**SDG&E, June 15, 2018**

**Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.**

**In Response to Data Request, R15-01-008 - 2018 June Report**

**Appendix 1 - Rev. 03/31/18**

Notes:

Emissions included in the Report are based on miles of transmission pipeline. Therefore provide the miles of transmission pipeline in your system here.

The following data on transmission pipeline leaks is **for information purposes** and will not be used to report transmission pipeline leak emissions this year.

Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.

At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange.

**Transmission Pipeline Leaks:**

| ID | Geographic Location | Pipe Material | Pipe Size (nominal) | Pipe Age (months) | Pressure (psi) | Leak Grade | Above Ground or Below Ground | Discovery Date (MM/DD/YY) | Repair Date (MM/DD/YY) | Scheduled Repair Date (MM/DD/YY) | Reason for Not Scheduling a Repair | Number of Days Leaking | Emission Factor (Mscf/Mile/Year) | Annual Emissions (Mscf) | Explanatory Notes / Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Transmission | SDG&E Territory | PC | All | All | All | All | All | N/A | N/A | N/A | N/A | N/A | 0.38 | 87.87 | 234 Miles - For 2017, the INGAA Greenhouse Gas Emission Estimation Guidelines for Natural Gas Transmission and Storage - Volume 1 GHG Emission Estimation Methodologies and Procedures (September 28, 2005 - Revision 2) - Table 4-4 study provides the best available estimate of emissions for Transmission Pipeline, which includes emissions from Flanges and Valves. |
| | | | | | | | | | | | | | Sum Total | 87.87 | |

**SDG&E, June 15, 2018**

**Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.**

**In Response to Data Request, R15-01-008 - 2018 June Report**

**Appendix 1 - Rev. 03/31/18**

Notes:

Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.

At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange

**Transmission Pipeline Damage (3rd party dig-ins, natural disasters, etc.):**

| ID | Geographic Location | Damage Type | Pipe Material | Pipe Size (nominal) | Pipe Age (months) | Pressure (psi) | Leak Grade | Above Ground or Below Ground | Discovery Date (MM/DD/YY) | Repair Date (MM/DD/YY) | Number of Days Leaking | Emission Factor (Mscf/Day) | Annual Emissions (Mscf) | Explanatory Notes / Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Note: No Damages* | | | | | | | | | | | | | | |
| | | | | | | | | | | | | Sum Total | 0 | |

**SDG&E, June 15, 2018**

**Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.**

**In Response to Data Request, R15-01-008 - 2018 June Report**
**Appendix 1 - Rev. 03/31/18**

Notes:
Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.
At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange.

## Transmission Pipeline Blowdowns:

| ID | Geographic Location | Number of Blowdown Events | Annual Emissions (Mscf) | Explanatory Notes / Comments |
|---|---|---|---|---|
| N/A | 91942 | 1 | 12.95 | Tie-In project |
| N/A | 92025 | 1 | 764.80 | Pipeline Blowdown |
| N/A | 92129 | 2 | 157.89 | Tie-In project |
| N/A | 92168 | 1 | 33.31 | Tie-In project |
| N/A | 92154/92071 | 2 | 1,031.85 | Pigging Operation Launcher/Receiver Emissions |
| N/A | SDG&E Territory | 3 | 0.09 | Filter Change-outs or Filter Inspections w/parts replacement - Estimated avg. gas vented = 30 scf/ea |
| N/A | SDG&E Territory | 4 | 0.08 | Relief Valve Inspections at Transmission Pipeline - Estimated avg. gas vented = 20 scf/insp (annual test with Nitrogen, gas vented is volume of gas in valve) |
| N/A | SDG&E Territory | 12 | 11.30 | Pipeline Drip Accumulation - Estimated avg. gas vented = 11,300 cfh for 5min/device |
| N/A | SDG&E Territory | 60 | 0.16 | Transmission Odor Intensity Test |
| | Sum Total | | **2,012.43** | |

**SDG&E, June 15, 2018**

**Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.**

**In Response to Data Request, R15-01-008 2018 June Report**
**Appendix 1; Rev. 03/31/17**

Notes:
Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.
At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange

The emissions captured on this tab represent the emissions associated with the operational design and function of the component. Any intential release of natural gas for safety or maintenance purposes should be included in the Blowdowns worksheet.

## Transmission Pipeline Component Vented Emissions:

| Total Number of Devices | Device Type | Bleed Rate | Manufacturer | Emission Factor (Mscf/day/dev) | Annual Emission (Mscf) | Explanatory Notes / Comments |
|---|---|---|---|---|---|---|
| *Notes: No devices.* | | | | | | |
| | | | | Sum Total | 0 | |

**SDG&E, June 15, 2018**

**Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.**

**In Response to Data Request, R15-01-008 2018 June Report**

**Appendix 1; Rev. 03/31/17**

Notes:

Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.

At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange

The emissions captured on this tab represent the emissions associated unintentional leaks that if repaired would not leaking. If the component is releasing gas or "bleeding" as a result of its design or function then it is not to be captured in this tab.

**Transmission Pipeline Component Fugitive Leaks:** 12/31/2017 1/1/2017

| ID | Geographic Location | Device Type | Bleed Rate | Manufacturer | Discovery Date (MM/DD/YY) | Repair Date (MM/DD/YY) | Number of Days Leaking | Emission Factor (Mscf/day) | Annual Emission (Mscf) | Explanatory Notes / Comments | Prior Survey Date (MM/DD/YY) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6430462-1 | 91942 | O | N/A | N/A | 7/13/2017 | 7/13/2017 | 14 | N/A | N/A | Connector component on Transmission pipeline. Emissions accounted for by mileage-based INGAA Emission Factor. | 6/30/2017 |
| 6416007 | 91979 | O | N/A | N/A | 4/27/2017 | 4/27/2017 | 117 | N/A | N/A | Valve component on Transmission pipeline. Emissions accounted for by mileage-based INGAA Emission Factor. | 12/8/2016 |
| 6416007 | 91979 | O | N/A | N/A | 4/27/2017 | 5/15/2017 | 135 | N/A | N/A | Other component on Transmission pipeline. Emissions accounted for by mileage-based INGAA Emission Factor. | 12/8/2016 |
| 6402177-1 | 92008 | O | N/A | N/A | 7/3/2017 | 7/3/2017 | 18 | N/A | N/A | Valve component on Transmission pipeline. Emissions accounted for by mileage-based INGAA Emission Factor. | 6/16/2017 |
| 6602101 | 92023 | O | N/A | N/A | 12/30/2017 | 12/30/2017 | 4 | N/A | N/A | Valve component on Transmission pipeline. Emissions accounted for by mileage-based INGAA Emission Factor. | 12/27/2017 |
| 6602123 | 92025 | O | N/A | N/A | 12/22/2017 | 12/22/2017 | 176 | N/A | N/A | Valve component on Transmission pipeline. Emissions accounted for by mileage-based INGAA Emission Factor. | 6/30/2017 |
| 6539250-1 | 92033 | O | N/A | N/A | 12/28/2017 | 12/28/2017 | 10 | N/A | N/A | Valve component on Transmission pipeline. Emissions accounted for by mileage-based INGAA Emission Factor. | 12/19/2017 |
| 6291123-2 | 92123 | O | N/A | N/A | 2/28/2017 | 2/28/2017 | 59 | N/A | N/A | Other component on Transmission pipeline. Emissions accounted for by mileage-based INGAA Emission Factor. | 12/29/2016 |
| 6399650-1 | 92131 | O | N/A | N/A | 7/21/2017 | 7/21/2017 | 29 | N/A | N/A | Valve component on Transmission pipeline. Emissions accounted for by mileage-based INGAA Emission Factor. | 6/23/2017 |
| 6407430-1 | 92158 | O | N/A | N/A | 7/5/2017 | 7/5/2017 | 16 | N/A | N/A | Valve component on Transmission pipeline. Emissions accounted for by mileage-based INGAA Emission Factor. | 6/20/2017 |
| 6252667-1 | 92179 | O | N/A | N/A | 12/24/2016 | 3/14/2017 | 73 | N/A | N/A | Valve component on Transmission pipeline. Emissions accounted for by mileage-based INGAA Emission Factor. | 12/8/2016 |
| 6416005 | 92179 | O | N/A | N/A | 4/28/2017 | 4/28/2017 | 118 | N/A | N/A | Connector component on Transmission pipeline. Emissions accounted for by mileage-based INGAA Emission Factor. | 12/8/2016 |
| 6416006 | 92179 | O | N/A | N/A | 4/28/2017 | 4/28/2017 | 118 | N/A | N/A | Connector component on Transmission pipeline. Emissions accounted for by mileage-based INGAA Emission Factor. | 12/8/2016 |
| 6432188 | 92592 | O | N/A | N/A | 5/11/2017 | 5/12/2017 | 132 | N/A | N/A | Connector component on Transmission pipeline. Emissions accounted for by mileage-based INGAA Emission Factor. | 12/29/2016 |
| | | | | | | | | Sum Total | 0 | | |

**SDG&E, June 15, 2018**

**Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.**

**In Response to Data Request, R15-01-008 2018 June Report**
**Appendix 1; Rev. 03/31/17**

Notes:
Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.
At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange

## Transmission Pipeline Odorizers:

| ID | Geographic Location | Number of Units | Emission Factor (Mscf/yr) | Annual Emission (Mscf) | Explanatory Notes / Comments |
|---|---|---|---|---|---|
| Gas Quality Equipment | SDG&E Territory | 2 | N/A | 1.04 | Transmission (Producers), Gas Sample/Quality Tests. Use manufacturing specs. See Notes in Appendix 9. |
| Odorizer | SDG&E Territory | 2 | N/A | 1.15 | YZ Odorizer. Use manufacturing specs. See Notes in Appendix 9. |
| | | | Sum Total | **2.20** | |

| Header column "Comment" boxes displayed below for reference. | |
|---|---|
| Column Heading | Description and Definition of Required Contents (IF not self-explanatory) |
| **Tab: Pipeline Leaks** | |
| **ID** | |
| **Geographic Location** | GIS, zip code, or equivalent |
| **Pipe Material** | PB = cathodically protected steel, bare<br>PC = cathodically protected steel, coated<br>UB = unprotected steel, bare<br>UC = unprotected steel, coated |
| **Pipe Size (nominal)** | |
| **Pipe Age (months)** | |
| **Pressure (psi)** | MOP = maximum operating pressure over the past year |
| **Leak Grade** | 1 = grade 1<br>2 = grade 2<br>2+ = grade 2+<br>3 = grade 3<br>AH = Above Ground Hazardous synonoumous with Grade 1.<br>AN = Above Ground Non-Hazardous<br>AM = Above Ground Non-Hazardous Minor (akin to grade 3 below ground leak).<br>N = non-graded or ungraded |
| **Above Ground or Below Ground** | A = above ground<br>B = below ground |
| **Discovery Date (MM/DD/YY)** | |
| **Repair Date (MM/DD/YY)** | Date that the pipeline repair stopped the leak. Any associated blowdowns resulting from the repair should be included in the blowdowns tab. |
| **Scheduled Repair Date (MM/DD/YY)** | If leak is open, specify the scheduled date of repair, or type "M," signifying that the leak is being monitored with no scheduled date of repair.<br>Then, provide the reason for not scheduling a repair in Column for that purpose. |

| Column Heading | Description and Definition of Required Contents (IF not self-explanatory) |
|---|---|
| **Reason for Not Scheduling a Repair** | If not scheduled for repair (e.g. with a "M" for monitoring the leak in Scheduled Repair Date), then provide the reason for not scheduling a repair. |
| **Number of Days Leaking** | If the leak was discovered by survey in the year of interest, then assume leaking from January 1st of subject year thru repair date or December 31st of subject year, which ever is earlier. (E.G. Days Leaking = Repair - Jan 1st + 1 day.)<br><br>(For days leaking for leaks carried over use January 1st as start date for emissions calculations.)<br><br>For O&M discovered leaks, assume that the leak begins with the discovery date thru repair date or December 31st of subject year, whichever is earlier. |
| **Emission Factor (Mscf/Day)** | |
| **Annual Emissions (Mscf)** | |
| **Explanatory Notes / Comments** | |
| **Tab: All Damages** | |
| **ID** | |
| **Geographic Location** | GIS, zip code, or equivalent |
| **Damage Type** | E = excavation damage<br>N = natural force damage<br>O = other outside force damage |
| **Pipe Material** | PB = cathodically protected steel, bare<br>PC = cathodically protected steel, coated<br>UB = unprotected steel, bare<br>UC = unptotected steel, coated |
| **Pipe Size (nominal)** | |
| **Pipe Age (months)** | |
| **Pressure (psi)** | MOP = maximum operating pressure over the past year |

| Column Heading | Description and Definition of Required Contents (IF not self-explanatory) |
|---|---|
| **Leak Grade** | 2 = grade 2<br>2+ = grade 2+<br>3 = grade 3<br>N = non-graded or ungraded |
| **Above Ground or Below Ground** | AH = above ground, hazardous<br>AN = above ground, non-hazardous<br>B = below ground |
| **Discovery Date (MM/DD/YY)** | |
| **Repair Date (MM/DD/YY)** | |
| **Number of Days Leaking** | If date and time stamp are reliable and used consistently by respondent, then emissions may be calculated based on actual time leaking. E.G. Repair time - damage event time = duration of event.<br><br>If respondent has average or historical leak duration based on the nature and circumstances of damages, then these may be applied to like damage events. The emissions factors should be adequately supported and explained in the filing.<br><br>If actual time stamps and historical averages are not available, then whole days should be used in the engineering calculation. The leak begins with the damage event date thru repair date or December 31st of subject year, whichever is later. E.G. Days Leaking = Repair date - date of damage + 1 day. |
| **Emission Factor (Mscf/Day)** | |
| **Annual Emissions (Mscf)** | |
| **Explanatory Notes / Comments** | Provide method of calculation and example of formula.<br>Explain how any EF's used were derived. |
| | |
| **Tab: Blowdowns** | |
| **ID** | |
| **Geographic Location** | GIS, zip code, or equivalent |

| Column Heading | Description and Definition of Required Contents (IF not self-explanatory) |
|---|---|
| **Number of Blowdown Events** | |
| **Annual Emissions (Mscf)** | |
| **Explanatory Notes / Comments** | Provide method of calculation and example of formula. |
| | |
| **Tab: Component Vented Emissions** | |
| **Geographic Location** | GIS, zip code, or equivalent |
| **Device Type** | C = connector<br>O = open-ended line<br>M = meter<br>P = pneumatic device<br>PR = pressure relief valve<br>V = valve |
| **Bleed Rate** | L = low bleed<br>I = intermittent bleed<br>H = high bleed<br>NA = not applicable |
| **Manufacturer** | |
| **Annual Emissions (Mscf)** | Because the emissions are a factor of design or function, these emissions counted for the entire year.<br>E.G. 365 days times the actual volume emitting if known, or the approved Emissions Factor. |
| **Explanatory Notes / Comments** | Note whether the emissions are based on actual volumetric measures. |
| | |
| **Tab: Component Leaks** | |
| **ID** | |
| **Geographic Location** | GIS, zip code, or equivalent |
| **Device Type** | C = connector<br>O = open-ended line<br>M = meter<br>P = pneumatic device<br>PR = pressure relief valve<br>V = valve |

| Column Heading | Description and Definition of Required Contents (IF not self-explanatory) |
|---|---|
| **Bleed Rate** | L = low bleed<br>I = intermittent bleed<br>H = high bleed<br>NA = not applicable |
| **Manufacturer** | |
| **Discovery Date (MM/DD/YY)** | List the actual discovery date.<br><br>If the leak was discovered in the year of interest, then we will assume the component was leaking from the beginning of the year for emissions reporting purposes, or prior survey date if surveyed previously within the year of interest. |
| **Repair Date (MM/DD/YY)** | Date that the component repair stopped the leak. Any associated blowdowns as a result of the repair should be included in the blowdowns tab. |
| **Number of Days Leaking** | Assume Leaking from January 1 of subject year or prior survey date, whichever is later, thru the repair date (if repaired in year of interest) or December 31 of subject year, whichever is earlier.<br><br>For O&M discovered leaks, assume that the leak begins with the discovery date thru repair date or December 31st of subject year, whichever is earlier. |
| **Annual Emissions (Mscf)** | |
| **Explanatory Notes / Comments** | |
| **Tab: Odorizers** | |
| **ID** | |
| **Geographic Location** | GIS, zip code, or equivalent |
| **Number of Units** | |
| **Emission Factor (Mscf/yr)** | |
| **Annual Emission (Mscf)** | All of the emissions from the odorizing process and equipment. |
| **Explanatory Notes / Comments** | |