

UNACCOUNTED-FOR GAS VARIANCE ACCOUNT

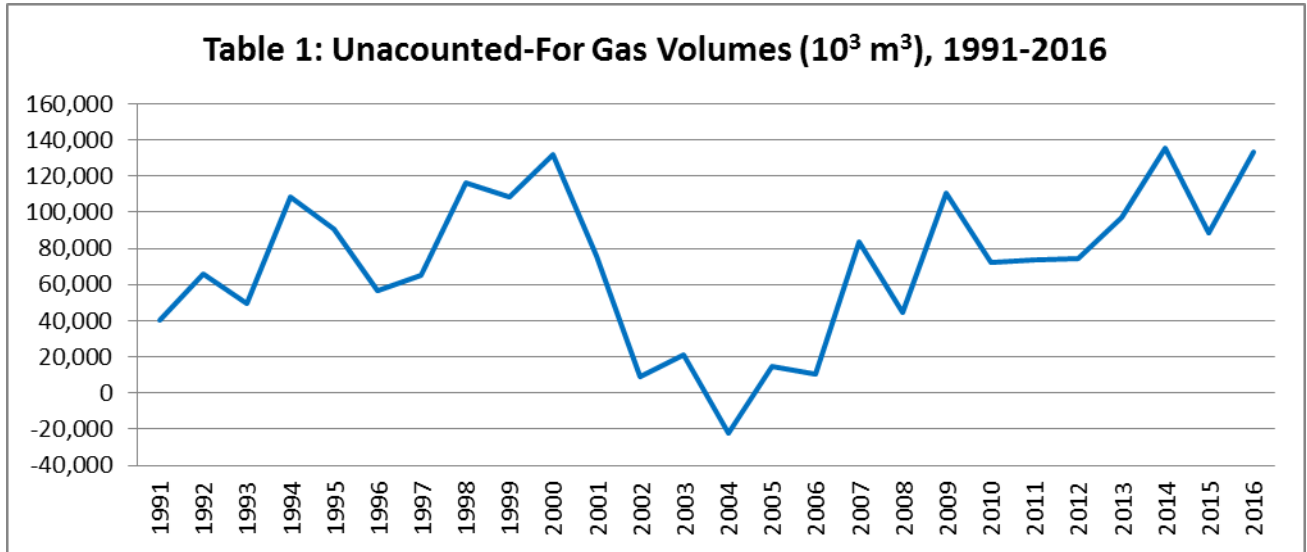
1. This evidence provides the volumetric variance underpinning the balance in the Unaccounted-For Gas Variance Account (“UAFVA”). It will describe the 2016 variance relative to historical Unaccounted-For Gas (“UAF”) volumes.
2. UAF is the difference between natural gas delivered into the distribution system as billed by third-party transmission entities (namely, TransCanada Pipelines and Union Gas) and natural gas that is billed as consumption to over two million customers. Owing to its residual nature, UAF cannot be measured directly. UAF can arise from meter differences, operational or external factors such as line leakage, unmetered uses, and third party damages. In addition, because gas volumes are affected by temperature and pressure, measurement is made more difficult.
3. In the Company’s UAF study filed in 2013 (EB-2011-0354, Exhibit D2, Tab 6, Schedule 1), results identified meter uncertainty as the main source of UAF. Custody transfer meters, residential diaphragm meters, rotary meters and other meters are inspected by Measurement Canada to be within +/-2% depending on the type of meter. 2016 UAF is within the tolerance levels, at 1.18% of total 2016 throughput volumes.
4. The 2016 level of UAF was determined to be $133,112 \text{ } 10^3\text{m}^3$. The variance of $48,346 \text{ } 10^3\text{m}^3$, which is the difference between actual UAF volume and the forecast UAF volume of $84,766 \text{ } 10^3\text{m}^3$, underpins the \$7.9M account balance that is captured in the UAFVA.
5. Although the root causes of UAF are generally known as noted earlier, it continues to be difficult to quantify the individual factors due to their nature. The Company

Witnesses: J. Shem
M. Suarez

has estimated the increase in line pack and venting associated with the GTA Project. Estimates show the combined impact to be 2% of the 2016 UAF. No significant factors are known to have occurred in 2016 that would have contributed to a higher UAF than recently experienced.

6. As shown in Tables 1 and 2 in the following pages, UAF has been quite volatile over the years, showing some stability from 2010-2012, and followed by higher levels especially in 2014 and 2016. The 2016 UAF level falls within the 95% confidence interval, bounded by $(17,701) 10^3\text{m}^3$ and $153,998 10^3\text{m}^3$.

Witnesses: J. Shem
M. Suarez



Witnesses: J. Shem
M. Suarez

Table 2

<i>Col.1</i>	<i>Col.2</i>
Calendar Year	UAF Volumes (10³ m³)
1991	40,662
1992	66,028
1993	49,782
1994	108,765
1995	90,655
1996	56,739
1997	65,228
1998	116,376
1999	108,201
2000	132,021
2001	75,606
2002	9,284
2003	21,412
2004	-22,406
2005	14,815
2006	10,274
2007	83,823
2008	44,424
2009	110,917
2010	72,104
2011	73,355
2012	74,762
2013	97,361
2014	135,380
2015	88,438
2016	133,112
	1991-2015
Standard Deviation	40,822
Mean	68,960
Lower bound*	-15,296
Upper bound*	153,216

*95% confidence interval with 24 degrees of freedom (number of observations-1)

Witnesses: J. Shem
 M. Suarez