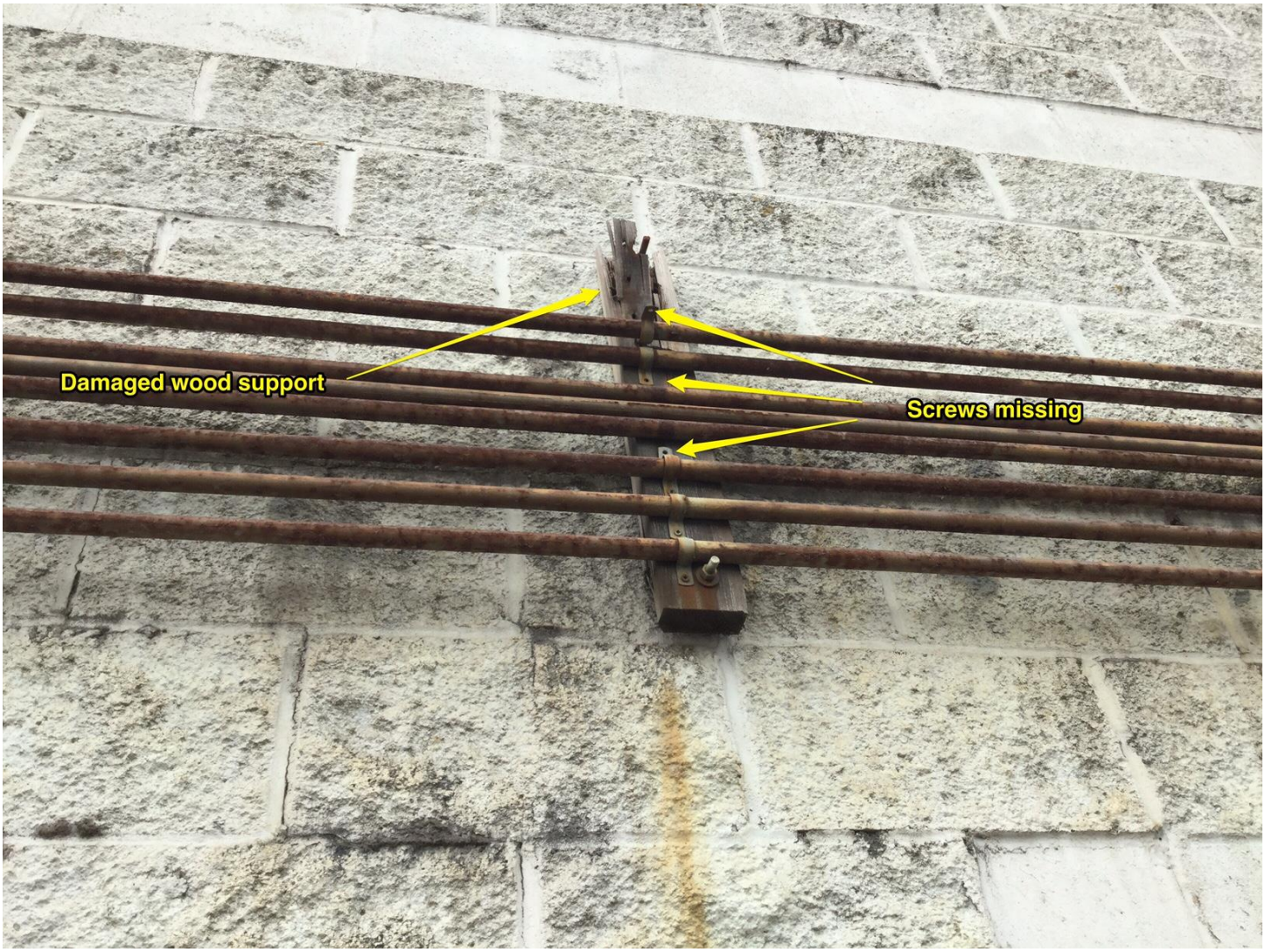
Incident Summary (5620634)

SUPPORTING INFORMATION	Incident Date			August 26, 2017
	Location			Surrey
	Regulated industry sector			Natural Gas
	Impact	Injury	Qty injuries	0
			Injury description	N/A
			Injury rating	None
		Damage	Damage description	Several ¾" black iron pipes fell from their horizontal mounting points, shearing a gas line causing an uncontrolled release of gas
			Damage rating	Moderate
	Incident rating			Moderate
	Incident overview			Black iron gas piping installed horizontally on the side of a commercial building broke free from its supports and fell to the ground, creating an uncontrolled release of gas into the atmosphere.
INVESTIGATION CONCLUSIONS	Site, system and components			Natural Gas is distributed by the utilities through a series of underground gas lines to a bank of gas meters mounted on the side of the commercial building wall. The gas then passes through the Fortis supplied regulator and meter set. Natural gas is then fed to appliances through a piping grid typically constructed of threaded black iron piping and fittings. The piping or tubing routed on the side of the building must be properly supported and secured to the wall using metallic clamps, identified as "Gas piping" with yellow banding, and protected from corrosion
	Failure scenario(s)			Wooden 2x4's were installed on the side of the commercial building and the black iron gas lines were mounted to these 2x4's using metallic clamps. These wooden 2x4's eventually rotted and deteriorated with age, allowing the screws to break free from the wood support and fall to the ground. The rotting wood along with the weight of the black iron pipe allowed the piping to break free and fall off the side of the building. The force of the piping falling from the wall at a height of 12 feet sheared the pipe at a threaded section connected to a black iron coupling.
	Facts and evidence			<u>Statement made by witness working nearby</u> • Working in garage adjacent to the Commercial property. • While working in garage, "could smell strong odor of natural gas" • When he stepped outside to investigate, he could hear loud hissing sound originating from the neighboring industrial building and observed the broken pipes. • Witness grabbed wrench and ran over to bank of meters installed on side of building and shut off the 2 affected gas meters, leaving the rest active • Witness contacted owner of building who asked him to call the fire dept. • Witness contacted Fortis and the Fire department who attended shortly after

Incident Summary (5620634)

		<u>Piping and Supports</u> • Wooden 2x4 studs bolted to concrete wall • 2 hole metallic pipe clamps secured piping to wooden stud • Wood shows signs of severe cracking and rotting • At time of investigation, numerous pipe clamps absent and several damaged and being support by only 1 screw • 2 of the 10 gas lines installed horizontally on side of building had broken free from their supports and fallen. • 1 of the 2 fallen gas lines had broken, causing a release of gas
	Causes and contributing factors	It's highly probable that the use of wood as a supporting material for the black iron piping is what led to the gas lines becoming unsecure and falling from the side of the building. Wood that is exposed to the elements for long periods of time will absorb moisture and begin to rot. Penetrations such as screw holes/ nail holes are especially susceptible to rot . The fasteners become loose and can no longer support the weight of the materials that are clamped to them.

Fallen gas lines along side of Commercial building


Damaged wood support
Screws missing


Threaded portion of gas pipe sheared off inside
black iron coupling