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Item No. 3

**Halifax Regional Council
June 23, 2015**

TO: Mayor Savage and Members of Halifax Regional Council

Original Signed by Director

SUBMITTED BY:

Bruce Zvaniga, Director Transportation & Public Works

DATE: May 1, 2015

SUBJECT: Heritage Gas Outage Statistics Review

INFORMATION REPORT

ORIGIN

The October 21, 2014 motion was moved by Councillor McCluskey and seconded by Councillor Nicoll that:

“Halifax Regional Council request a staff report regarding the number of natural gas leaks annually since 2008 and the impact on business and residents and any best practise and/or actions HRM should be taking with Heritage Gas and contractors to address these leaks.”

LEGISLATIVE AUTHORITY

HRM Charter, section 2(c)(iii) - The purpose of this Act is to recognize that the functions of the Municipality are to develop and maintain safe and viable communities.

BACKGROUND

As of December 31, 2014, Heritage Gas has installed 400 km of gas mains and 4500 service connections with availability extending from Dartmouth, to Peninsular Halifax, Clayton Park/Fairview as well as Bedford and the Halifax Aerotech and Airport areas. Heritage Gas actively promotes a “Call Before You Dig” message through various media and offers free safety information sessions to contractors, customers and organizations such as the NS Construction Safety Association which focus on “Call Before You Dig” and safe excavation practices when working near gas lines.

Despite these efforts, gas mains are still occasionally struck during construction/excavation activities. Line strikes can result in loss of service and evacuation of immediate areas impacted until the escaping gas is contained and damaged pipes repaired.

DISCUSSION

Over the past seven years, Heritage Gas has had 36 line strikes. 14 did not damage the pipeline to the point where the line needed to be taken out of service. However, 21 instances resulted in damage to the gas line which resulted in the release of natural gas and shutting off flow to minimize risk of explosion and allowing for a safe line repair (See Attachment A – **Heritage Gas – HRM Line Contacts (2008-2014)**). These interruptions have not resulted in personal injury or damage to residential or commercial property. Customer interruptions averaged four hours, with the longest outage lasting eight hours. In addition, another 14 line contacts occurred over this period which did not result in a gas leak or a disruption of service to natural gas customers.

While no direct damage has occurred as a result of the gas leaks and associated disruptions, impacts resulting from Halifax Regional Fire and Emergency Service’s (HRFE) need to secure the immediate area and ensure residents are a safe distance from the gas leak, have been experienced. To confirm areas are clear, HRFE has had to enter residences by forcing open doors and/or windows, resulting in damage to the property. In addition, costs associated with evacuating their businesses or residences while gas line repairs are undertaken, have been incurred. Heritage Gas is obligated to recover only direct costs from the contractor responsible for damage to its infrastructure. Recovery of any indirect costs is the responsibility of individuals impacted.

After every line strike, Heritage Gas investigates the root cause of each incident. Prior to 2014, the root cause for the vast majority of gas lines being hit was “No Locates”, or “Locates not Renewed”. For example, in 2013, four (4) of the five (5) incidents which resulted in gas release were due to locates not being requested or renewed. In 2014, three (3) gas lines were damaged during excavation activities. Unlike 2013, however, all had been located by Heritage Gas as a result of a “Call Before You Dig” request. Gas lines were located and marked prior to any excavation taking place. In each of these excavations, mechanical means, i.e., back hoe, was used for removing material when safe digging practices should have been applied while working in close proximity to natural gas pipelines, or as the Root cause indicates, “Improper Excavation Practices”.

Such practices require that within one metre of any gas line, that line should be hand exposed before mechanical equipment is allowed to be used to remove materials around the gas line. In no instance shall mechanical means be used for removing materials when the excavation is

within 12 inches of the line. In all three of the 2014 incidents, the contractor had indicated they were aware of safe excavation practices but had not followed them to the fullest extent.

Locate requests in HRM have grown from 3,516 in 2008 to 10,859 in 2014 (Attachment C), and infrastructure has expanded to about 400 km of buried gas lines. At the same time, damages/1000 locate requests have steadily reduced from a high of about 1.8 in 2008 to about 0.7 in 2013. This is consistent with the national trend which dropped from approximately 6 damages/1000 locate Requests in 2007 to 3 in 2013 (**see Attachment B – 3rd Party Damages per 1,000 Locate Requests**). The tripling of locate requests accompanied by the decrease in annual gas line damage frequency would suggest that education and training by the utility are having an effect on the construction industry.

Heritage Gas indicate that they have promoted “Call Before You Dig” through:

- Radio advertisements;
- Running print ads;
- Publishing and distributing “Call Before You Dig Awareness Bulletins” during the construction season (see Attachment D);
- Offering free safety and information sessions to contractors, customers and local organizations like the NS Construction Safety Association.

In addition, HRM reinforces safety in conjunction with natural gas infrastructure in the right of way through the administration of access to the municipal right of way. This includes:

- **Streets and Services Permits** including an instruction to:
 - “contact “DIG ALERT: 1-866-313-3030” prior to the commencement of any site work – HERITAGE GAS”; and,
 - “Contractors must check with all utilities prior to digging”.
- **The Municipal Operating Access Agreement** between HRM and Heritage Gas, which includes a “**Locates**” clause that states:
 - (1) The Municipality and its contractors shall request line locates for all municipal projects that require excavation, included but not limited to sign installation, traffic loop modifications, tree planting, and any other projects undertaken by the Municipality. The Municipality shall require staff of the Municipality and contractors engaged by the Municipality to have valid natural gas locate information at all times, and to adhere to the Heritage safe excavation practices in the vicinity of the Gas Distribution System.
 - (2) Upon receiving a request from the Municipality, Heritage shall, at no cost to the Municipality, provide locations of its Gas Distribution System.
 - (a) Within two (2) hours in the event of an emergency, using reasonable best efforts;
 - (b) Within twenty-four (24) hours in the event of a priority request;
 - (c) Within forty-eight (48) hours in all other cases.

- (3) The Municipality shall, at no cost to Heritage, take an active role in promoting Call Before You Dig and safe excavation practices both within municipal departments and to third parties working in the Street.

- **Current practices associated with TPW capital projects**, including:
 - Heritage Gas are advised of and consulted on any proposed works through a pre-tender review process;
 - All project drawings clearly identify the need to “Call Before You Dig” and include the Heritage Gas contact number;
 - Heritage Gas are invited to attend all pre-construction meetings;
 - Prior to any excavation the HRM contractor must confirm all utilities have been located by providing a copy of the Utilities location slip;
 - If there is an incident with damage to a gas line caused by an HRM contractor, a stop work order is issued. No excavation work is permitted until the contractor submits a report outlining the cause and HRM are satisfied with the measures to be put in place to prevent further incidents.
- **Using a Hazard Assessment Form**, HRM's internal work crews evaluate what may be an obstacle before and during the work process. Staff request and receive locates before any excavation work is undertaken. In addition, as part of tender requirements, contractors are required to request and receive locates for work areas requiring excavation.

While municipal bylaw provisions respecting locate requirements, internal departmental processes, as well as the utility Call before you Dig program and safety awareness education provide a good basis for a cautious approach to excavating in the municipal right of way, other jurisdictions have introduced legislation which mandate a “One Call” system which requires anyone who intends to excavate to call for notification and for clearance from all underground utilities. Seven (7) provinces, including New Brunswick (St. John only) have implemented legislation respecting underground infrastructure notification system, commonly called One Call, or Call Before You Dig. The objects of such legislation include:

- To operate a call system to receive excavator requests for the location of underground infrastructure;
- Identify for excavators whether underground infrastructure is located in the vicinity of a proposed excavation;
- To notify members of the organization of proposed excavations that may affect utility underground infrastructure;
- To raise public awareness of the One Call service and the need for safe digging.

Nova Scotia Legislation includes penalties for failing to request line locates as well as causing damage to infrastructure, which provides an added incentive to excavators. Specific One Call legislation has not been enacted in Nova Scotia, but its Pipeline Act and associated Regulations, provides the ability to penalize those who do not “Call Before they Dig”. Although the cost to introduce a One Call system is considerable, as gas lines expand in HRM and throughout the Province, it may be worthwhile to consider supporting such an initiative by the Province.

FINANCIAL IMPLICATIONS

As no changes are being recommended, no financial implications are anticipated.

COMMUNITY ENGAGEMENT

No Community engagement was considered for this Report.

ATTACHMENTS

Attachment A – Heritage Gas – Line Hits (2008-2014)
Attachment B - 3rd Party Damages per 1,000 Locate Requests
Attachment C - Locate Requests (All Areas)
Attachment D - Natural Gas Awareness Bulletin

A copy of this report can be obtained online at <http://www.halifax.ca/council/agendasc/cagenda.php> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 902.490.4210, or Fax 902.490.4208.

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Attachment A Heritage Gas – Line Hits (2008-2014)

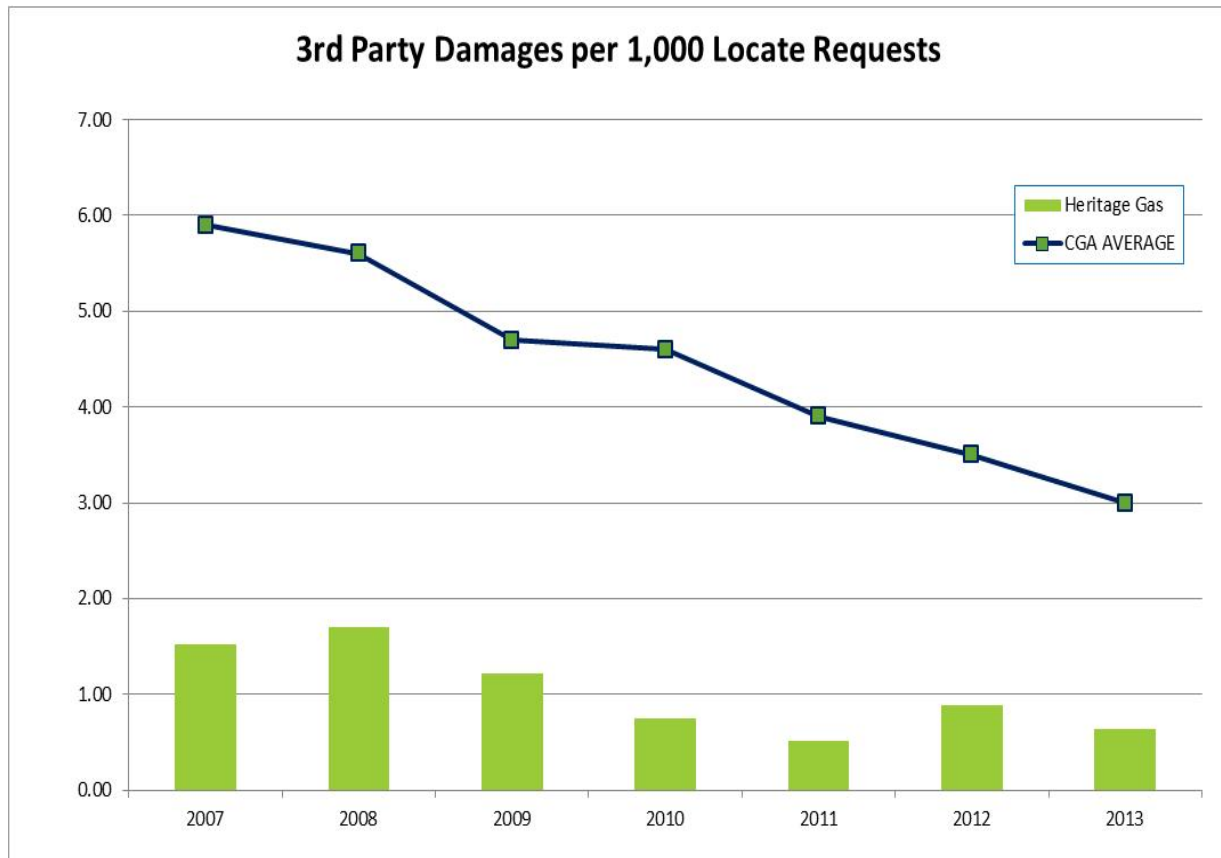
Heritage Gas - HRM Line Contacts (2008 - 2014)

January, 2015

Note: This table includes all line contacts that occurred within HRM, regardless of severity or extent of damage to pipe.

Date	Location	# of Gas Customers Impacted	Length of Outage (hrs)	Type of Contractor	Gas Release?	Root Cause
2008						
19-Mar-2008	32 Akerley Blvd, Dartmouth	-	-	3rd Party	NO	Improper Excavation Procedures
18-Jul-2008	62 Havenbrook Hill, Dartmouth	8	3.5	3rd Party	Yes	No Locates
3-Sep-2008	Peachtree Hill, Dartmouth	-	-	3rd Party	NO	Improper Excavation Procedures
18-Sep-2008	Windmill Rd, Dartmouth	-	-	3rd Party	NO	Improper Excavation Procedures
28-Nov-2008	150 Thornhill, Dartmouth	1	6	3rd Party	Yes	No Locates
2009						
20-Apr-2009	McClure Close, Dartmouth	-	-	3rd Party	NO	Improper Excavation Procedures
13-May-2009	Green Road, Dartmouth	1	3.5	3rd Party	Yes	No Locates
17-Aug-2009	Nantucket Ave, Dartmouth	1	3	3rd Party	Yes	Locates not renewed - Markings obscured
14-Sep-2009	Moore Rd, Dartmouth	1	4	HRM Crew (Sign Installation)	Yes	No Locates
2010						
19-Mar-2010	257 Freshwater Trail, Dartmouth	5	4.5	3rd Party	Yes	No Locates
20-May-2010	South Park Street, Halifax	-	-	3rd Party	NO	Improper Excavation Procedures
13-Sep-2010	Ilsey Ave, Dartmouth	2	3.5	Contractor working for HRM	Yes	Locates not renewed - Markings obscured
18-Nov-2010	87 Capstone Crescent, Bedford	0	N/A	3rd Party	Yes	No Locates
2011						
1-Aug-11	Lot 76 Freshwater Trail, Dartmouth	3	3	3rd Party	Yes	No Locates
15-Sep-11	Windmill Rd, Dartmouth	-	-	3rd Party	NO	Inaccurate Line Locate
20-Sep-11	Hollyhock Way, Bedford	-	-	3rd Party	NO	Improper Excavation Procedures
21-Sep-11	Morris St, Halifax	-	-	3rd Party	NO	Improper Excavation Procedures
14-Dec-11	Garland Ave, Dartmouth	-	-	Contractor working for Heritage Gas	NO	Improper Excavation Procedures
2012						
16-Jan-12	20 Dawn St, Halifax	3	3	3rd Party	Yes	No Locates
19-Jul-12	141 Bellbrook, Dartmouth	2	2.5	3rd Party	Yes	No Locates
6-Aug-12	6414 Coburg, Halifax	1	5.5	Contractor working for HRM	Yes	Locates not renewed - Markings obscured
28-Sep-12	Windsor St, Halifax	-	-	3rd Party	NO	Improper Excavation Procedures
1-Oct-12	Albro Lake Rd, Dartmouth	-	-	3rd Party	NO	Improper Excavation Procedures
2013						
24-Jan-2013	10 Kennedy Drive, Dartmouth	3	4	Contractor working for HRM	Yes	No Locates
8-May-2013	Green Park Close, Halifax	-	-	3rd Party	NO	Improper Excavation Procedures
12-Jul-2013	Vitalia Court, Halifax	-	-	3rd Party	NO	Improper Excavation Procedures
16-Jul-2013	South Park Street, Halifax	7	2.5	Contractor Working for Heritage Gas	Yes	Improper Excavation Procedures
16-Jul-2013	86 Gaston Road, Dartmouth	1	3	Contractor working for HRM	Yes	Locates not renewed - Markings obscured
31-Jul-2013	180 Basswood Run, Dartmouth	1	3	3rd Party	Yes	No Locates
10-Sep-2013	Vitalia Court, Halifax	-	-	3rd Party	Yes	No Locates
2014						
26-Mar-2014	Granville St, Halifax	70	5	3rd Party	Yes	Damage to Riser in Right-of-Way
11-Jun-2014	13 Wright Ave, Dartmouth	10	5	Contractor working for HRM	Yes	Improper Excavation Procedures
28-Jul-2014	North Park Street, Halifax	-	-	Contractor working for HRM	NO	Inaccurate Line Locate
23-Sep-2014	8 Gaston Road, Dartmouth	799	8	Contractor working for HRM	Yes	Improper Excavation Procedures
15-Oct-2014	Joseph Zatzman Drive, Dartmouth	21	5	Contractor working for HRM	Yes	Improper Excavation Procedures

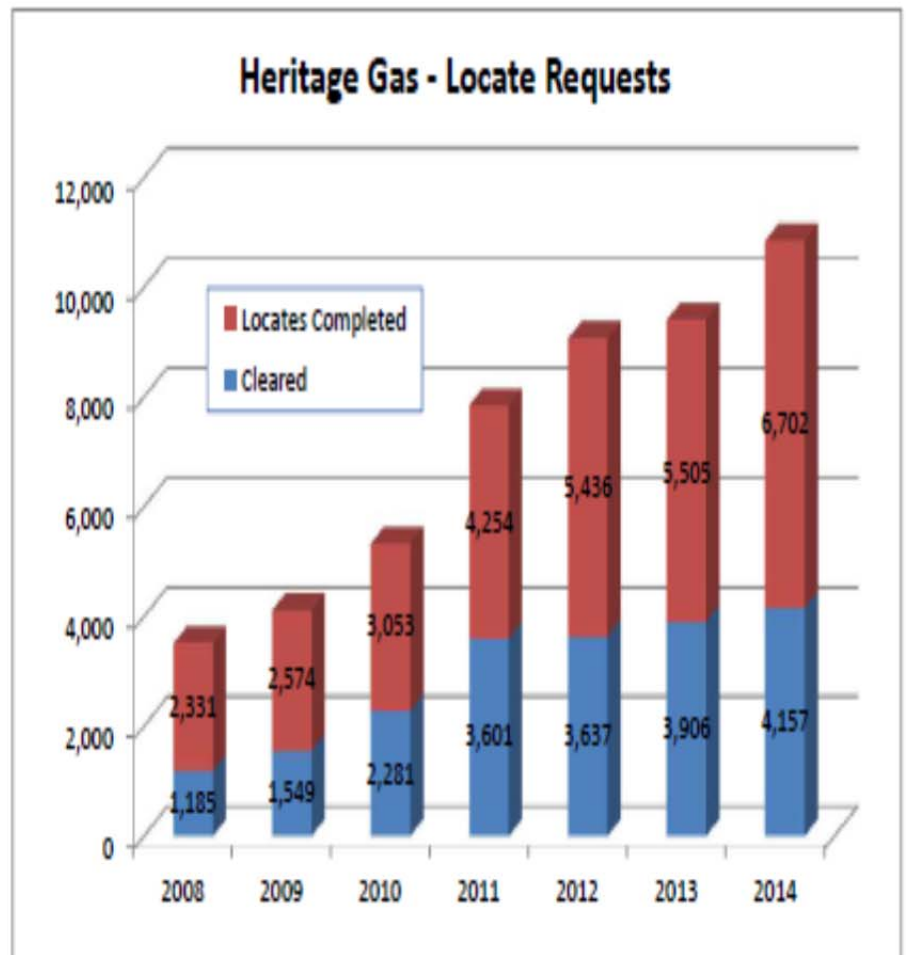
Attachment B - 3rd Party Damages per 1,000 Locate Requests




Attachment C - Locate Requests (All Areas).

Heritage Gas - Locate Requests (All Areas)

	2008	2009	2010	2011	2012	2013	2014
Number of Locate Requests	3,516	4,123	5,334	7,855	9,073	9,411	10,859
Locates Completed	2,331	2,574	3,053	4,254	5,436	5,505	6,702
Cleared	1,185	1,549	2,281	3,601	3,637	3,906	4,157



Attachment D – Natural Gas Awareness Bulletin



Natural Gas Awareness Bulletin


Call Before You Dig – 1-866-313-3030

November 2014

Know What's in the Ground Before You Start Your Work
One free, easy call gets Heritage Gas lines marked out in your work area.

- Protect Your Employees
- Protect the Public
- Avoid the Cost of Repairing Underground Lines

Call Before You Dig



1-866-313-3030

Heritage Gas

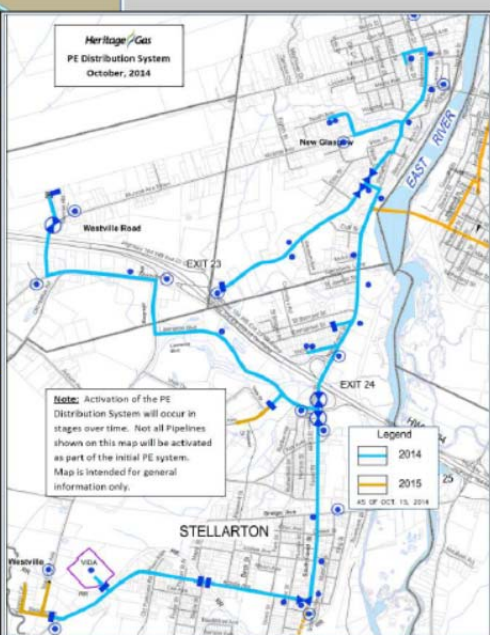
Natural Gas Pipelines Activated in New Glasgow and Stellarton

Over the last several months Heritage Gas has been very busy extending our natural gas distribution system in Pictou County. The Heritage Gas system now extends into the towns of Stellarton and New Glasgow.

Please remember to **Call Before You Dig** for any work that you have planned – **1-866-313-3030**



System Overview



Heritage Gas
PE Distribution System
October, 2014

Stellarton

Legend
2014
2015
AS OF OCT 15, 2014

Notes: Activation of the PE Distribution System will occur in stages over time. Not all Pipelines shown on this map will be activated as part of the initial PE system. Map is intended for general information only.



These maps are intended as an overview only – our system is expanding daily, so:
Call Before You Dig at 1-866-313-3030.



Safe Excavation Near Natural Gas Pipelines:

Contacting Heritage Gas to have gas lines marked out in your work area is the first step in safe excavation. Ensuring that the work occurring near natural gas lines is done properly and safely is the next step. Here are some important guidelines:

BEFORE EXCAVATION OCCURS WITHIN:

1 metre of the markings for a Polyethylene (PE) Gas Line
– OR –
5 metres of the markings for a Steel Gas Line,
The pipeline must first be exposed ("Daylighted") by
HAND DIGGING, or the use of a **HYDROVAC**.

Note: Heritage Gas Technicians must be on-site during daylighting of any Steel pipelines.

ONCE THE PIPELINE HAS BEEN DAYLIGHTED:

- The use of mechanical equipment (Excavators, etc...) is permitted up to 30 cm (1 foot) from the pipeline.
- **AT NO TIME IS MECHANICAL EQUIPMENT TO BE USED WITHIN 30 cm OF THE NATURAL GAS PIPELINE**
- Make sure the person operating the equipment understands where the natural gas lines are and where it is or is not safe to dig.
- Use a spotter at the excavation to watch for pipelines that the operator might not see and to warn when the operation is getting too close for safe excavation.

If you would like further assistance, Heritage Gas Technicians are available to assist you during your excavation at your request. **Please SCHEDULE A TIME** by contacting **1-866-313-3030** at least 48 hours ahead of your work to ensure that we can meet you on site at the time of excavation.

- All excavation work is the responsibility of the contractor doing the digging, but the Heritage Gas Technician can provide you with guidance on safe practices while working near the gas lines.



1 m for PE
5 m for Steel



Call Before You Dig
1-866-313-3030

More information is available in our **"Digging Safely Around Natural Gas Lines"** pamphlet. If you would like copies, or have any questions about the information, please call Heritage Gas:

1-866-313-3030

Natural Gas Training for Your Employees:

Heritage Gas offers training sessions (**free of charge**) that can be customized to your company and offered at your convenience. Topics covered include:

- Introduction to Natural Gas
- Natural gas pipelines and facilities
- **Call Before You Dig** and Safe Excavation
- Emergency Situations



If you would like more information on any of the items above, or would like to arrange a training session for your employees, please contact Chris MacAulay at (902) 466-1678.