

Gill Ranch Storage

Natural Gas Leakage Abatement Report

In partial fulfillment of

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.

And In Response to Data Request
Gill Ranch Storage R15-01-008 2017 Annual
Report

By:

Ricardo Gonzalez
Gill Ranch Storage LLC

Date: 6/15/2017

Introduction

The following data¹ have been prepared to comply with Senate Bill 1371 (Leno, 2014), Section 2, Article 3, Order Instituting Rulemaking (OIR) 15-01-008, and to provide our responses to Data Requests Gill Ranch Storage R15-01-008 2016 Annual Report.

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

- (1) A summary of changes to utility leak and emission management practices from January 1st, 2016 to December 31st, 2016. The report must include a detailed summary of changes, including the reasoning behind each change and an explanation of how each change will reduce methane leaks and emissions.

Response:

Gill Ranch is in the process of evaluating leak detection procedures and incorporating new instruments for detecting methane leaks.

- (2) A list of new graded and upgraded gas leaks discovered, tracked by geographic location in a Geographic Information System (GIS) or best equivalent, by grade, component or equipment, pipe size, schedule and material, pressure, age, date discovered and annual volume of gas leaked for each, by month, from January 1st, 2016 through December 31st, 2016.

Response:

See Appendices

¹ As defined in Data Request Gill Ranch Storage R15-01-008 2016 Annual Report

(3) A list of graded and ungraded gas leaks repaired, tracked by geographic location in a Geographic Information System (GIS) or best equivalent, by month, from January 1st, 2016 through December 31st, 2016. Include the grade, component or equipment, pipe size, schedule and material, pressure, age, date discovered, date of repair, annual volume of gas leaked for each and the number of days from the time the leak was discovered until the date of repair.

Response:

See Appendices

(4) A list of ALL open graded and ungraded leaks, regardless of when they were found, tracked by geographic location in a Geographic Information System (GIS) or best equivalent that are being monitored, or are scheduled to be repaired, by month, from January 1st, 2016 through December 31st, 2016. Include the grade, component or equipment, pipe size, schedule and material, pressure, age, date discovered, scheduled date of repair, and annual volume of gas leaked for each.

Response:

See Appendices

(5) System-wide gas leak and emission rate data, along with any data and computer models used in making that calculation, for the 12 months ending December 31st, of the reporting year.

Response:

See Appendices

(6) Calculable or estimated emissions and non-graded gas leaks, as defined in Data Request Gill Ranch Storage R15-01-008 2017 Annual Report for the 12 months ending December 31st, 2016.

Response:

See Appendices

(7) An annual report on measures that will be taken in the following year to reduce gas leaks and emissions to achieve the goals of SB 1371. The report must include a detailed summary of changes, including the reasoning behind each change and an explanation of how each change will reduce methane leaks and emissions.

Response:

Changes to consider this following year that can reduce methane leaks and emissions are as follows:

1. Purchase a corrosion coupon removal tool, so we do not have to blow down our Slug Catchers for this process. This tool will eliminate blow down emissions for this procedure.
2. Add compressed air to our low bleed PCVs at each well. This will eliminate the emissions from that system.
3. Add a block valve downstream of ESD valves to prevent gas from blowing down during our annual ESD Valve Test. We will be able to verify valve positions without venting any gas, keeping the emissions release to a minimum during this procedure.
4. Consult with our gas compressor motor manufacturer about setting our compressor suction pressure permissive higher during the loading stage.

This will allow us to load our compressors at a higher suction pressure, minimizing the amount of gas we have to blow down before starting up our units.

(END OF ATTACHMENT 3)

Gill Ranch Storage

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.

and In Response to Data Request Gill Ranch Storage R15-01-008 2017 June Report

Issued: March 31, 2017

Appendix 7

Rev. 3/31/17

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 Gill Ranch Storage R15-01-008 2017 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 Gill Ranch Storage R15-01-008 2017 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

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.

Response:

Underground Storage Facility Leaks and Emissions:

ID	Geographic Location	Source	Number of Sources	Emission Factor (Mscf/yr)	Annual Emissions (Mscf)	Explanatory Notes / Comments
None	93637		0	0	0	No Leaks

Gill Ranch Storage

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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 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.

Response:

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)	Annual Emissions (Mscf)	Explanatory Notes / Comments
C-210	93637	R	E	6	6	W	333	0	0	0	0	0	0	
C-220	93637	R	E	6	6	W	614	0	0	0	0	0	0	
C-230	93637	R	E	6	6	W	669	0	0	0	0	0	0	
C-240	93637	R	E	6	6	W	720	0	0	0	0	0	0	
C-250	93637	R	E	6	6	W	1045	0	0	0	0	0	0	
													0	

Gill Ranch Storage

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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 Gill Ranch Storage R15-01-008 2017 June Report

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(6) Calculable or estimated emissions and non-graded gas leaks, as defined in Data Request Gill Ranch Storage R15-01-008 2017 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

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

Response:

Underground Storage Facility Compressor Fugitive Leaks (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)	Discovery Date (MM/DD/YY)	Repair Date (MM/DD/YY)	Number of Days Leaking	Annual Emissions (Mscf)	Explanatory Notes / Comments
None	93637															0 0	No Leaks

Gill Ranch Storage

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Note - Definitions in Data Request Gill Ranch Storage R15-01-008 2017 June Report

Notes:

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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

Response:

Underground Storage Blowdowns:

ID	Geographic Location	Source	Compressor Type	Number of Blowdown Events	Annual Emissions (Mscf)	Explanatory Notes / Comments
C-210	93637	C	R	35	680	Start up blowdowns/ Maintenance
C-220	93637	C	R	35	516	Start up blowdowns/ Maintenance
C-230	93637	C	R	34	731	Start up blowdowns/ Maintenance
C-240	93637	C	R	10	173	Start up blowdowns/ Maintenance
C-250	93637	C	R	9	184	Start up blowdowns/ Maintenance
SC-113	93637	O		8	34	Maintenance
SC-123	93637	O		8	34	Maintenance
SC-133	93637	O		8	34	Maintenance
PIT 3000	93637	O		14	429	Compressor Start up Blowdown
Facility ESD	93637	O		2	165	Yearly ESD Testing/Maintenance
XV-3007	93637	O		2	52	Maintenance
T-311	93637	O		1	60	Maintenance
T-321	93637	O		4	180	Maintenance
PIT-4049	93637	O		1	148.7	Maintenance
Well 105 surface piping	93637	O		1	313.7	Maintenance
					3734	

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(6) Calculable or estimated emissions and non-graded gas leaks, as defined in Data Request Gill Ranch Storage R15-01-008 2017 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

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.

Response:

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
PCV-7110	93637	P	L	Fisher	100	N/A	365	0.1032	37.668	
PCV-7210	93637	P	L	Fisher	100	N/A	365	0.1032	37.668	
PCV-7310	93637	P	L	Fisher	100	N/A	365	0.1032	37.668	
PCV-7410	93637	P	L	Fisher	100	N/A	365	0.1032	37.668	
PCV-7510	93637	P	L	Fisher	100	N/A	365	0.1032	37.668	
PCV-7610	93637	P	L	Fisher	100	N/A	365	0.1032	37.668	
PCV-7710	93637	P	L	Fisher	100	N/A	365	0.1032	37.668	
PCV-7810	93637	P	L	Fisher	100	N/A	365	0.1032	37.668	
PCV-8110	93637	P	L	Fisher	100	N/A	365	0.1032	37.668	
PCV-8210	93637	P	L	Fisher	100	N/A	365	0.1032	37.668	
PCV-8310	93637	P	L	Fisher	100	N/A	365	0.1032	37.668	
PCV-8410	93637	P	L	Fisher	100	N/A	365	0.1032	37.668	
									452	

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Note - Definitions in Data Request Gill Ranch Storage R15-01-008 2017 June Report

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(6) Calculable or estimated emissions and non-graded gas leaks, as defined in Data Request Gill Ranch Storage R15-01-008 2017 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

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.

Response:

Underground Storage Component Fugitive Leaks (see note above):

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 or Engineering Estimate (Mscf/day)	Annual Emissions (Mscf)	Explanatory Notes / Comments
None	93637							0	0	0	No Leaks
										0	

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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

Response:

Underground Storage Dehydrator Vented Emissions:

ID	Geographic Location	Number of Sources	Emission Factor (Mscf/yr)	Annual Emissions (Mscf)	Explanatory Notes / Comments
Dehy 1	93637	0	0	0	No leaks at unit
Dehy 2	93637	0	0	0	No leaks at unit
				0	

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and In Response to Data Request Gill Ranch Storage R15-01-008 2017 June Report 3/31/2017

Appendix 8

Rev. 3/31/17

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 Gill Ranch Storage R15-01-008 2017 June Report

The following question in the above mentioned data request is answered using the spreadsheets in this Appendix (#8):

(5) System-wide gas leak rate data, Gill Ranch Storage R15-01-008 2016 May Report along with any data and computer models used in making that calculation, for the 12 months ending December 31st, of the reporting year.

Response:

Summary Tables:

System Categories	Emission Source Categories	Fugitive or Vented	Total Annual Volume of Leaks & Emissions (Mscf)	Total Annual Count of Leak & Emission Items
Transmission Pipelines	Pipeline Leaks	Fugitive	0	
	All Damages	Fugitive	0	
	Blowdowns	Vented	0	
	Component Emissions	Vented	0	
	Component Leaks	Fugitive	0	
	Odorizers	Vented	0	
Transmission M&R Stations	Station Leaks & Emissions	Fugitive	0	
	Blowdowns	Vented	0	
	Component Emissions	Vented	0	
	Component Leaks	Fugitive	0	
Transmission Compressor Stations	Compressor Emissions	Vented	0	
	Compressor Leaks	Fugitive	0	
	Blowdowns	Vented	0	
	Component Emissions	Vented	0	
	Component Leaks	Fugitive	0	
	Storage Tank Leaks & Emissions	Vented	0	
Distribution Main & Service Pipelines	Pipeline Leaks	Fugitive	0	
	All Damages	Fugitive	0	
	Blowdowns	Vented	0	
	Component Emissions	Vented	0	
	Component Leaks	Fugitive	0	
Distribution M&R Stations	Station Leaks & Emissions	Fugitive	0	
	Blowdowns	Vented	0	
	Component Emissions	Vented	0	
	Component Leaks	Fugitive	0	
Customer Meters	Meter Leaks	Fugitive	0	
	Above Ground MSA Leaks	Fugitive	0	
	Vented Emissions	Vented	0	
Underground Storage	Storage Leaks & Emissions	Fugitive	0	
	Compressor Emissions	Vented	0	
	Compressor Leaks	Fugitive	0	
	Blowdowns	Vented	3734 MSCF	172
	Component Emissions	Vented	37.668 MSCF	12
	Component Leaks	Fugitive	0	
	Dehydrator Vent Emissions	Fugitive	0	
Unusual Large Leaks	(Description)		0	

Gill Ranch Storage

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Note - Definitions in Data Request Gill Ranch Storage R15-01-008 2017 June Report

The following question in the above mentioned data request is answered using the spreadsheets in this Appendix (#8):

(5) System-wide gas leak rate data, Gill Ranch Storage R15-01-008 2017 June Report along with any data and computer models used in making that calculation, for the 12 months ending December 31st, of the reporting year.

Response:

System Wide Leak Rate Data

1/1/2016 - 12/31/2016

Gas Storage Facilities:

Average Close of the Month Cushion Gas Storage Inventory (Mscf)	Average Close of the Month Working Gas Storage Inventory (Mscf)	Total Annual Volume of Injections into Storage (Mscf)	Total Annual Volume of Withdrawals from Storage (Mscf)	Explanatory Notes / Comments
3543.307	17878.04323	8200433	-7670454	NA

Transmission System:

Total Annual Volume of Gas Used by the Gas Department (Mscf)	Total Annual Volume of Gas Transported to or for Customers* in State (Mscf)	Total Annual Volume of Gas Transported to or for Customers* out of State (Mscf)	Total Annual Volume of Gas Transported to utility-owned or third-party storage fields for injection into storage (Mscf)	Explanatory Notes / Comments
NA	NA	NA	NA	NA

Distribution System:

Total Annual Volume of Gas Used by the Gas Department (Mscf)	Total Annual Volume of Gas Transported to or for Customers* in State (Mscf)	Total Annual Volume of Gas Transported to or for Customers* out of State (Mscf)	Explanatory Notes / Comments
NA	NA	NA	NA

*The term customers includes anyone that the utility is transporting gas for, including customers who purchase gas from the utility.

Customers can be anyone including residential, businesses, other utilities, gas transportation companies, etc.

Gill Ranch Storage

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Note - Definitions in Data Request Gill Ranch Storage R15-01-008 2017 June Report

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(5) The system-wide gas leak rate data, as defined in Data Request Gill Ranch Storage R15-01-008 2016 May Report along with any data and computer models used in making that calculation, for the 12 months ending December 31st, of

Response:

Summary Tables:

Natural Gas Properties	Average Mole Percent	Explanatory Notes / Comments
Methane	92	
Carbon Dioxide	3.8	
Ethane	0	
C3+	0.0057	
C6+	0.29	
Oxygen	0	
Hydrogen	0	
Sulfur	1.3	
Water	0.01	
Carbon Monoxide	0	
Particulate Matter	0	
Inert Gas	0	
Odorant	NA	