

Incident Summary #II-1090177-2020 (#19554) (FINAL)

SUPPORTING INFORMATION	Incident Date		October 28, 2020
	Location		Terrace
	Regulated industry sector		Gas - Natural gas system
		Qty injuries	1
	Injury	Injury description	Driver of Vehicle was taken to hospital by ambulance after sustaining burns in lungs and on body.
	t	Injury rating	Major
	Jamage	Damage description	Black iron natural gas riser located in open area was damaged at ground level causing an uncontrollable leak of 60PSI natural gas which caused an explosion engulfing vehicle in flames, glass and shrapnel was found 10m away from the explosion site. Vehicle was left to burn until natural gas distribution line was shut off by the utility.
	_	Damage rating	Major
	Incident rating		Major
	Incident overview		A black iron natural gas riser from the distribution line of a natural gas system at a modular park was hit by a vehicle causing a gas leak, explosion, and fire.
INVESTIGATION CONCLUSIONS	Site, system and components		A black iron natural gas riser connected to an underground piping system was left capped and secured to an iron post at a vacant modular lot without vehicle protection. Natural gas code requires protection posts are installed in front of natural gas risers which require protection from possible vehicle damage. These posts are either reinforced concrete 6" in diameter, 4" tubing filled with concrete, 8" pressure treated wood, either square or round, or a concrete filled 4" pipe, these posts should be installed not less than 12" from natural gas riser. The modular park has approximately 50 lots with a black iron underground distribution system to individual natural gas meters for each lot. The underground distribution line is a live piping system at 60PSI
	Failure scenario(s)		Riser is installed at an open area due to the vacant lot, riser can be accessed from multiple directions with a laneway on one side, vacant lot, lawn and driveway on other side. The riser was hit at approximately 5am, was dark at the time of incident, however a lamp standard was turned on and within 4 feet of the gas riser. (Image 4,5) The riser was secured to a 2" black iron post on the south-side of riser, as seen in typical gas meter install Image 1. The north-side of the riser which would normally be protected by a modular home was not protected due to the lot being empty. The south-side of riser was not protected from vehicle damage which is normally required by code.



Incident Summary #II-1090177-2020 (#19554) (FINAL)

Facts and evidence	The gas riser was left without identification or vehicle protection from any side in a vacant lot of the modular park.A driver hit the black iron natural gas riser from the north-side driving through a vacant lot at a modular park. This caused gas to escape from the underground system.A source of ignition from within the vehicle resulted in a flash explosion around the vehicle and riser. From witness statements on scene of incident
Causes and contributing factors	The natural gas riser was struck by a driver of a vehicle from the north-side where a Modular Home would normally be protecting the natural gas riser. The Natural gas riser was not identified, in a poorly lit vacant lot close to the modular park laneway. The riser had no protection from vehicle damage, riser was located close enough to laneway to require protection from a vehicle, should a vehicle veer off of the laneway from any direction.





Typical natural gas meter install at modular home park showing post used to support meter (red arrow) Gas Meter and Riser are 4 feet from laneway without any means to protect from possible vehicle damage.





Car engulfed in flames from Natural Gas Riser beneath car at red arrow.

At time of photo, occupant has been removed and is safe in hospital. It is best practice during a natural gas leak which has caught fire to turn off the gas at shutoff valve and let the residual gas burn to minimise any other fires or pockets of gas after shutdown of a piping system.





Car has been removed and dragged north for utility company to access and cap the underground natural gas line





Location of incident looking south. Car and gas riser located in red circle. Riser was approximately 4Ft from laneway.





Location of incident looking north. Car and riser located in red circle.

Neighbours Shed and Neighbours Modular located with blue arrows.

Space between shed is a vacant lot in which the Natural Gas Riser was left for future modular install