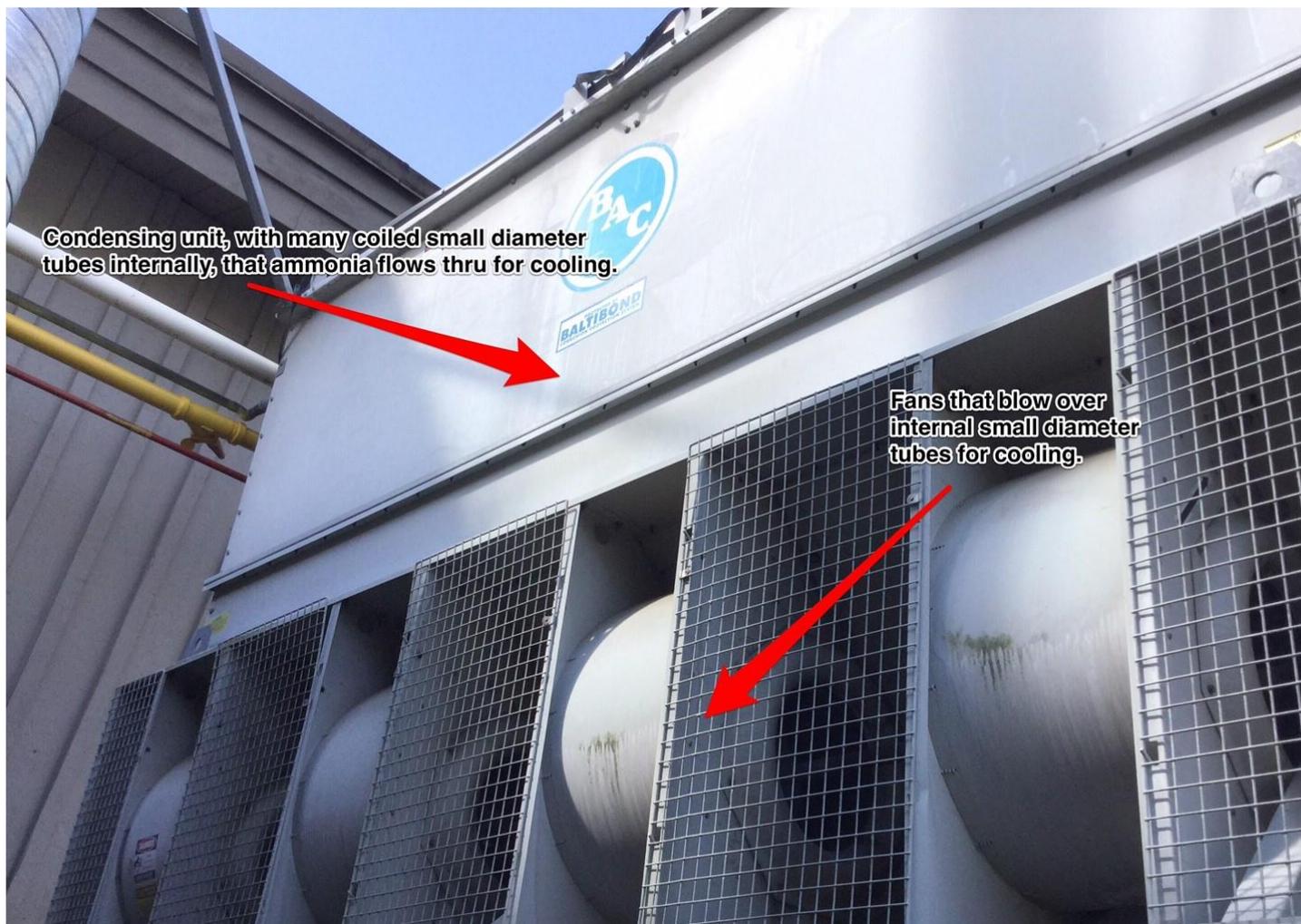
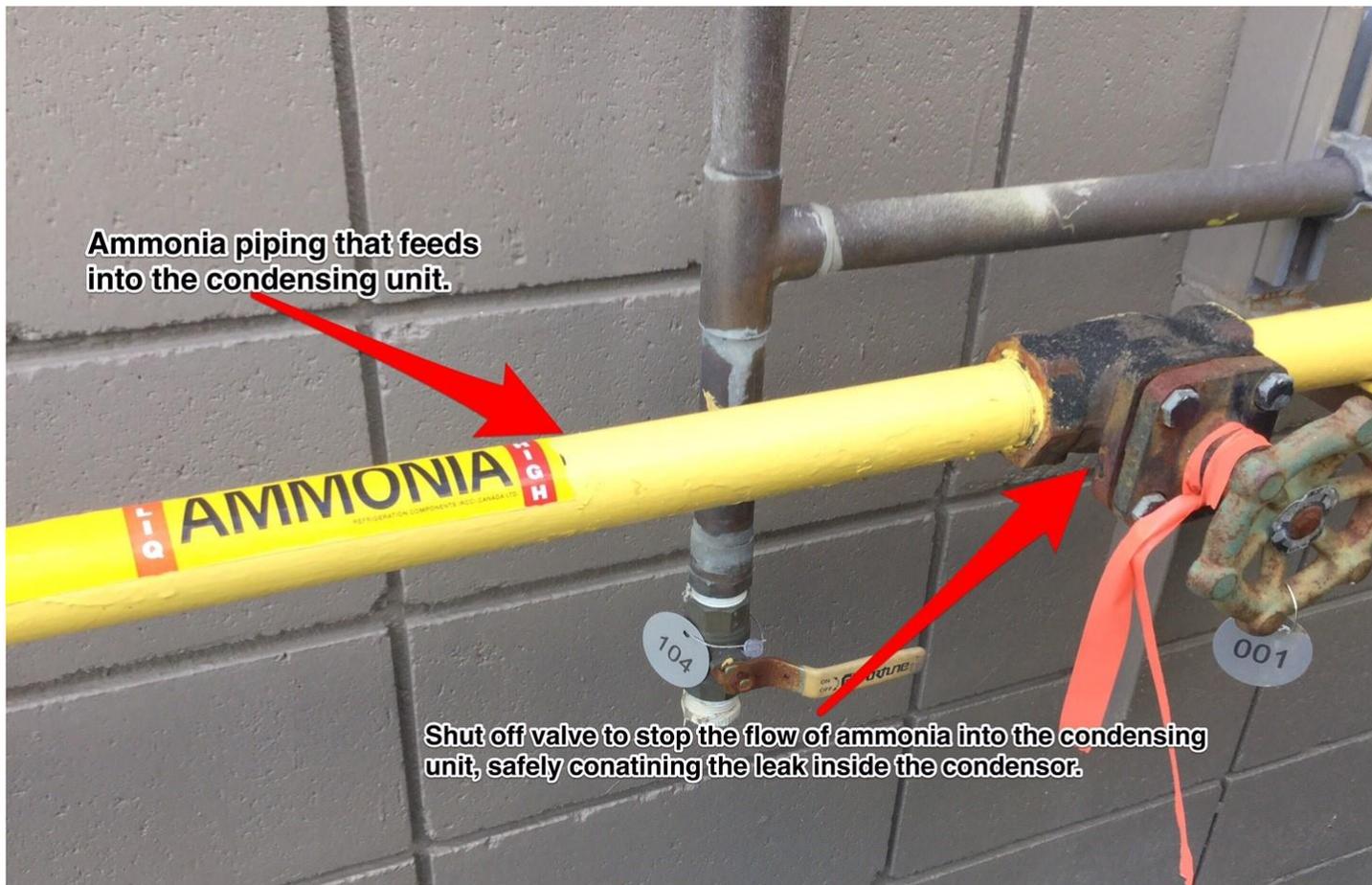


## Incident Summary (Posse File#5620260 )

SUPPORTING INFORMATION	Incident Date		April 20, 2017	
	Location		Abbotsford BC	
	Regulated industry sector		Boilers, PV & Refrigeration – Refrigeration system.	
	Impact	Injury	Qty injuries	None.
			Injury description	None
			Injury rating	None.
	Damage		Damage description	Small diameter tube crack inside the condensing unit of the ammonia refrigeration system.
			Damage rating	Minor.
	Incident rating		Minor.	
Incident overview		The Condenser, which changes the gas to a liquid, allowing it to lose some of its heat in the process, developed a crack in an internal tube. This leaked out some ammonia gas and was picked up by the ammonia detection system which caused a low level alarm to activate.		
INVESTIGATION CONCLUSIONS	Site, system and components		The refrigeration system circulates ammonia from compressors, which makes the gas hot and raises its pressure, enabling it to hold larger amounts of heat. The condenser which is installed outside of the building changes the gas to a liquid, allowing it to lose some of its heat in the process, while the expansion device turns the liquid back into a cold gas, releasing most of the heat it held while circulating thru other components on the system.	
	Failure scenario(s)		The refrigeration system that was shut down for the summer season, developed a crack in an internal tube in the 26 year old condensing unit.	
	Facts and evidence		The ammonia refrigeration system including the condensing unit is 26 years old. When the licensed contractor arrived on scene to contain the leak on the system, it was noted and informed that the leak was noticed to be coming from the area of the condensing unit internally where there are many small diameter tubes.	
	Causes and contributing factors		It is likely and plausible, that the age of the equipment on the system may have been the cause and contributing factor based on the experienced licenced contractors evaluation of the leak, and the area that the leak developed.	







Ammonia detection system control unit.