**[Company Name], [Date Submitted]**

**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 2019 June Report**
**Appendix 7;  Rev. 03/29/19**

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

Use the Population based emission factor if facility is not surveyed. Use Leaker based emission factor if facility is surveyed, and report only the found leaking components.

## Underground Storage Facility Leaks and Emissions:

| ID | Geographic Location | Source | Number of Sources | Discovery Date (MM/DD/YY) | Repair Date (MM/DD/YY) | Number of Days Leaking | Emission Factor (Mscf/day/dev) | Annual Emissions (Mscf) | Explanatory Notes / Comments |
|---|---|---|---|---|---|---|---|---|---|

Note: No facilities of this type.

**[Company Name], [Date Submitted]**
**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 2019 June Report**
**Appendix 7;  Rev. 03/29/19**

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 compressor.  Any intentional release of natural gas for safety or maintenance purposes should be included on the Blowdowns worksheet.

**Underground Storage Facility Compressor Vented Emissions (see note above):**

| ID | Geographic Location | Compressor Type | Prime Mover | Number of Cylinders in Compressor | Number of Seals | Seal Type | Operating Mode: Pressurized Operating (hours) | Operating Mode: Pressurized Idle (hours) | Operating Mode: Depressurized Idle (hours) | Emission Factor: Pressurized Operating (scf/hr) | Emission Factor: Pressurized Idle (scf/hr) | Emission Factor: Depressurized Idle (scf/hr) | Emissions (Mscf) | Explanatory Notes / Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Note: No facilities of this type.

**[Company Name], [Date Submitted]**

**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.**

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**Appendix 7;  Rev. 03/29/19**

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

**Underground Storage Blowdowns:**

| ID | Geographic Location | Source | Compressor Type | Number of Blowdown Events | Annual Emissions (Mscf) | Explanatory Notes / Comments |
|---|---|---|---|---|---|---|

Note: No facilities of this type.

**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 2019 June Report**
**Appendix 7;  Rev. 03/29/19**

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 intentional release of natural gas for safety or maintenance purposes should be included on the Blowdowns worksheet.

**Underground Storage Component Vented Emissions (See note above):**

| ID | Geographic Location | Device Type | Bleed Rate | Manufacturer | Pressure (psi) | Survey Date (MM/DD/YY) | Number of Days Emitting | Emission Factor, Engineering or Manufacturer's based Estimate of Emissions (Mscf/day) | Annual Emissions (Mscf) | Explanatory Notes / Comments |
|---|---|---|---|---|---|---|---|---|---|---|

Note: No facilities of this type.

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.

**Underground Storage: Compressor and Component Fugitive Leaks (see note above):**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 12/31/2018 | 1/1/2018 | |
| ID | Geographic Location | Device Type | Bleed Rate | Manufacturer | Pressure (psi) | Discovery Date (MM/DD/YY) | Repair Date (MM/DD/YY) | Prior Survey Date (MM/DD/YY) | Number of Days Leaking | Emission Factor or Engineering Estimate (Mscf/day) | Emissions (Mscf) | Explanatory Notes / Comments |

Note: No facilities of this type.

**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 2019 June Report**

**Appendix 7;  Rev. 03/29/19**

Pursuant to SB 1371, Leno - Natural gas: leakage abatement, the California Public Utilities Commission (CPUC) requests that the following information be transmitted to the CPUC and the State Air Resources Board (ARB):

Note - Definitions in Data Request, R15-01-008 2018 June Report

The following question in the above mentioned data request is answered using the spreadsheets in this Appendix (#7):

(6)  Calculable or estimated emissions and non-graded gas leaks, as defined in Data Request R15-01-008 2018 June Report.

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

**Underground Storage Dehydrator Vented Emissions:**

| ID | Geographic Location | Type of Dehydrator (Glycol or Desiccant) | Vapor Recovery Unit or Thermal Oxidizer (Y/N) | Annual Volume of Gas Withdrawn (Mscf) | Emission Factor (Y/N) | Engineering Estimate (Y/N) | Annual Emissions (Mscf) | Explanatory Notes / Comments |
|---|---|---|---|---|---|---|---|---|

Note: No facilities of this type.

| Header column "Comment" boxes displayed below for reference. | |
|---|---|
| **Column Heading** | **Description and Definition of Required Contents (IF not self-explanatory)** |
| **Storage Leaks & Emissions** | |
| ID | |
| Geographic Location | GIS, zip code, or equivalent |
| Source | W/C = wellhead connector<br>W/V = wellhead valve<br>W/PRV = wellhead pressure relief valve<br>W/OEL = wellhead open-ended line<br>W/F = wellhead flange<br>W/O = wellhead other<br>C = casing<br>P = pipeline<br>O = other |
| Number of Sources | |
| Discovery Date | Report Discovery Date if calculating wellhead component emissions using Leaker EFs |
| Repair Date | Report Discovery Date if calculating wellhead component emissions using Leaker EFs |
| Number of Days Leaking | Calculate Number of Days Leaking using the formula: Repair Date minus Discovery Date + 1 day |
| Emission Factor (Mscf/yr) | |
| Annual Emissions (Mscf) | |
| Explanatory Notes / Comments | |

| **Compressor Vented Emissions** | |
|---|---|
| ID | |
| Geographic Location | GIS, zip code, or equivalent |
| Compressor Type | C = centrifugal<br>R = reciprocating |

| | |
|---|---|
| **Prime Mover** | E = electric motor<br>C = internal combustion engine |
| **Number of Cylinders in Compressor** | |
| **Number of Seals** | |
| **Seal Type** | W = wet<br>D = dry<br>O = other |
| **Operating Mode: Pressurized Operating (hours)** | |
| **Operating Mode: Pressurized Idle        (hours)** | |
| **Operating Mode: Depressurized Idle (hours)** | |
| **Emission Factor: Pressurized Operating (scf/hr)** | |
| **Emission Factor: Pressurized Idle (scf/hr)** | |
| **Emission Factor: Depressurized Idle (scf/hr)** | |
| **Emissions (Mscf)** | |
| **Explanatory Notes / Comments** | |

| Blowdowns | |
|---|---|
| **ID** | |
| **Geographic Location** | GIS, zip code, or equivalent |

| Source | W = wellhead rework<br>C = compressor<br>P= pipeline<br>O = other |
|---|---|
| CompressorType | C = centrifugal<br>R = reciprocating |
| Number of Blowdown Events | |
| Annual Emissions(Mscf) | |
| Explanatory Notes / Comments | |

| Component Vented Emissions | |
|---|---|
| ID | |
| Geographic Location | GIS, zip code, or equivalent |
| Device Type | C = connector<br>OE = open-ended line<br>M = meter<br>P = pneumatic device<br>PR = pressure relief valve<br>V = valve<br>O = other devices |
| Bleed Rate | L = low bleed<br>I = intermittent bleed<br>H = high bleed<br>NA = not applicable |
| Manufacturer | |
| Pressure (psi) | MOP = maximum operating pressure over the past year |
| Survey Date (MM/DD/YY) | |

| | |
|---|---|
| **Number of Days Emitting** | Because the emissions are a factor of design or function, these emissions counted for the entire year. |
| **Emission Factor, Engineering or Manufacturer's based Estimate of Emissions (Mscf/day)** | Explain in the comment column the basis for your emission estimate. |
| **Annual Emissions (Mscf)** | |
| **Explanatory Notes / Comments** | |

| **Compressor and Component Leaks** | |
|---|---|
| **ID** | |
| **Geographic Location** | GIS, zip code, or equivalent |
| **Device Type** | C = connector<br>OE = open-ended line<br>M = meter<br>P = pneumatic device<br>PR = pressure relief valve<br>V = valve<br>O = other devices |
| **Bleed Rate** | L = low bleed<br>I = intermittent bleed<br>H = high bleed<br>NA = not applicable |
| **Manufacturer** | |
| **Pressure (psi)** | MOP = maximum operating pressure over the past year |
| **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. |

| | |
|---|---|
| **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. |
| **Prior Survey Date (MM/DD/YY)** | Before the discovery date of the leak, there was a "Prior Survey Date" when the compressor station was tested and no leak was found.<br><br>There should be records as to when the compressor station was last surveyed. If the survey spanned two or more days, enter the final date.<br><br>Note, a facility level survey date is sufficient to establish the prior survey date. |

| | |
|---|---|
| **Number of Days Leaking** | The algorithm that is used for determining the number of days leaking should conform to the following guidance:<br>For the number days leaking prior to the date of discovery (survey date in the year of interest), calculate the number of days between the Discovery Date and the Prior Survey Date then divided by 2.  [Dividing by 2 approximates the average time leaking between the leak discovery and the prior survey date. See below guidance when a leak is discovered in a prior period and repaired in the year of interest.]<br><br>(Discovery Date – Prior Survey Date)/2<br><br>Calculate the number of days leaking after discovery (survey) date, by subtracting the discovery date from the repair date, unless the leak has not been repaired, where the number of days should be calculated by subtracting the discovery date from December 31 of the year of interest.*<br><br>(Repair Date – Discovery Date), unless repair date greater than 12/31/XX then use 12/31/XX<br><br>---<br>Days Leaking = (Repair Date - Discovery Date) + (Discovery Date - Prior Survey Date)/2 +1<br><br>* [This requires tracking the leak across different years, because the leak could be minor and conceivably span more than year before getting repaired.  Therefore, in the cases where a leak is carried over to a subsequent year, an annual calculation should be made to reflect that the number of days leaking in the prior year have already been reported in the annual emissions inventory. In subsequent years the carried over leaks should reflect a beginning date  of January 1 of the year of interest.] |
| **Emission Factor or Engineering Estimate (Mscf/day)** | |
| **Emissions (Mscf)** | |
| **Explanatory Notes / Comments** | |

| **Dehydrator Vented Emissions** | |
|---|---|
| **ID** | |

| | |
|---|---|
| **Geographic Location** | GIS, zip code, or equivalent |
| **Type of Dehydrator (Glycol or Desiccant)** | |
| **Vapor Recovery Unit OR Thermal Oxidizer (Y/N)** | In order to claim 0 emissions, a Vapor Recovery Unit OR thermal oxidizer must be used 100% of the time during oeration |
| **Annual Volume of Gas Withdrawn (Mscf)** | |
| **Emission Factor (Y/N)** | If the glycol dehydrator has a Vapor Recovery Unit (VRU) or a thermal oxidizer, the emission factor is 0. <br><br> If using a desiccant dehydrator, the emission factor is 2.23E-03 mt CH4/MMscf |
| **Engineering Estimate (Y/N)** | If using an engineering estimate, please include an attachment of methodology or software used as a separate document. Record the annual emissions |
| **Annual Emissions (Mscf)** | For dehydrators using an emission factor, annual emissions are calculated by multiplying annual volume of gas withdrawn and the emission factor <br><br> For dehydrators using an engineering estimate, record the annual emissions |
| **Explanatory Notes / Comments** | |