

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 5; Rev. 03/31/2018

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.

Distribution M&R Station Leaks and Emissions

Number of Stations	Station Classification	Emission Factor (Mscf/yr/ station)	Annual Emissions (Mscf)	Explanatory Notes / Comments
11	B1	0.964	11	
62	B2	1.84	114	
354	B3	12.176	4,310	
2	A1	40.6	81	
11	A2	896.5	9,862	
38	A3	1,684.5	64,011	
		Sum Total	78,389	

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

Distribution M&R Station 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
<i>Note: No Damages</i>		<i>Note: No Damages</i>												
Sum Total												0		

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Distribution M&R Station Blowdowns:

ID	Geographic Location	Number of Blowdown Events	Annual Emissions (Mscf)	Explanatory Notes / Comments
N/A	SDG&E Territory	484	14.09	M&R Station Inspection Blowdown.
N/A	SDG&E Territory	1,924	7.696	External District Reg. Inspection at Distribution M&R Stations - Estimated avg. gas vented = 4 scf/insp
N/A	SDG&E Territory	245	2.94	Reg. Change out & Internal Reg. Inspection at Distribution M&R Stations - Estimated avg. gas vented = 12 scf/ea
N/A	SDG&E Territory	12	0.06	Orifice Plate Inspection at BTU Districts - Estimated avg. gas vented = 5 scf/insp
		Sum Total	24.79	

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Notes:

If you record data using this table and you only leak survey part of your system, you must extrapolate emissions from leaks up to account for emissions from your entire system for the 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

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.

Distribution M&R Station Component 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
						Sum Total	0	

Note: No devices

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Notes:

If you record data using this table and you only leak survey part of your system, you must extrapolate emissions from leaks up to account for emissions from your entire system for the 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

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.

Distribution M&R Station Component Fugitive Leaks:

ID	Geographic Location	Device Type	Bleed Rate	Manufacturer	Pressure (psi)	Discovery Date (MM/DD/YY)	Repair Date (MM/DD/YY)	Number of Days Leaking	Emission Factor (Mscf/day)	Annual Emissions (Mscf)	Explanatory Notes / Comments
510000491204 1	92007	O	N/A	N/A	Less than or Equal to 60	1/3/2017	1/3/2017	3	N/A	N/A	Mechanical Joint component on Distribution M&R Station. Emissions included in facility emission factors.
510000495158 1	92026	O	N/A	N/A	Greater than 60	1/10/2017	1/10/2017	10	N/A	N/A	Fitting Body or Seals component on Distribution M&R Station. Emissions included in facility emission factors.
510000495592 1	92054	O	N/A	N/A	Less than or Equal to 60	1/17/2017	1/17/2017	17	N/A	N/A	Fitting Body or Seals component on Distribution M&R Station. Emissions included in facility emission factors.
510000496444 1	92028	O	N/A	N/A	Less than or Equal to 60	1/24/2017	1/24/2017	24	N/A	N/A	Fitting Body or Seals component on Distribution M&R Station. Emissions included in facility emission factors.
510000500372 1		O	N/A	N/A	Less than or Equal to 60	1/24/2017	1/24/2017	24	N/A	N/A	Unknown component on Distribution M&R Station. Emissions included in facility emission factors.
510000500377 1		O	N/A	N/A	Less than or Equal to 60	1/24/2017	1/24/2017	24	N/A	N/A	Unknown component on Distribution M&R Station. Emissions included in facility emission factors.
510000496541 1	92027	O	N/A	N/A	Less than or Equal to 60	1/25/2017	1/25/2017	25	N/A	N/A	Pipe component on Distribution M&R Station. Emissions included in facility emission factors.
510000500350 1	92110	O	N/A	N/A	Less than or Equal to 60	2/1/2017	2/1/2017	32	N/A	N/A	Unknown component on Distribution M&R Station. Emissions included in facility emission factors.
510000500350 2	92110	O	N/A	N/A	Less than or Equal to 60	2/1/2017	2/1/2017	32	N/A	N/A	Unknown component on Distribution M&R Station. Emissions included in facility emission factors.
510000500350 3	92110	O	N/A	N/A	Less than or Equal to 60	2/1/2017	2/1/2017	32	N/A	N/A	Mechanical Fitting component on Distribution M&R Station. Emissions included in facility emission factors.
510000500481 1	92024	O	N/A	N/A	Greater than 60	2/1/2017	2/1/2017	32	N/A	N/A	Unknown component on Distribution M&R Station. Emissions included in facility emission factors.
510000500481 2	92024	O	N/A	N/A	Greater than 60	2/1/2017	2/1/2017	32	N/A	N/A	Unknown component on Distribution M&R Station. Emissions included in facility emission factors.
510000505924 1	92024	O	N/A	N/A	Less than or Equal to 60	3/1/2017	3/1/2017	60	N/A	N/A	Unknown component on Distribution M&R Station. Emissions included in facility emission factors.
510000505924 2	92024	O	N/A	N/A	Less than or Equal to 60	3/1/2017	3/1/2017	60	N/A	N/A	Unknown component on Distribution M&R Station. Emissions included in facility emission factors.
510000505931 1	92054	O	N/A	N/A	Less than or Equal to 60	3/1/2017	3/1/2017	60	N/A	N/A	Unknown component on Distribution M&R Station. Emissions included in facility emission factors.
510000505956 1	92128	O	N/A	N/A	Less than or Equal to 60	3/1/2017	3/1/2017	60	N/A	N/A	Mechanical Fitting component on Distribution M&R Station. Emissions included in facility emission factors.
510000506430 1	92026	O	N/A	N/A	Greater than 60	3/9/2017	3/9/2017	68	N/A	N/A	Pipe component on Distribution M&R Station. Emissions included in facility emission factors.
510000506622 1	91977	O	N/A	N/A	Less than or Equal to 60	3/13/2017	3/13/2017	72	N/A	N/A	Mechanical Fitting component on Distribution M&R Station. Emissions included in facility emission factors.
510000507626 1	92113	O	N/A	N/A	Less than or Equal to 60	3/29/2017	3/29/2017	88	N/A	N/A	Mechanical Fitting component on Distribution M&R Station. Emissions included in facility emission factors.
510000517188 1		O	N/A	N/A	Less than or Equal to 60	4/26/2017	4/26/2017	116	N/A	N/A	Unknown component on Distribution M&R Station. Emissions included in facility emission factors.
510000517198 1		O	N/A	N/A	Less than or Equal to 60	4/26/2017	4/26/2017	116	N/A	N/A	Unknown component on Distribution M&R Station. Emissions included in facility emission factors.
510000522436 1		O	N/A	N/A	Less than or Equal to 60	5/26/2017	5/26/2017	146	N/A	N/A	Unknown component on Distribution M&R Station. Emissions included in facility emission factors.
510000522436 2		O	N/A	N/A	Less than or Equal to 60	5/26/2017	5/26/2017	146	N/A	N/A	Unknown component on Distribution M&R Station. Emissions included in facility emission factors.
510000522466 1		O	N/A	N/A	Less than or Equal to 60	5/26/2017	5/26/2017	146	N/A	N/A	Unknown component on Distribution M&R Station. Emissions included in facility emission factors.
510000522466 2		O	N/A	N/A	Less than or Equal to 60	5/26/2017	5/26/2017	146	N/A	N/A	Unknown component on Distribution M&R Station. Emissions included in facility emission factors.
510000522947 1	92108	O	N/A	N/A	Less than or Equal to 60	6/2/2017	6/2/2017	153	N/A	N/A	Pipe component on Distribution M&R Station. Emissions included in facility emission factors.
510000524079 1	91901	O	N/A	N/A	Less than or Equal to 60	6/21/2017	6/21/2017	172	N/A	N/A	Mechanical Fitting component on Distribution M&R Station. Emissions included in facility emission factors.
510000527015 1	92054	O	N/A	N/A	Less than or Equal to 60	6/29/2017	6/29/2017	180	N/A	N/A	Pipe component on Distribution M&R Station. Emissions included in facility emission factors.
510000532657 1		O	N/A	N/A	Less than or Equal to 60	7/27/2017	7/27/2017	208	N/A	N/A	Unknown component on Distribution M&R Station. Emissions included in facility emission factors.
510000533332 1	92101	O	N/A	N/A	Greater than 60	8/11/2017	8/11/2017	223	N/A	N/A	Mechanical Joint component on Distribution M&R Station. Emissions included in facility emission factors.
510000534272 1	92101	O	N/A	N/A	Less than or Equal to 60	8/22/2017	8/22/2017	234	N/A	N/A	Pipe component on Distribution M&R Station. Emissions included in facility emission factors.
510000534524 1	92128	O	N/A	N/A	Less than or Equal to 60	8/24/2017	8/24/2017	236	N/A	N/A	Mechanical Fitting component on Distribution M&R Station. Emissions included in facility emission factors.
510000537602 1	92113	O	N/A	N/A	Less than or Equal to 60	9/13/2017	9/13/2017	256	N/A	N/A	Fitting Body or Seals component on Distribution M&R Station. Emissions included in facility emission factors.
510000537602 2	92113	O	N/A	N/A	Less than or Equal to 60	9/13/2017	9/13/2017	256	N/A	N/A	Unknown component on Distribution M&R Station. Emissions included in facility emission factors.
510000539281 1	92014	O	N/A	N/A	Less than or Equal to 60	10/1/2017	10/1/2017	274	N/A	N/A	Unknown component on Distribution M&R Station. Emissions included in facility emission factors.
510000540387 1	92083	O	N/A	N/A	Less than or Equal to 60	10/10/2017	10/10/2017	283	N/A	N/A	Mechanical Joint component on Distribution M&R Station. Emissions included in facility emission factors.
510000543201 1	92101	O	N/A	N/A	Less than or Equal to 60	11/14/2017	11/14/2017	318	N/A	N/A	Mechanical Joint component on Distribution M&R Station. Emissions included in facility emission factors.
510000552680 1	92024	O	N/A	N/A	Greater than 60	11/29/2017	11/29/2017	333	N/A	N/A	Mechanical Fitting component on Distribution M&R Station. Emissions included in facility emission factors.
510000556648 1	92008	O	N/A	N/A	Less than or Equal to 60	12/5/2017	12/5/2017	339	N/A	N/A	Fitting Body or Seals component on Distribution M&R Station. Emissions included in facility emission factors.
	HV-30	V	N/A	N/A	N/A	12/5/2017	12/5/2017	339	N/A	N/A	Valve component on Distribution M&R Station. Emissions included in facility emission factors.
510000556734 1	91941	O	N/A	N/A	Less than or Equal to 60	12/11/2017	12/11/2017	345	N/A	N/A	Pipe component on Distribution M&R Station. Emissions included in facility emission factors.
510000556734 2	91941	O	N/A	N/A	Less than or Equal to 60	12/11/2017	12/11/2017	345	N/A	N/A	Unknown component on Distribution M&R Station. Emissions included in facility emission factors.
510000557286 1	92103	O	N/A	N/A	Greater than 60	12/15/2017	12/15/2017	349	N/A	N/A	Fitting Body or Seals component on Distribution M&R Station. Emissions included in facility emission factors.
510000557277 1	91942	O	N/A	N/A	Less than or Equal to 60	12/20/2017	12/20/2017	354	N/A	N/A	Mechanical Fitting component on Distribution M&R Station. Emissions included in facility emission factors.

Sum Total **0**

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Header column "Comment" boxes displayed below for reference.	
Column Heading	Description and Definition of Required Contents (If not self-explanatory)
Station Leaks & Emissions	
Number of Stations	
Station Classification	A1 = above grade, pressure <100 psi A2 = above grade, pressure =100-300 psi A3 = above grade, pressure >300 psi B1 = below grade, pressure <100 psi B2 = below grade, pressure =100-300 psi B3 = below grade, pressure >300 psi
Emission Factor (Mscf/yr)	
Annual Emissions (Mscf)	
Explanatory Notes / Comments	

Tab: All Damages	
ID	
Geographic Location	GIS, zip code, or equivalent
Damage Type	E = excavation damage N = natural force damage O = other outside force damage
Pipe Material	PB = cathodically protected steel, bare PC = cathodically protected steel, coated UB = unprotected steel, bare UC = unptotected steel, coated
Pipe Size (nominal)	
Pipe Age (months)	

Column Heading	Description and Definition of Required Contents (If not self-explanatory)
Pressure (psi)	MOP = maximum operating pressure over the past year
Leak Grade	2 = grade 2 2+ = grade 2+ 3 = grade 3 N = non-graded or ungraded
Above Ground or Below Ground	AH = above ground, hazardous AN = above ground, non-hazardous B = below ground
Discovery Date (MM/DD/YY)	
Repair Date (MM/DD/YY)	
Number of Days Leaking	<p>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.</p> <p>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.</p> <p>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.</p>
Emission Factor (Mscf/Day)	
Annual Emissions (Mscf)	

Column Heading	Description and Definition of Required Contents (If not self-explanatory)
Explanatory Notes / Comments	Provide method of calculation and example of formula. Explain how any EF's used were derived.

Blowdowns	
ID	
Geographic Location	GIS, zip code, or equivalent
Number of Blowdown Events	
Annual Emissions (Mscf)	
Explanatory Notes / Comments	

Component Vented Emissions	
ID	
Geographic Location	GIS, zip code, or equivalent
DeviceType	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	
NumberOfDays Emitting	Because the emissions are a factor of design or function, these emissions counted for the entire year.

Column Heading	Description and Definition of Required Contents (If not self-explanatory)
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	

Component Leaks	
ID	
Geographic Location	GIS, zip code, or equivalent
DeviceType	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	
Pressure(psi)	MOP = maximum operating pressure over the past year

Column Heading	Description and Definition of Required Contents (If not self-explanatory)
Discovery Date(MM/DD/YY)	List the actual discovery date. 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.
NumberofDays 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. 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.
Emission Factor(Mscf/day)	
Annual Emissions(Mscf)	
Explanatory Notes / Comments	