production or GB Components, Gas Service - Open-Ended Line				
	Onshore Production or GB Components, Gas Service - Pressure Relief Valve				
	Onshore Production or GB Components, Gas Service - Pump Seal				
	Onshore Production or GB Components, Gas Service - Other				
	Onshore Production or GB Components, Light Crude Service - Valve				
	Onshore Production or GB Components, Light Crude Service - Flange				
	Onshore Production or GB Components, Light Crude Service - Connector (other)				
	Onshore Production or GB Components, Light Crude Service - Open-Ended Line				
	Onshore Production or GB Components, Light Crude Service - Pump				
	Onshore Production or GB Components, Light Crude Service - Agitator Seal				
	Onshore Production or GB Components, Light Crude Service - Other				
	Onshore Production or GB Components, Heavy Crude Service - Valve				
	Onshore Production or GB Components, Heavy Crude Service - Flange				
	Onshore Production or GB Components, Heavy Crude Service - Connector (other)				
	Onshore Production or GB Components, Heavy Crude Service - Open-Ended Line				
	Onshore Production or GB Components, Heavy Crude Service - Pump				
	Onshore Production or GB Components, Heavy Crude Service - Agitator Seal				
	Onshore Production or GB Components, Heavy Crude Service - Other				
Onshore natural gas processing [98.232(d)(7)] - (Table W-2)	Compressor Components, Gas Service - Valve				
	Compressor Components, Gas Service - Connector				
	Compressor Components, Gas Service - Open-ended Line				
	Compressor Components, Gas Service - Pressure Relief Valve				
	Compressor Components, Gas Service - Meter				
	Non-Compressor Components, Gas Service - Valve				
	Non-Compressor Components, Gas Service - Connector				
	Non-Compressor Components, Gas Service - Open-ended Line				
	Non-Compressor components, Gas Service - Pressure Relief Valve				
	Non-Compressor components, Gas Service - Meter				
Onshore natural gas transmission compression [98.232(e)(7-8)] (Table W-3A)	Compressor Components, Gas Service - Valve				
	Compressor Components, Gas Service - Connector				
	Compressor Components, Gas Service - Open-ended Line				
	Compressor Components, Gas Service - Pressure Relief Valve				
	Compressor Components, Gas Service - Meter or Instrument				
	Compressor Components, Gas Service - Other				
	Non-Compressor Components, Gas Service - Valve				
	Non-Compressor Components, Gas Service - Connector				
	Non-Compressor Components, Gas Service - Open-ended Line				
	Non-Compressor components, Gas Service - Pressure Relief Valve				
	Non-Compressor components, Gas Service - Meter or Instrument				
	Non-Compressor components, Gas Service - Other				
Underground natural gas storage [98.232(f)(5-8)] (Table W-4A)	Storage Station, Gas Service - Valve				
	Storage Station, Gas Service - Connector (other)				
	Storage Station, Gas Service - Open-ended Line				
	Storage Station, Gas Service - Pressure Relief Valve				
	Storage Station, Gas Service - Meter and Instrument				
	Storage Station, Gas Service - Other				
	Storage Wellheads, Gas Service - Valve				
	Storage Wellheads, Gas Service - Connector (other than flanges)				
	Storage Wellheads, Gas Service - Flange				
	Storage Wellheads, Gas Service - Open-Ended Line				
	Storage Wellheads, Gas Service - Pressure Relief Valve				
	Storage Wellheads, Gas Service - Other				
Liquefied natural gas (LNG) storage [98.232(q)(4,6,7)] (Table W-5A)	LNG Storage, LNG Service - Valve				
	LNG Storage, LNG Service - Connector				
	LNG Storage, LNG Service - Pump Seal				
	LNG Storage, LNG Service - Other				
	LNG Storage, Gas Service - Valve				
	LNG Storage, Gas Service - Connector				
	LNG Storage, Gas Service - Open-Ended Line				
	LNG Storage, Gas Service - Pressure Relief Valve				
	LNG Storage, Gas Service - Meter and Instrument				
	LNG Storage, Gas Service - Other				
LNG import and export equipment [98.232(h)(5,7,8)] (Table W-6A)	LNG Terminal, LNG Service - Valve				
	LNG Terminal, LNG Service - Connector				
	LNG Terminal, LNG Service - Pump Seal				
	LNG Terminal, LNG Service - Other				
	LNG Terminal, Gas Service - Valve				
	LNG Terminal, Gas Service - Connector				
	LNG Terminal, Gas Service - Open-ended Line				
	LNG Terminal, Gas Service - Pressure Relief Valve				
	LNG Terminal, Gas Service - Meter and Instrument				
	LNG Terminal, Gas Service - Other				
Natural gas distribution [Note: limited to equipment leaks at above grade transmission-distribution transfer stations] [98.232(i)(1)] (Table W-7)	Transmission-Distribution Transfer Station Components, Gas Service - Connector				
	Transmission-Distribution Transfer Station Components, Gas Service - Block Valve				
	Transmission-Distribution Transfer Station Components, Gas Service - Control Valve				
	Transmission-Distribution Transfer Station Components, Gas Service - Pressure Relief Valve				
	Transmission-Distribution Transfer Station Components, Gas Service - Orifice Meter				
	Transmission-Distribution Transfer Station Components, Gas Service - Regulator				
	Transmission-Distribution Transfer Station Components, Gas Service - Open-ended line				

Table Q.3 Natural gas distribution facility activity and emissions must be completed by *Natural gas distribution facilities* with emission sources listed in 98.232(i)(1). Report the leak survey data from above grade T-D transfer stations and meter/regulator runs for the calendar year and for the current leak survey cycle. NOTE: If you do not have any metering-regulating stations or transmission-distribution (T-D) transfer stations, enter "0" (zero) into these fields; do not leave the fields blank.

Required data elements include:

- For leaks surveyed in the calendar year:
    - Total number of above grade T-D transfer stations (98.236(q)(3)(i))
    - Number of meter/regulator runs at above grade T-D transfer stations surveyed in the calendar year (98.236(q)(3)(ii))
    - Average time meter/regulator runs surveyed in calendar year were operational (98.236(q)(3)(iii))
- For leaks surveyed in the current leak survey cycle:
    - Number of above grade T-D transfer stations surveyed in current leak survey cycle (98.236(q)(3)(iv))
    - Number of meter/regulator runs at above grade T-D transfer stations surveyed in current leak survey cycle (98.236(q)(3)(v))
    - Average time that meter/regulator runs surveyed in the current leak survey cycle were operational (98.236(q)(3)(vi))

    - Meter/regulator run CO_2 emission factor based on all surveyed T-D transfer stations in current leak cycle, Average of current survey (standard cubic feet per operational hour of all meter/regulator runs) (98.236(q)(3)(vii))
    - Meter/regulator run CH_4 emission factor based on all surveyed T-D transfer stations in current leak cycle, Average of current survey (standard cubic feet per operational hour of all meter/regulator runs) (98.236(q)(3)(viii))
- Does the facility perform equipment leak surveys across a multiple year leak survey cycle? If 'yes' (98.236(q)(3)(ix)):
    - Total number of meter/regulator runs at above grade T-D station facilities (98.236(q)(3)(ix)(A))
    - Average estimated time that each meter/regulator run at above grade T-D transfer stations was operational in the calendar year (hours) (98.236(q)(3)(ix)(B))
    - Annual CO_2 emissions from all above grade T-D transfer stations combined (mt CO_2) (98.236(q)(3)(ix)(C))
    - Annual CH_4 emissions from all above grade T-D transfer stations combined (mt CH_4) (98.236(q)(3)(ix)(D))

Table Q.3 Natural gas distribution facility activity and emissions

Surveyed in calendar year:

Total number of above grade T-D transfer stations surveyed in the calendar year [98.236(q)(3)(i)]	
Number of meter/regulator runs at above grade T-D transfer stations surveyed in the calendar year, $Count_{MR,y}$ [98.236(q)(3)(ii)]	
Average time meter/regulator runs surveyed in calendar year were operational, Average of calendar year $T_{w,y}$ (hours) [98.236(q)(3)(iii)]	

Surveyed in current leak survey cycle:

Number of above grade T-D transfer stations surveyed in current leak survey cycle [98.236(q)(3)(iv)]	
Number of meter/regulator runs at above grade T-D transfer stations surveyed in current leak survey cycle, Sum of $Count_{MR,y}$ [98.236(q)(3)(v)]	
Average time that meter/regulator runs surveyed in the current leak survey cycle were operational, Average of current survey $T_{w,y}$ (hours) [98.236(q)(3)(vi)]	
Meter/regulator run CO_2 emission factor based on all surveyed T-D transfer stations in current leak cycle, Average of current survey $EF_{S,MR,i}$ (standard cubic feet per operational hour of all meter/regulator runs) [98.236(q)(3)(vii)]	
Meter/regulator run CH_4 emission factor based on all surveyed T-D transfer stations in current leak cycle, Average of current survey $EF_{S,MR,i}$ (standard cubic feet per operational hour of all meter/regulator runs) [98.236(q)(3)(viii)]	

Surveyed in multiple year leak survey cycle:

Does the facility perform equipment leak surveys across a multiple year leak survey cycle (Yes/No) [98.236(q)(3)(ix)]	
Total number of meter/regulator runs at above grade T-D station facilities, $Count_{MR}$	

[98.236(q)(3)(ix)(A)]	
Average estimated time that each meter/regulator run at above grade T-D transfer stations was operational in the calendar year, $T_{w,avg}$ (hours) [98.236(q)(3)(ix)(B)]	
Annual CO_2 emissions from all above grade T-D transfer stations combined (mt CO_2) [98.236(q)(3)(ix)(C)]	
Annual CH_4 emissions from all above grade T-D transfer stations combined (mt CH_4) [98.236(q)(3)(ix)(D)]	

Table R.1 Equipment leaks calculated using population counts and factors must be completed only by Onshore petroleum and natural gas production and Onshore petroleum and natural gas gathering and boosting facilities. NOTE: Do not complete this table for any emission source types /components that are subject to the well site or compressor station fugitive emissions standards in 40 CFR 60.5397a or emission source types/components for which the facility elected to comply with 98.236(q) according to 98.233(q)(1)(iv). Required data elements include:

- Emission source types (98.232(c)(21) and (r))
  Geographic location (98.236(r)(1)(i))
- Total number of emission source type (for gathering pipelines, this value is the number of miles of pipeline per material type) (98.236(r)(1)(ii))
- Average estimated time that the emission source type was operational in the calendar year (hours) (98.236(r)(1)(iii))
- CO_2 emissions (mt CO_2) (98.236(r)(1)(iv))
- CH_4 emissions (mt CH_4) (98.236(r)(1)(v))

Table R.1 Equipment leaks calculated using population counts and factors (for Onshore Petroleum and Natural Gas Production and Onshore Petroleum and Natural Gas Gathering and Boosting only)

Emission Source Type (Eq. W-32A) [98.232(c)(21)] [98.233(r)]	Geographic Location (according to Table W-1D) [98.236(r)(1)(i)]	Total number of emission source type, $Count_s$ (for gathering pipelines, this value is the number of miles of pipeline per material type) [98.236(r)(1)(ii)]	Average estimated time that the emission source type was operational in the calendar year, T_s (hours) [98.236(r)(1)(iii)]	CO_2 Emissions (mt CO_2) [98.236(r)(1)(iv)]	CH_4 Emissions (mt CH_4) [98.236(r)(1)(v)]
Gas Service - Valves					
Gas Service - Connectors					
Gas Service - Open ended lines					
Gas Service - Pressure relief valves					
Light crude service - Valves					
Light crude service - Flanges					
Light crude service - Connectors					
Light crude service - Open ended lines					
Light crude service - Pumps					
Light crude service - Other equipment leak sources (such as instruments, loading arms, stuffing boxes, compressor seals, dump lever arms, breather caps)					
Heavy crude service - Valves					
Heavy crude service - Flanges					
Heavy crude service - Connectors					
Heavy crude service - Open ended lines					
Heavy crude service - Other equipment leak sources (such as instruments, loading arms, stuffing boxes, compressor seals, dump lever arms, breather caps)					
Gathering pipelines - Protected steel gathering pipeline					
Gathering pipelines - Unprotected steel gathering pipeline					
Gathering pipelines - Plastic/composite gathering pipeline					
Gathering pipelines - Cast iron gathering pipeline					

Table R.2 Emissions calculated for component types by population count must be completed for each component type that population counts for estimating emissions for equipment leaks using Equation W-32A. This table is relevant to the following industry segments: 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)], and Natural gas distribution [98.230(a)(8)]. NOTE: Do not complete this table for any emission source types/components that are subject to the well site or compressor station fugitive emissions standards in 40 CFR 60.5397a or emission source types/components for which the facility elected to comply with 98.236(q) according to 98.233 (q)(1)(iv).The required data elements include:

- Emission source type (98.232, 98.233(r)(1)) - this data element is pre-filled in the Smart Form for each applicable industry segment
- Total number of emission source types (98.236(r)(1)(ii))
- Average estimated time that the emission source type was operational in the calendar year (hours) (98.236(r)(1)(iii))
- CO_2 emissions (mt CO_2) (98.236(r)(1)(iv))
- CH_4 emissions (mt CH_4) (98.236(r)(1)(v))

Table R.2 Emissions calculated for component types by population count

	Emission Source Type (Eq. W-32A) [98.232] [98.233(r)(1)]	Total number of emission source type, $Count_e$ [98.236(r)(1)(ii)]	Average estimated time that the emission source type was operational in the calendar year, T_e (hours) [98.236(r)(1)(iii)]	CO_2 Emissions (mt CO_2) [98.236(r)(1)(iv)]	CH_4 Emissions (mt CH_4) [98.236(r)(1)(v)]
Underground natural gas storage [98.232(f)(5)]	Storage wellheads, Gas Service - Valves				
	Storage wellheads, Gas Service - Connector				
	Storage wellheads, Gas Service - Open-ended line				
	Storage wellheads, Gas Service - Pressure Relief Valve				
Liquified natural gas (LNG) storage [98.232(g)(3)]	LNG Storage Compressor, Gas Service - Vapor Recovery Compressor				
LNG import and export equipment [98.232(h)(4)]	LNG Terminals Compressor, Gas Service - Vapor Recovery Compressor				
Natural gas distribution [98.232(i)(2)]	Below Grade T-D Station, Gas Service, Inlet Pressure > 300 psig				
	Below Grade T-D Station, Gas Service, Inlet Pressure 100 to 300 psig				
	Below Grade T-D Station, Gas Service, Inlet Pressure < 100 psig				
Natural gas distribution [98.232(i)(4)]	Below Grade M-R Station, Gas Service, Inlet Pressure > 300 psig				
	Below Grade M-R Station, Gas Service, Inlet Pressure 100 to 300 psig				
	Below Grade M-R Station, Gas Service, Inlet Pressure < 100 psig				
Natural gas distribution [98.232(i)(5)] (Distribution main equipment)	Distribution Mains, Gas Service - Unprotected Steel				
	Distribution Mains, Gas Service - Protected Steel				
	Distribution Mains, Gas Service - Plastic				
	Distribution Mains, Gas Service - Cast Iron				
Natural gas distribution [98.232(i)(6)] (Distribution services equipment)	Distribution Services, Gas Service - Unprotected Steel				
	Distribution Services, Gas Service - Protected Steel				
	Distribution Services, Gas Service - Plastic				
	Distribution Services, Gas Service - Copper				

Table R.3 Equipment leaks calculated using population counts and factors must be completed for Natural gas distribution facilities, as applicable. The required data elements include:

- Number of above grade T-D transfer stations at the facility (98.236(r)(2)(i))
- Number of above grade metering-regulating stations that are not T-D transfer stations (98.236(r)(2)(ii))
- Total number of meter/regulator runs at above grade metering-regulating stations that are not above grade T-D transfer stations (98.236(r)(2)(iii))
- Average estimated time that each meter/regulator run at above grade metering-regulating stations that are not above grade T-D transfer stations was operational in the calendar year (98.236(r)(2)(iv))
- Annual CO_2 emissions from above grade metering-regulating stations that are not above grade T-D transfer stations (mt CO_2) (98.236(r)(2)(v)(A))
- Annual CH_4 emissions from above grade metering-regulating stations that are not above grade T-D transfer stations (mt CH_4) (98.236(r)(2)(v)(B))

Table R.3 Equipment leaks calculated using population counts and factors (for Natural Gas Distribution only)

Number of above grade T-D transfer stations at the facility	
Number of above grade metering-regulating stations that are not T-D transfer stations [98.236(r)(2)(ii)]	
Total number of meter/regulator runs at above grade metering-regulating stations that are not above grade T-D transfer stations, $Count_{MR}$ [98.236(r)(2)(iii)]	
Average estimated time that each meter/regulator run at above grade metering-regulating stations that are not above grade T-D transfer stations was operational in the calendar year, $T_{w,avg}$ (hours) [98.236(r)(2)(iv)]	

If your facility has above grade metering-regulating stations that are not above grade T-D transfer stations AND your facility also has above grade T-D transfer stations, you must report the following emissions

Annual CO_2 emissions from above grade metering-regulating stations that are not above grade T-D transfer stations [98.236(r)(2)(v)(A)]	
Annual CH_4 emissions from above grade metering-regulating stations that are not above grade T-D transfer stations [98.236(r)(2)(v)(B)]	

Table R.4 Major Equipment Type must be completed by facilities in the Onshore petroleum and natural gas production and Onshore petroleum and natural gas gathering and boosting industry segments. NOTE: Do not complete this table for any emission source types/components that are subject to the well site or compressor station fugitive emissions standards in 40 CFR 60.5397a or emission source types/components for which the facility elected to comply with 98.236(q) according to 98.233(q)(1)(iv). Required data elements include:

- Component count calculation method for all emission source types in Table R.1 other than gathering pipelines (98.236(r)(3)(i))
- Major equipment type (98.236(r)(3)(ii)) (this data element is pre-filled by the Smart Form for the appropriate options for Natural gas production and Gathering and boosting equipment (Table W-1B) and Crude oil production equipment (Table W-1C)
- Equipment type present at the facility (98.236(r)(3)(ii)(A))
- Count of major equipment type in Eastern and/or Western US (98.236(r)(3)(ii)(B))

Table R.4 Major Equipment Type (for Onshore Petroleum and Natural Gas Production and Onshore Petroleum and Natural Gas Gathering and Boosting only)

Component count calculation method for all emission source types in Table R.1 other than gathering pipelines [98.236(r)(3)(i)]	

	Major Equipment Type [98.236(r)(3)(ii)]	Equipment type present at facility? [98.236(r)(3)(ii)(A)]	Count of Major Equipment Type in Eastern US [98.236(r)(3)(ii)(B)]	Count of Major Equipment Type in Western US [98.236(r)(3)(ii)(B)]
Natural gas production and Gathering and boosting equipment (Table W-1B) [98.236(r)(3)(ii)]	Wellhead			
	Separators			
	Meters/piping			
	Compressors			
	In-line heaters			
	Dehydrators			
Crude oil production equipment (Table W-1C) [98.236(r)(3)(ii)]	Wellhead			
	Separators			
	Heater-treater			
	Header			

Table QR.1 Missing Data Table is required if your facility relied on missing data procedures to develop data elements used in calculating emissions from equipment leaks. Complete only the applicable sections (note that the ID columns are tailored to the different Tables):

- Emission source type/Major equipment type, service type, component type, geographic location (as appropriate for the target Table and Parameter)
- Parameters
- Measurement Frequency
- Number of quarters missing data procedures were used [98.236(bb)(1)] (required only if the measurement frequency was quarterly)
- Total number of hours in the year missing data procedure was used [98.3(c)(8)], [98.236(bb)(2)] (required unless the measurement frequency was quarterly, annually, biannually or N/A)
- Procedures used for missing data [98.235(h)]

Table QR.1 Missing Data Table

Type of Data	Emission Source Type/ Major Equipment Type	Service Type	Component Type	Geographic Location	Parameters	Measurement Frequency	Number of quarters missing data procedures were used [98.236(bb)(1)]	Total number of hours in the year missing data procedure was used [98.3(c)(8)]	Procedures used [98.235(h)]
Table Q.2 Emissions calculated for component types using emissions factors									
Table R.1 Equipment leaks calculated using population counts and factors (for Onshore Petroleum and Natural Gas Production and Onshore Petroleum and Natural Gas Gathering and Boosting only)									
Table R.2 Emissions calculated for component types by population count									
Table R.3 Equipment leaks calculated using population counts and factors (for Natural Gas Distribution only)									
Table R.4 Major Equipment Type (for Onshore Petroleum and Natural Gas Production and Onshore Petroleum and Natural Gas Gathering and Boosting only)									

Total Emissions

The total emissions roll-up at the top of the sheet reflects the sum of each gas emission reported for the source type. These summations are calculated automatically by the Smart Form and tabulated on the Introduction tab.

Total Other Emissions from Equipment Leaks Estimated Using Emission Factors [98.236(q,r)]		
mt CO_2	mt CH_4	mt N_2O
0.0	0.00	N/A