

SDG&E, June 15th, 2023

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 2023 June Report

Appendix 6; Rev. 03/30/2023

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.

Response:

**Customer Meter Total Leaks and Emissions:**

<b>Number of Meters</b>	<b>Meter Type</b>	<b>Emission Factor (Mscf/yr)</b>	<b>Annual Emissions (Mscf)</b>
878,217	R	0.148	129,976.12
30,251	Commercial	0.051	1,542.80
1,439	Industrial	0.051	73.39
<b>Sum Total</b>			<b>131,592</b>



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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.

Include items like the following in this tab (Note whether emissions are included in the MSA EF used to estimate emissions for the MSA population and show only the event count.):

- Gas vented during all Regulator Change outs due to other than vent leakage.
- Large Customer MSA Regulator Inspection - External Regulator Inspections. List avg. amount vented.
- Large Customer MSA Regulator Inspection - Regulator change out & Internal Reg Inspection. List avg. amount vented.
- Diaphragm - CSF Read & Verify - List amount vented thru meter during read & verify order for decreased usage.
- Diaphragm - CSF Clock Test - List amount vented during Clock Test
- Diaphragm - CSF Registration Check - List amount vented during Registration Checks
- Diaphragm - Size 1,2,3 Meter Change Out - List avg. gas vented on Size 1 Meter Change Out
- All Meter Change Out Size 4 thru 28 - List avg. gas vented for Size 5 to 10 Meter Change outs
- Field Meter Test of Diaphragm & Rotary - List avg. gas vented for Size 9 Meters
- Customer Orifice Meter Plate Insp. - Orifice Plate Inspected Monthly. List avg. amount vented

Response:

**Customer Meter Blowdowns:**

Number of Blowdowns	Meter Type	Emission Factor (Mscf/yr)	Annual Emissions (Mscf)	Explanatory Notes / Comments
1,151	CI	0.005	5.76	All Meter Change Out Size 4 thru 28 - Use avg. gas vented of 5 scf for Size 5 to 10 Meter Change outs
90	CI	0.005	0.45	Field Meter Test of Diaphragm & Rotary - Use avg. gas vented of 5 scf for Size 9 Meters
93	CI	0.015	1.40	Filter Changeout + straight Filter Removal - Estimated avg. gas vented = 15 scf/ea.
1,602	CI	0.006	9.61	Large Customer MSA Regulator Inspection @ 6 scf/insp - Sum of Regulator change out/2 + Internal Reg + IPR + straight reg removal.
673	CI	0.002	1.35	Large Customer MSA Regulator Inspection - External Regulator Inspections @ 2 scf/insp. At SDGE External Reg inspection done at meter change out.
13,567	CI/R	0.000625	8.48	Diaphragm - CSF Clock Test - Vent 0.625 scf/inspection during Clock Test and Registration Checks
21,602	CI/R	0.000625	13.50	Diaphragm - CSF Registration Check - Vent 0.625 scf/inspection during Clock Test and Registration Checks
20,934	CI/R	0.001	20.93	Diaphragm Size 1,2,3 Meter Change Out - Use avg. gas vented of 1 scf on Size 1 Meter Change Out
276	CI/R	0.001	0.28	Customer MSA Size 1-2 Standard Pressure Removals. Assumed avg vent 1 scf
40	CI/R	0.003	0.12	Customer MSA Size 3-4 Standard Pressure Removals. Assumed avg vent 3 scf
65	CI	0.005	0.33	Customer MSA Size 5+ Standard Pressure Removals. Assumed avg vent 5 scf
19	CI	0.03	0.57	Transmission maintained - Filter Changeout or Filter Inspection w/parts replacement - Estimated avg. gas vented = 30 scf/ea.
4	CI	0.02	0.08	Transmission maintained - Relief Valve Inspection at Customer MSAs - Estimated avg. gas vented = 20 scf/insp. (annual test with Nitrogen, gas vented is volume of gas in valve)
3	CI	0.002	0.01	Transmission maintained gas chromatographs/analyzers - 2 scf/inspection
10	CI	0.002	0.25	Transmission maintained meters - 25 scf/inspection
5	CI	0.002	0.01	Transmission maintained Pneumatic Device Annual Inspection - Estimated avg. gas vented = 2 scf/insp. (Actuators & Controllers)
2	CI	0.02	0.04	Producer Relief Valve Transmission maintained Inspection at Customer MSAs - Estimated avg. gas vented = 20 scf/insp.
7	CI	0.03	0.21	Producer Filter Changeout or Filter Inspection w/parts replacement - Estimated avg. gas vented = 30 scf/ea.
2	CI	0.025	0.05	Producer Meters - 25 scf/inspection
7	CI	0.002	0.01	Producer Gas chromatographs/analyzers - 2 scf/inspection
11	CI	0.002	0.02	Producer Pneumatic Device Annual Inspection - Estimated avg. gas vented = 2 scf/insp. (Actuators & Controllers)
<b>Sum Total</b>			<b>63</b>	

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Notes:

This worksheet is intended to capture the actual number of equipment and components in this asset category that vent emissions as a part of their design and normal function. By listing the number and types of components (not captured elsewhere in other templates) that vent emissions we hope to obtain information that may provide insight into how to evolve to a method of reporting emissions based on the actual number of units and types emitting rather than a crude population based estimate.

Currently, the component related leaks are accounted for in the population based estimate for MSAs and any estimate of emissions associated with this list of equipment and components will not be added to that total. This tab is not intended to replace or supplant the Vented and Blowdown Emissions tab which are activity based emissions.

No emissions estimates from this worksheet should be included in Appendix 8, as this is being collected for informational purposes at this time.

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.

Response:

**Customer Meter Component/Equipment Vented Emissions:**

ID	Geographic Location	Device Type	Bleed Rate	Manufacturer	Number of Days Emitting	Engineering or Manufacturer's based Estimate of Emissions	Annual Emissions (Mscf)	Explanatory Notes / Comments
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Sum Total	0
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In Response to Data Request, Description and Definition of Required Contents (If not self-explanatory)	
<b>Meter Leaks, Population Based</b>	
Number of Meters	
Meter Type	CI = commercial or industrial meter R = residential meter
Emission Factor (Mscf/yr)	
Annual Emissions (Mscf)	
<b>Identified MSA Leaks, Leaker</b>	
ID	
Geographic Location	GIS, zip code, or equivalent
Meter Classification (Commercial/Industrial or Residential)	If available, indicate whether the meter is commercial or industrial "CI", or a residential "R" meter. If that information is not available then note as "N/A". CI = Commercial or Industrial R = Residential N/A = not available
Leak Classification (Grade)	AH = Above Ground Hazardous AN = Above Ground Non-hazardous AM = Above Ground Non-hazardous Minor  If Above Ground, and operator uses the Bubble grading methodology with an alphanumeric grade, then provide an explanation for the meaning each grade in the notes above the table. <b>For example:</b> A = grade A - Large Leak or equates to with AH above with an approximate EF of 10,2035 scfh. B = grade B - Equates to AN above with an approximate EF of 0.5138 scfh. Etc.  If the MSA leak is Below ground <b>and not included in DM&amp;S</b> , then use the following grades:  1 = grade 1 2 = grade 2 3 = grade 3 N = Non-Graded
Leak Discovery Method	S = Routine Leak Survey M = O&M (e.g. O&M activities, third party reports, customer odor reports, etc.)
Discovery Date (DD/MM/YY)	
Leak Repair Date (MM/DD/YY)	Use the date the leak ceases emitting NG.  The final repair may be completed after the leak has been stopped.
If not repaired by 12/31/xx List the Scheduled Date of Repair (DD/MM/YY)	If leak is open, specify the scheduled date of repair Otherwise type "M," signifying that the leak is being monitored with no scheduled date of repair Then, provide the reason for not scheduling a repair in Comments column.
Reason for Not Scheduling a Repair	If repair hasn't been scheduled, then provide the reason for not scheduling a repair in this column. If using a reason code, then provide a table with codes and corresponding explanations.
Number of Days Leaking	Leak Duration (in days) = End Date + 1 day - Start date End Date: The repair date or December 31st of subject year, whichever is earlier. Start Date: If discovered by survey use January 1st or prior survey date whichever is more recent, or if an O&M or customer called in leak, then use discovery date for start of the leak. (Leaks carried over should use January 1st as start date for emissions calculations.)  For O&M discovered leaks, assume that the leak begins with the discovery date <u>thru</u> repair date or December 31st of subject year, whichever is earlier.
Number of Days to Repair.	Leak Discovery date minus repair date or 12/31 of the subject year plus 1 = number of days to repair for the subject year.  Addition of 1 day to include the date repaired.
Comments or Additional Information	
<b>Meter Leaks, Leak Count, Leaker</b>	
Meter Classification (AG-Haz, AG-Non-Haz); Bubble Size Category	Utilities should add rows according to their bubble size categories and nomenclature, and should include a no-bubble category. For example, include a row for each: Foam/ Indeterminate; Bubbles; Soap Blown Off; and No Bubbles.
Total System Meters per survey Cycle	
Meters on Annual Survey [M <sub>yr</sub> ]	
Meters on Multi-Year Survey Cycles [M <sub>yr</sub> <sup>tot</sup> ]	
Survey Interval (yrs) [I]	
Meters Surveyed Annually from Multi-Year Survey Cycles [M <sub>yr</sub> ]	
Total # of Leaks Detected from Survey [N <sub>yr</sub> ]	

In Response to Data Request, Description and Definition of Required Contents (If not self-explanatory)	
Annual Leak Rate [Leaks / Meter]	$R_x = \frac{N_{xL}}{M_{x,A} + (I \times M_{x,I})}$
# of Unknown Leaks	$N_{x,unk} = R_x \times (M_{x,ot} - M_{x,I}) \times \frac{I}{2}$ If the operator changed the leak survey cycle during the report year that requires more detailed calculations based on the approved calculation methodology to determine the number of unknown leaks an additional worksheet may be added to show the calculations.
Total # of Leaks Detected from O&M* [N <sub>x,L</sub> ]	
All Damages	
ID	
Geographic Location	GIS, zip code, or equivalent
Damage Type	E = Excavation Damage N = natural force damage O = other outside force damage
Meter Type	CI = commercial or industrial meter R = residential meter
Leak Classification (Grade)	AH = Above Ground Hazardous AN = Above Ground Non-hazardous AM = Above Ground Non-hazardous Minor
Discovery Date (DD/MM/YY)	
Leak Repair Date (MM/DD/YY)	Use the date the leak ceases emitting NG. The final repair may be completed after the leak has been stopped.
If not repaired by 12/31/xx List the Scheduled Date of Repair (DD/MM/YY)	If leak is open, specify the scheduled date of repair. Otherwise type "M," signifying that the leak is being monitored with no scheduled date of repair. Then, provide the reason for not scheduling a repair in the Column provided.
Reason for Not Scheduling a Repair	Provide the reason for not scheduling a repair.
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.  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.  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.
Engineering Estimate (Mscf/Day)	
Annual Emissions (Mscf)	
Explanatory Notes / Comments	
Vented and Blowdown Emissions	
Number of Blowdowns	For metering set assembly (MSA)
Meter Type	CI = commercial or industrial meter R = residential meter
Emission Factor (Mscf/event)	
Annual Emissions (Mscf)	
Explanatory Notes / Comments	
Component Vented Emissions	
ID	
Geographic Location	GIS, zip code, or equivalent
Device Type	C = connector OE = open-ended line M = meter P = pneumatic device PR = pressure relief valve V = valve O = other devices
Bleed Rate	L = low bleed I = intermittent bleed H = high bleed NA = not applicable
Manufacturer	
Number of Days Emitting	Because the emissions are a factor of design or function, these emissions counted for the entire year.
Engineering or Manufacturer's based Estimate of Emissions	
Annual Emissions (Mscf)	The emissions should be based on 365 days times the actual volume emitting if known, or the approved Emissions Factor.  Note whether the emissions are based on actual volumetric measures in the next column.
Explanatory Notes / Comments	