

Well cementing and reducing leakage

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ABSTRACT

Fugitive emissions account for a large fraction of Canada's industrial greenhouse gas (GHG) emissions. Here we consider leakage of hydrocarbons from wells, of which there are over 600,000 in Canada. We explain how and why wells are leaking, discuss the mechanics of well construction (primary cementing) and outline the main axes of research followed at UBC in the past 25 years. We then outline the fluid mechanics problems that arise when one attempts to repair a leaking well, and finally touch on 2-3 interesting processes concerned with eventual decommissioning (P&A). The objective is both to introduce the process to a wider audience and showcase a range of challenging fluid mechanics problem areas that are not overly studied.