

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 3; 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.

Transmission Compressor Station Blowdowns:

ID	Geographic Location	Number of Blowdown Events	Annual Emissions (Mscf)	Explanatory Notes / Comments
BD-2022-455	92555	1	1.75	Maintenance blowdown
BD-2022-456	92555	1	22.24	Maintenance blowdown
BD-2022-457	92555	4	29.48	Maintenance blowdown
BD-2022-458	92555	8	83.9	Maintenance blowdown
BD-2022-459	92555	4	14.81	Maintenance blowdown
BD-2022-460	92555	1	23.27	Maintenance blowdown
BD-2022-461	92555	2	3.52	Maintenance blowdown
BD-2022-462	92555	1	31.22	Maintenance blowdown
BD-2022-484	92555	2	3.69	Maintenance blowdown
BD-2022-485	92555	1	20.2	Maintenance blowdown
BD-2022-486	92555	4	6.99	Maintenance blowdown
BD-2022-487	92555	4	7.47	Maintenance blowdown
BD-2022-513	92555	1	9.63	Maintenance blowdown
BD-2022-516	92555	4	7.26	Maintenance blowdown
BD-2022-517	92555	1	1.84	Maintenance blowdown
BD-2022-518	92555	4	7.45	Maintenance blowdown
BD-2022-536	92555	1	9.68	Maintenance blowdown
BD-2022-537	92555	4	8.03	Maintenance blowdown
BD-2022-538	92555	3	63.63	Maintenance blowdown
BD-2022-539	92555	3	8.41	Maintenance blowdown
BD-2022-540	92555	4	16.27	Maintenance blowdown
BD-2022-541	92555	1	1.86	Maintenance blowdown
BD-2022-542	92555	4	11.1	Maintenance blowdown
BD-2022-543	92555	3	5.7	Maintenance blowdown
BD-2022-544	92555	2	13.93	Maintenance blowdown
BD-2022-545	92555	1	1.96	Maintenance blowdown
BD-2022-546	92555	1	1.95	Maintenance blowdown
BD-2022-547	92555	1	3.78	Maintenance blowdown
BD-2022-548	92555	3	9.51	Maintenance blowdown
BD-2022-569	92555	1	9.36	Maintenance blowdown
BD-2022-570	92555	3	20.71	Maintenance blowdown
BD-2022-571	92555	4	8.57	Maintenance blowdown
BD-2022-572	92555	3	2.57	Maintenance blowdown
BD-2022-573	92555	1	9.53	Maintenance blowdown
BD-2022-574	92555	1	1.71	Maintenance blowdown
BD-2022-575	92555	3	5.37	Maintenance blowdown
BD-2022-576	92555	3	4.92	Maintenance blowdown
BD-2022-577	92555	2	5.54	Maintenance blowdown
BD-2022-578	92555	2	13.64	Maintenance blowdown
BD-2022-579	92555	1	1.78	Maintenance blowdown
BD-2022-580	92555	2	3.69	Maintenance blowdown
BD-2022-581	92555	4	67.57	Maintenance blowdown
BD-2022-582	92555	3	5.19	Maintenance blowdown
BD-2022-583	92555	2	11.08	Maintenance blowdown
BD-2022-584	92555	1	30.05	Maintenance blowdown
BD-2022-585	92555	1	11.52	Maintenance blowdown
BD-2022-592	92555	3	14.88	Maintenance blowdown
BD-2022-593	92555	3	5.86	Maintenance blowdown
BD-2022-594	92555	2	3.65	Maintenance blowdown
BD-2022-595	92555	2	5.48	Maintenance blowdown
BD-2022-596	92555	1	1.85	Maintenance blowdown
BD-2022-597	92555	1	1.79	Maintenance blowdown
BD-2022-598	92555	2	3.59	Maintenance blowdown
BD-2022-599	92555	2	5.57	Maintenance blowdown
BD-2022-600	92555	1	9.54	Maintenance blowdown
BD-2022-601	92555	2	3.46	Maintenance blowdown
BD-2022-602	92555	2	8.87	Maintenance blowdown
BD-2022-603	92555	1	9.57	Maintenance blowdown
BD-2022-660	92555	3	11.54	Maintenance blowdown
BD-2022-698	92555	1	9.54	Maintenance blowdown
BD-2022-699	92555	1	22.99	Maintenance blowdown
BD-2022-700	92555	1	1.89	Maintenance blowdown
BD-2022-701	92555	2	3.18	Maintenance blowdown
BD-2023-732	92555	1	57.81	Maintenance blowdown
BD-2023-733	92555	2	3.67	Maintenance blowdown
BD-2023-734	92555	4	26.38	Maintenance blowdown
BD-2023-735	92555	1	20.08	Maintenance blowdown
BD-2023-736	92555	1	1.71	Maintenance blowdown
BD-2023-737	92555	1	1.73	Maintenance blowdown
BD-2023-738	92555	3	5.62	Maintenance blowdown
BD-2023-739	92555	1	1.81	Maintenance blowdown
BD-2023-740	92555	1	8.91	Maintenance blowdown
BD-2023-741	92555	2	11.4	Maintenance blowdown
BD-2023-742	92555	2	3.64	Maintenance blowdown
NA	92555	45	0.56	Relief Valve Inspections - Estimated avg. gas vented = 20 scf/insp

NA	92555	17	0.375 Meter/orifice 25 scf/each
NA	92555	9	0.24 Filter Change-outs or Filter Inspections w/parts replacement - Estimated avg. gas vented = 30 scf/ea
NA	92555	6	0.012 Controllers - Estimated avg. gas vented = 2 scf/insp (Actuator/Controller)
NA	92555	19	0.038 Actuators - Estimated avg. gas vented = 2 scf/insp (Actuator/Controller)
NA	SDG&E Territory	27	7.37 Blowdown for valve changes at LNG facility
NA	SDG&E Territory	1	44.654 Total Gas Lost Due to filling operations at LNG facility

Sum Total	963
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Appendix 3; 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.

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.

Transmission Compressor Station Component Vented Emissions:

ID	Geographic Location	Device Type	Bleed Rate	Manufacturer	Engineering or Manufacturer's based Estimate of Emissions	Annual Emissions (Mscf)	Explanatory Notes / Comments
16	92555 P	I		Misc.	0.0576	336.384	
Sum Total						336	

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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 Compressor Station: Compressor and Component Fugitive Leaks:

12/31/22

01/01/22

ID	Geographic Location	Facility/Device Type	Emission Factor: Mscf/day/dev	Manufacturer	Discovery Date (MM/DD/YY)	Repair Date (MM/DD/YY)	Prior Survey Date (MM/DD/YY)	Number of Days Leaking	Annual Emissions (Mscf)	Explanatory Notes / Comments
M000627	92555	C	0.137		11/15/2022	11/20/2022	8/24/2022	48	6.5075	
M000651.09	92555	V	0.1541		11/15/2022	11/17/2022	8/24/2022	45	6.85745	
M000314.04	92555	OT	0.0984		8/25/2022	8/30/2022	5/10/2022	60	5.8548	
7993258	92555	C	0.137		1/20/2022	1/25/2022	12/6/2021	29	3.9045	
7993265	92555	V	0.1541		2/2/2022	4/22/2022	12/6/2021	109	16.7969	
7993275	92555	OT	0.0984		1/20/2022	1/25/2022	12/6/2021	29	2.8044	
7993297	92555	C	0.137		2/2/2022	2/7/2022	12/6/2021	35	4.795	
7993298	92555	C	0.137		8/2/2022	2/9/2022	12/6/2021	34	4.658	
7993311	92555	V	0.1541		4/7/2022	4/7/2022	1/3/2022	48	7.3968	
7993313	92555	OT	0.0984		3/18/2022	4/10/2022	12/6/2021	75	7.38	Compressor component
7993316	92555	V	0.1541		3/30/2022	3/30/2022	12/6/2021	58	8.9378	
7993321	92555	OT	0.0984		3/18/2022	4/10/2022	12/6/2021	75	7.38	Compressor component
7993326	92555	V	0.1541		3/23/2022	3/24/2022	12/6/2021	56	8.55255	
7993332	92555	OT	0.0984		3/18/2022	4/10/2022	12/6/2021	75	7.38	Compressor component
7993416	92555	V	0.1541		5/4/2022	5/4/2022	1/3/2022	62	9.47715	
8273752	92555	V	0.1541		11/15/2022	8/30/2023	8/24/2022	89	13.63785	
8273756	92555	V	0.1541		11/15/2022	5/30/2023	8/24/2022	89	13.63785	
M000950	92555	V	0.1541		11/14/2022	11/28/2022	8/24/2022	56	8.6296	
M000686	92555	V	0.1541		11/14/2022	11/28/2022	8/24/2022	56	8.6296	
M000632	92555	V	0.1541		11/15/2022	11/29/2022	8/24/2022	57	8.70665	
M000627.13	92555	C	0.137		11/15/2022	11/29/2022	8/24/2022	57	7.7405	
M000923.30	92555	OT	0.0984		8/23/2022	9/6/2022	5/10/2022	68	6.642	
M000616.13	92555	OT	0.0984		8/24/2022	9/7/2022	5/10/2022	68	6.6912	
7906954	92555	V	0.1541		2/16/2022	2/16/2022	12/6/2021	37	5.7017	
7906955	92555	C	0.137		3/2/2022	3/2/2022	12/6/2021	44	6.028	
7993229	92555	V	0.1541		1/3/2022	1/3/2022	12/6/2021	15	2.3115	
7993233	92555	V	0.1541		1/3/2022	1/3/2022	12/6/2021	15	2.3115	
7993246	92555	V	0.1541		2/3/2022	2/15/2022	12/6/2021	43	6.54925	
7993248	92555	V	0.1541		1/3/2022	1/3/2022	12/6/2021	15	2.3115	
7993249	92555	V	0.1541		1/19/2022	2/2/2022	12/6/2021	37	5.7017	
7993251	92555	C	0.137		2/2/2022	2/7/2022	12/6/2021	35	4.795	
7993256	92555	V	0.1541		2/3/2022	4/10/2022	12/6/2021	97	14.87065	
7993257	92555	C	0.137		1/24/2022	1/25/2022	12/6/2021	27	3.6305	
7993263	92555	C	0.137		1/24/2022	1/25/2022	12/6/2021	27	3.6305	
7993268	92555	PR	0.0482		1/19/2022	2/8/2022	12/6/2021	43	2.0726	
7993269	92555	C	0.137		2/8/2022	2/8/2022	12/6/2021	33	4.521	
7993270	92555	OT	0.0984		2/2/2022	2/8/2022	12/6/2021	36	3.5424	
7993272	92555	OT	0.0984		1/25/2022	2/8/2022	12/6/2021	40	3.936	
7993273	92555	V	0.1541		1/13/2022	1/20/2022	12/6/2021	27	4.1607	
7993277	92555	C	0.137		2/3/2022	2/8/2022	12/6/2021	36	4.8635	
7993282	92555	V	0.1541		2/9/2022	4/10/2022	12/6/2021	94	14.40835	
7993284	92555	C	0.137		1/24/2022	1/25/2022	12/6/2021	27	3.6305	
7993285	92555	C	0.137		2/8/2022	2/8/2022	12/6/2021	33	4.521	
7993292	92555	C	0.137		3/16/2022	3/16/2022	12/6/2021	58	7.8775	
7993294	92555	V	0.1541		3/30/2022	3/30/2022	12/6/2021	58	8.9378	
7993295	92555	OT	0.0984		2/9/2022	2/10/2022	12/6/2021	35	3.948	
7993300	92555	OT	0.0984		4/6/2022	4/7/2022	1/3/2022	49	4.7724	
7993302	92555	PR	0.0482		3/9/2022	4/10/2022	12/6/2021	80	3.8319	
7993303	92555	V	0.1541		3/9/2022	3/9/2022	12/6/2021	48	7.31975	
7993304	92555	V	0.1541		3/30/2022	3/30/2022	12/6/2021	58	8.9378	
7993305	92555	C	0.137		3/3/2022	3/3/2022	12/6/2021	45	6.0965	
7993314	92555	V	0.1541		3/16/2022	3/29/2022	12/6/2021	341	52.5481	
7993317	92555	V	0.1541		3/9/2022	3/9/2022	12/6/2021	48	7.31975	
7993323	92555	C	0.137		4/21/2022	4/21/2022	1/3/2022	55	7.535	
7993324	92555	OT	0.0984		3/17/2022	6/9/2022	12/6/2021	136	13.332	
7993327	92555	OT	0.0984		4/6/2022	4/7/2022	1/3/2022	49	4.7724	
7993329	92555	OT	0.0984		3/9/2022	3/16/2022	12/6/2021	55	5.3628	
7993334	92555	C	0.137		4/21/2022	4/21/2022	1/3/2022	55	7.535	
7993378	92555	C	0.137		5/18/2022	5/18/2022	1/3/2022	69	9.3845	
7993388	92555	OT	0.0984		5/10/2022	5/12/2022	1/3/2022	67	6.5436	
7993393	92555	V	0.1541		5/19/2022	5/19/2022	1/3/2022	70	10.70995	
7993402	92555	C	0.137		5/10/2022	5/10/2022	1/3/2022	65	8.8365	
7993404	92555	V	0.1541		5/18/2022	5/18/2022	1/3/2022	69	10.55585	
7993438	92555	C	0.137		1/20/2022	1/20/2022	12/6/2021	24	3.2195	
7993439	92555	C	0.137		1/24/2022	1/25/2022	12/6/2021	27	3.6305	
7993440	92555	V	0.1541		3/30/2022	3/30/2022	12/6/2021	58	8.9378	
8273757	92555	V	0.1541		11/16/2022	4/7/2023	8/24/2022	88	13.5608	
8273763	92555	V	0.1541		11/17/2022	4/7/2023	8/24/2022	88	13.48375	
8273777	92555	V	0.1541		8/24/2022	8/24/2022	5/10/2022	54	8.3214	
8273782	92555	V	0.1541		8/25/2022	8/29/2022	5/10/2022	59	9.01485	
8273810	92555	V	0.1541		8/24/2022	8/24/2022	5/10/2022	54	8.3214	
8273821	92555	OT	0.0984		8/25/2022	8/29/2022	5/10/2022	59	5.7564	
8273827	92555	V	0.1541		8/25/2022	8/25/2022	5/10/2022	55	8.39845	
8273833	92555	C	0.137		8/26/2022	8/29/2022	5/10/2022	58	7.946	
8273834	92555	C	0.137		8/26/2022	8/26/2022	5/10/2022	55	7.535	

Sum Total 580

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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 Compressor Station Storage Tank Emissions:

Total Number	Discovery Date (DD/MM/YY)	Repair Date (DD/MM/YY)	Number of Days Emitting	Emission Factor (Mscf/yr)	Annual Emissions (Mscf)	Explanatory Notes / Comments
1	1/21/2022	1/21/2022	1	N/A	0.03	LNG Tank Pressure Release Due to Temperature Fluctuation
1	2/17/2022	2/17/2022	1	N/A	0.02	LNG Tank Pressure Release Due to Temperature Fluctuation
1	6/9/2022	6/9/2022	1	N/A	0.02	LNG Tank Pressure Release Due to Temperature Fluctuation
1	9/30/2022	9/30/2022	1	N/A	0.04	LNG Tank Pressure Release Due to Temperature Fluctuation
1	12/29/2022	12/29/2022	1	N/A	0.03	LNG Tank Pressure Release Due to Temperature Fluctuation
Sum Total					0.137	

Appendix 3; Rev. 03/30/2023

Header column "Comment" boxes displayed below for reference.	
Column Heading	Description and Definition of Required Contents (IF not self-explanatory)
Compressor Vented Emissions	
ID	
Geographic Location	GIS, zip code, or equivalent
Compressor Type	C = centrifugal R = reciprocating
Prime Mover	
Number of Cylinders	
Number of Seals	
Seal Type	W = wet D = dry NA = not applicable
Measurement Frequency	A - Annual Q - Quarterly M - Monthly W - Weekly D - Daily
Emission Factor: Measurement Date - Pressurized Operations	
Operating Mode: Pressurized Operating (hours)	
Operating Mode: Pressurized Idle (hours)	
Operating Mode: Depressurized Idle (hours)	
Operating Mode: Offline (Hours)	
Emission Factor: Pressurized Operating (scf/hr)	Use these EF columns as well as the columns for the Compressor Measurements noted in Columns R thru AB when they are applicable. If the data is not captured by the operator, then add a note explaining why the applicable measurement data was not recorded or available in the Explanatory Notes / Comments column.
Emission Factor: Pressurized Idle (scf/hr)	
Emission Factor: Depressurized Idle (scf/hr)	
Emission Factor: Offline (scf/hr)	If the "Offline" hours are counted, then a measurement of "offline" emissions should be taken to determine whether emissions occur. (We should not assume they are zero.)
Emission Factor: Pressurized Operating - Rod Packing (scf/hr)	These are new columns for reporting year 2020 of 2019 data. These only apply to operators who during their operations and surveys of compressor stations measure their Compressor Vented Emissions for these components of the compressor. Not all gas operators measure vented emissions and establish flow rates for vented emissions while at the various modes of operation. The current regulations require an annual
Emission Factor: Pressurized Operating - Blowdown Valve (scf/hr)	
Emission Factor: Pressurized Operating - Wet Seal Oil Degassing Vent (scf/hr)	
Emission Factor: Pressurized Operating - Wet Seal (scf/hr)	

Emission Factor: Pressurized Operating - Dry Seal (scf/hr)	CPUC Staff strongly encourage more frequent measurement of the following compressor vented emissions. Compliance minimum is once annually, though Staff suggest the minimum frequency should be quarterly and measured at roughly the same time each quarter (e.g. on or around the component survey given mode of operation). More frequent measurements, e.g. monthly would be better due to the temporal changes in conditions that effect emissions. The more frequent measurements also provide an opportunity to detect worn rod packing or seals, which exacerbate emissions, and with timely awareness of suboptimal operations gas operators have an opportunity for accelerating maintenance to correct worn parts. The following steps for reporting more frequent measurements in 2020 are outlined in the adjacent cell, and should be provided if available.
Emission Factor: Pressurized Idle - Rod Packing (scf/hr)	
Emission Factor: Pressurized Idle - Blowdown Valve (scf/hr)	
Emission Factor: Pressurized Idle - Wet Seal Oil Degassing Vent (scf/hr)	
Emission Factor: Pressurized Idle - Wet Seal (scf/hr)	
Emission Factor: Pressurized Idle - Dry Seal (scf/hr)	
Emission Factor: Pressurized Idle - Isolation Valve (scf/hr)	
Annual Emissions (Mscf)	
Explanatory Notes / Comments	
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
Device Type	C = connector O = open-ended line M = meter P = pneumatic device PR = pressure relief valve V = valve
Bleed Rate	L = low bleed I = intermittent bleed H = high bleed NA = not applicable
Manufacturer	
Engineering or Manufacturer's based Estimate of Emissions	
Annual Emissions (Mscf)	
Explanatory Notes / Comments	
Compressor & Component Fugitive Leaks	
ID	
Geographic Location	GIS, zip code, or equivalent
Device Type	C = connector O = open-ended line M = meter P = pneumatic device PR = pressure relief valve V = valve OT = Other
Emission Factor: Mscf/day/dev	From Appendix 9 use the applicable EF, and if necessary convert it to Mscf/day for each device.
Manufacturer	
Discovery Date (MM/DD/YY)	List the actual discovery date. If the leak was discovered in the year of interest or carried over from prior year, 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.
Prior Survey Date (MM/DD/YY)	<p>Before the discovery date of the leak, there was a "Prior Survey Date" when the compressor station was tested and no leak was found.</p> <p>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.</p> <p>Note, a facility level survey date is sufficient to establish the prior survey date.</p>
Number of Days Leaking	<p>The algorithm that is used for determining the number of days leaking should conform to the following guidance:</p> <p>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.]</p> <p>$(\text{Discovery Date} - \text{Prior Survey Date})/2$</p> <p>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.*</p> <p>$(\text{Repair Date} - \text{Discovery Date})$, unless repair date greater than 12/31/XX then use 12/31/XX</p> <p>---</p> <p>$\text{Days Leaking} = (\text{Repair Date} - \text{Discovery Date}) + (\text{Discovery Date} - \text{Prior Survey Date})/2 + 1$</p> <p>* [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.]</p>
Annual Emissions (Mscf)	
Explanatory Notes / Comments	
Storage Tanks	
Total Number	
Discovery Date (DD/MM/YY)	
Repair Date (DD/MM/YY)	
Number of Days Emitting	Emitting from discovery date thru the repair date (if repaired in year of interest) or December 31 of subject year, whichever is earlier. (Duration of Leak = discovery date - repair date (or December 31) + 1 day.)
Emission Factor (Mscf/yr)	
Annual Emissions (Mscf)	