

STATE OF VERMONT
PUBLIC SERVICE BOARD

Petition of Vermont Gas Systems, Inc.,)
requesting a Certificate of Public Good pursuant)
to 30 V.S.A. § 248, authorizing the construction)
of the "Addison Natural Gas Project" consisting)
of approximately 43 miles of new natural gas)
transmission pipeline in Chittenden and Addison)
Counties, approximately 5 miles of new)
distribution mainlines in Addison County,)
together with three new gate stations in)
Williston, New Haven and Middlebury,)
Vermont)

Docket No. 7970

RESPONSE OF PETITIONER TO CONSERVATION LAW FOUNDATION'S
THIRD SET OF INFORMATION REQUESTS ON PETITIONER

This is the response of Vermont Gas Systems, Inc. ("VGS" or "Petitioner") to the Third Set of Discovery Requests ("Discovery Requests") of Conservation Law Foundation ("CLF"). Petitioner is filing one complete hard copy of its responses with the Public Service Board ("Board"), with two copies served on CLF and a copy served on each other party of record.

General Objections:

1. Petitioner objects to any instructions contained in the Discovery Requests to the extent such instructions purport to place on Petitioner greater requirements or reserve greater rights to CLF than are permitted by the Vermont Rules of Civil Procedure as made applicable to Board proceedings through Board Rule 2.214 (A).
2. Petitioner objects to any request for information or production of document(s) that is (or are) subject to the attorney-client privilege, constitute work product, are protected under state or federal law or are proprietary, competitively sensitive or confidential.
3. Petitioner objects to requests to the extent that they (a) are overbroad or unduly burdensome; (b) are cumulative; (c) call for the production of documents not in the possession, custody or control of Petitioner; (d) call for the review, compilation, or production of publicly-available documents that could be obtained by the requesting party in a less burdensome manner; (e) are vague and/or ambiguous; (f) seek information not reasonably calculated to lead to the discovery of admissible evidence; or (g) call for the review, compilation, or production of a voluminous number of documents at great expense to Petitioner.

4. Petitioner does not hereby waive any objections, and it reserves the right to later raise any additional, available objections.

5. Responses and objections indicated herein reflect the position of the individual specified by Petitioner and not the other respondents unless specifically stated otherwise.

Q.CLF:VGS.3-1: Identify and produce all data specific to the VGS system that was used to calculate the expected GHG emissions from the project. Kindly provide the requested documents in machine-readable spreadsheets if they exist.

A.CLF:VGS.3-1: Object to the extent the questions asks for private attorney-client communication or attorney work product information. Without waiving the objection, there are no responsive documents.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-2: Admit that the GHG emissions analysis you performed is not based on actual data from the VGS network. If denied, identify and provide all data from the VGS network that was used for your analysis.

A.CLF:VGS.3-2: Admit. I made conservative assumptions regarding emissions from the VGS network based on the emission estimate in the US EPA 2013 GHG inventory for distribution systems. The assumption is conservative because Vermont Gas's system does not contain cast iron or bare steel pipe.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-3: Admit that the EPA regulations cited in your testimony affect sources from within the United States and do not affect sources from Canada. If denied, identify and produce all information on which your denial is based.

A.CLF:VGS.3-3: Admit.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-4: Admit that the NETL study (Exhibit Petitioner Reb. JB-8) provides estimates of methane and carbon dioxide.

A.CLF:VGS.3-4: Admit.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-5: Produce the Canadian study identified on page 5 line 18 of your testimony.

A.CLF:VGS.3-5: See **Attachment A.CLF:VGS.3-5** (Shale Gas Update for GHGenius, S&T² Consultants Inc., August 31, 2011).

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-6: Provide the basis for your assumption on page 5 line 19 "that 25% of the wells are venting and 75% are controlled."

A.CLF:VGS.3-6: This is an assumption based on the cited study prepared for Natural Resources Canada (Natural Resources Canada. August 2011. "Shale Gas Update for GHGenius." Prepared by S&T² Consultants). In describing completion emissions, the report states that practice in Canada is very different from the U.S. and takes as an example, production in the Horn River Basin, where it says that there is no venting at all during well completion. Because it is not completely clear that this practice holds everywhere we assumed 25% venting rather than 0% venting.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-7: Identify and produce, and provide in machine readable format if available, all data supporting:

- a. Your assumptions regarding the amount (by volume) of gas originating in Canada;
- b. Your assumptions regarding the geographic location of the origin of the gas.

A.CLF:VGS.3-7: Objection to the extent that the request seeks documents that are protected by attorney-client privilege or attorney work product. Without waiving the objection, I provide the following response:

a. 85% of the gas by volume is assumed to originate in Canada. I based this estimate on information provided by VGS indicating that 70% of their purchases (as reflected in their most recent Purchased Gas Adjustment filing with the Vermont Public Service Board) was sourced from Alberta with the remaining 30% sourced from Parkway, Ontario. Since Ontario purchases could originate from either Western Canada or the United States, I assumed that 50% of the Parkway purchases were Canadian-based and that the remaining 50% were U.S. based. See **Attachment A.CLF:VGS.3-7** (Vermont Gas Systems, Inc., Forecasted Gas Costs April 2013 to March 2014).

b. I assumed that the Canadian-based gas originated in Western Canada and the U.S. based gas originated in Pennsylvania.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-8: Regarding your testimony on page 6, lines 8 -12, identify the basis that the example provided reflects any expected reality.

- a. Produce, and provide in machine readable format if available, all data relied on in response to the previous question.

A.CLF:VGS.3-8: This is simply a hypothetical example, however with the projected expansions to the VGS system, the possibility of connecting with the U.S. gas grid will be increased.

- a. I did not rely on any documents to support this statement.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-9: Identify and produce, and provide in machine readable format if available, all data supporting the 0.3% leakage factor referred to on page 6, line 15 of your testimony.

- a. Produce, and provide in machine readable format if available, all data from VGS supporting the 0.3% leakage factor.

A.CLF:VGS.3-9: This is based on the EPA Inventory of U.S. GHG Emissions (see Annex 3, which is publicly available on the EPA website) and is calculated in the "EPA Inventory" tab of Exhibit Petitioner Reb. JB-3. See also Exhibit Petitioner Reb. JB-4.

- a. As previously explained, this leakage factor is based on EPA data. See A.CLF:VGS.3-2.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-10: Identify and produce, and provide in machine readable format if available, all information on which your estimate on page 6, lines 20-21 "that 85 % of the gas delivered by VGS comes from Western Canada and 15% comes from the Northeastern U.S.

A.CLF:VGS.3-10: See A.CLF:VGS.3-7.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-11: Identify the current percentage of gas delivered from Western Canada to the VGS network in Vermont.

A.CLF:VGS.3-11: See A.CLF:VGS.3-7.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-12: Identify the percentage of gas delivered from Western Canada to the VGS network in Vermont for each of the last seven years.

A.CLF:VGS.3-12: See **Attachment A.CLF:VGS.3-12** (Purchase Locations for Gas Delivered to VGS Network). Please note that Vermont Gas cannot confirm what portion of gas delivered from Parkway, Ontario or Phillipsburg, Quebec originated in Western Canada.

Person Responsible for Response: Eileen Simollardes
Title: Vice President, Supply and Regulatory Affairs, Vermont Gas Systems, Inc.
Date: July 26, 2013

Q.CLF:VGS.3-13: Regarding your testimony on page 7, lines 7 – 8 identify and produce, and provide in machine readable format if available, all information on which the statement that the 3% average 'leakage' value is "comparable to the estimated emission rate for VGS' current supply mix."

A.CLF:VGS.3-13: This calculation is in the "Natural Gas Analysis" tab of Exhibit Petitioner Reb. JB-3 where the leakage rate is calculated to be 2.9%. See also A.CLF:VGS.3-21.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-14: In Exhibit Petitioner Reb JB-3, the tab labeled "Natural Gas Analysis," please explain why emissions from 'well construction' are set to zero (cell F8)?

A.CLF:VGS.3-14: This cell expresses the methane share of well construction emissions, which is zero according to the NETL study.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-15: In Exhibit Petitioner Reb JB-3, the tab labeled "Natural Gas Analysis," please explain why the delivered basis and production leak rates (cells E71 and E72 respectively) are divided by 0.481 and 0.788 respectively?

A.CLF:VGS.3-15: 0.481 is a conversion factor from cubic feet of gas to metric tonnes of CO₂e. 0.788 is an estimate of the methane content of wellhead gas.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-16: In Exhibit Petitioner Reb JB-3, the tab labeled "Natural Gas Analysis," please explain why emissions from 'Compressors' within the processing segment are reduced by 0.4 percent points (cell F21) from 27.4% (cell D10) to 27.0% (cell F10)?

A.CLF:VGS.3-16: The question appears to be confusing two different rows. Cell D10 is total emissions from "workovers," including methane and CO₂. Cell F10 is methane-only emissions from "workovers." The 0.4% represents the CO₂ component of emissions.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-17: In Exhibit Petitioner Reb JB-3, the tab labeled "Natural Gas Analysis," please explain why 'water delivery' and 'water treatment' emissions are set to zero (cells F14 and F15 respectively)?

A.CLF:VGS.3-17: This cell expresses the methane share of water delivery and water treatment emissions, which is zero according to the NETL study.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-18: In Exhibit Petitioner Reb JB-3, the tab labeled "Natural Gas Analysis," please explain why 1.2% is subtracted from the emissions from 'Acid Gas Removal' (cell F16)?

A.CLF:VGS.3-18: This is calculating the split of CO₂ vs methane emissions as indicated in the NETL study.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-19: In Exhibit Petitioner Reb JB-3, the tab labeled "Natural Gas Analysis," please explain why emissions from 'pipeline compressors' are set to zero (cell F23)?

A.CLF:VGS.3-19: This cell expresses the methane share of pipeline compressor emissions, which is zero according to the NETL study. (The pipeline compressor emissions are CO₂ – cell E23.)

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-20: In Exhibit Petitioner Reb JB-3, the tab labeled "Natural Gas Analysis," please explain why emissions from 'Compressors' within the processing segment are reduced by 15 percent points (cell F21) from 19.4% (cell D21) to 4.4% (cell F21)?

A.CLF:VGS.3-20: This is calculating the split of methane emissions and CO₂ as indicated in the NETL study on which the analysis is based. The NETL study indicates that the emissions from compressors are CO₂ (from combustion) and not methane.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-21: In Exhibit Petitioner Reb JB-3, the tab labeled "Natural Gas Analysis" (cells E71 and E72), please explain why the 2.9% leak rate calculated here should not be used to estimate methane emissions for the Addison project?

A.CLF:VGS.3-21: This leak rate was used to estimate methane emissions for the Addison Project. See A.CLF:VGS.3-13.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-22: In Exhibit Petitioner Reb JB-5 pages 38 and 40, the ICF LCA assessment for NYC lists valves as a source of fugitive methane emissions. In Exhibit Petitioner Reb JB-3, the tab labeled "Natural Gas Analysis," ICF's valve emissions are set to zero. Please explain this discrepancy.

A.CLF:VGS.3-22: The tab labeled "Natural Gas Analysis" has two lines for valve emissions, Row 13 for valve fugitive emissions for extraction, and Row 20 for valve fugitive emissions for processing plants. The question is referencing Row 20. For processing plants the NETL study reports zero valve emissions.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-23: In Exhibit Petitioner Reb JB-3, the tab labeled "Oil -Biofuel," 2006 emissions and 2020 projected emissions for biofuels are averaged (cells F17:F25). Provide the basis and all supporting evidence (including machine readable spreadsheets if applicable) for this assumption.

A.CLF:VGS.3-23: The 2006 and 2020 estimates differ due to assumed improvements in the production and processing of biofuels that may take place in the future. The two values were averaged to take account of the fact that these improvements have not yet fully taken place.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-24: On page 10 of Exhibit Petitioner Reb JB-2 and page 52 of Exhibit Petitioner Reb JB-5), emissions for biofuels burned in Vermont are assumed to be higher than those burned in New York. Please explain how this discrepancy impacts on Mr. Bluestein's analysis. Please provide the basis for any related calculations and all supporting evidence (including machine readable spreadsheets if applicable) for this assumption.

A.CLF:VGS.3-24: This information is from the cited reference and relates to the differences in emissions for biofuel transportation between the regions. Exhibit Petitioner Reb. JB-7.

There is no discrepancy. The source study has different values for different parts of the country based on different sources and transportation requirements. The upstream emissions for New England are higher than for New York.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-25: On page 53 of Exhibit Petitioner Reb JB-5 and page 52 of Exhibit Petitioner Reb JB-5, Vermont and New York boilers are assumed to have different efficiencies. Please explain how this discrepancy impacts on Mr. Bluestein's analysis. Please provide the basis for any related calculations and all supporting evidence (including machine readable spreadsheets if applicable) for this assumption.

A.CLF:VGS.3-25: The information for boiler efficiency is based on information specific to each region. The assumptions for New York boiler efficiency were provided by the City of New York. The assumptions for Vermont boiler efficiency are based on assumptions from the DPU and information about new gas-fired boilers provided by VGS. The difference in the assumptions would not change the fundamental result of the analysis.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-26: On Bluestein, page 5, lines 11-17, do alterations to NETL's data account for projected benefits from requirements in the newly adopted U.S. EPA New Source Performance Standards (40 C.F.R. Part 60, Subpart OOOO)? Do you make the same adjustment for the heating oil Life Cycle Assessment? Please provide the basis for any related calculations and all supporting evidence (including machine readable spreadsheets if applicable) for this assumption.

A.CLF:VGS.3-26: The analysis accounts for some but not all of the effects of the NSPS OOOO. Actual emissions from the gas sector would be lower than estimated here. The source categories that were adjusted do not apply to oil production and NSPS OOOO in general has negligible applicability to oil production.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

Q.CLF:VGS.3-27: Please confirm that in Exhibit Petitioner Reb JB-3 all of your numbers are reported in CO₂-eq on the 20-year timescale. Please indicate what of these CO₂-eq emissions are from methane, how much from CO₂, and how much from other greenhouse gases, each in lbs. of the applicable gas.

A.CLF:VGS.3-27: The numbers are not reported on a 20-year time scale. Rather, the emissions are calculated using a 100 year GWP. Only CO₂ and methane are included in the analysis. The breakdown of methane and CO₂ is shown in the "Natural Gas Analysis" tab of Exhibit Petitioner Reb. JB-3.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

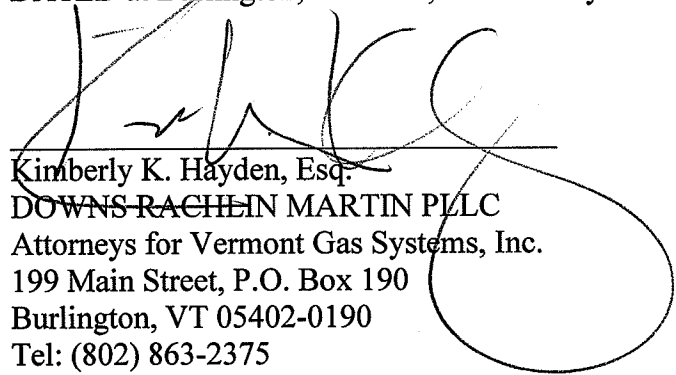
Q.CLF:VGS.3-28: Admit that the EPA emissions in the Greenhouse Gas Inventory (Exhibit Petitioner Reb JB-4) are based on a limited data set populated by engineering calculations performed by natural gas producers, supplied to the EPA.

A.CLF:VGS.3-28: Deny. The estimates of methane emissions in the EPA inventory are based on a variety of sources including independent emission surveys, measured data, and independent calculations as well as information reported by the natural gas industry.

Person Responsible for Response: Joel Bluestein
Title: Senior Vice President, ICF International
Date: July 26, 2013

As to objections:

DATED at Burlington, Vermont, this 26th day of July, 2013.



Kimberly K. Hayden, Esq.
~~DOWNS RACHEL~~ MARTIN PLLC
Attorneys for Vermont Gas Systems, Inc.
199 Main Street, P.O. Box 190
Burlington, VT 05402-0190
Tel: (802) 863-2375

14372521.1