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Agenda

- **Canada's Action on Methane**
- **Methane Emission Sources in Oil and Gas operations**
- **Methane Detection and Quantification – Part 1**
 - Methane Emissions Inventory
- **Methane Detection and Quantification – Part 2**

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Canada's Action on Methane

Date	Action
Sept 1998	Alberta's Clean Air Strategic Alliance (CASA) establishes flare reduction targets
Oct 2001	CASA establishes new flare reduction targets
Oct 2002	CASA establishes reduction targets form methane venting
June 2003	Alberta introduces GHG reporting regulations for facilities >100kT/yr
Sept 2003	Environment Canada introduces GHG reporting regulations
June 2007	CAPP publishes a Best Management Practice for Fugitive Methane Emissions
July 2007	Alberta introduces regulations to reduce GHG emissions
July 2008	British Columbia introduces a Carbon Tax on fuel combustion
Dec 2009	Alberta introduces requirements for Leak Detection and Repair (LDAR)
Jan 2010	AB and Federal GHG reporting thresholds lowered to 50kT/yr CO2E
2018	British Columbia, Alberta, Saskatchewan and the Federal government introduce regulations to reduce methane emissions by 45% from 2012 by 2025.

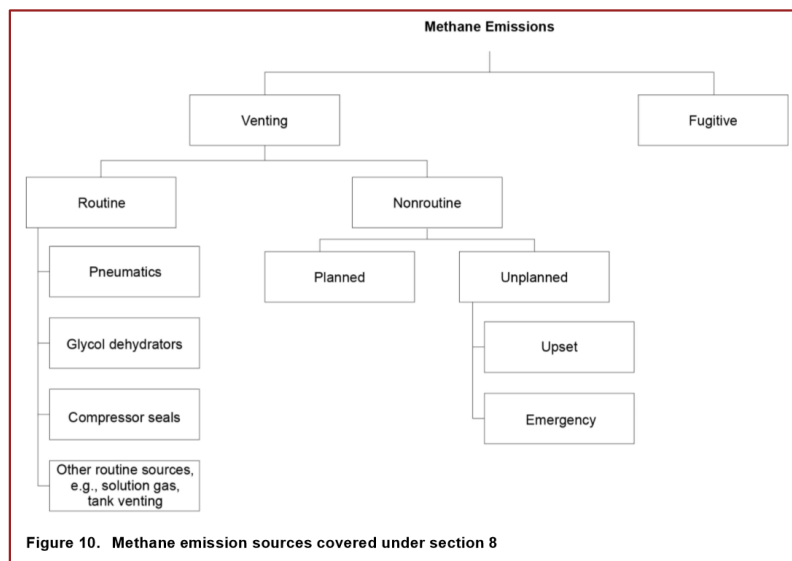
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Methane Emission Sources (as per Directive 60)



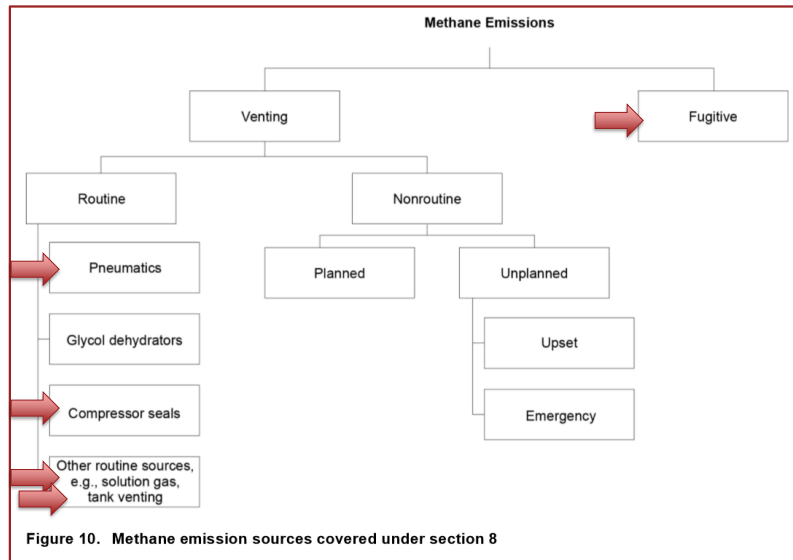
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Methane Emission Sources (as per Directive 60)



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Methane Detection and Quantification - Part 1



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Results of Field Surveys

- **3 large scale field studies in 2 provinces in the last 2 years**
- **General findings:**
 - Tanks and pneumatic devices are the sources of the largest release
 - Tanks and pneumatic devices combined are upwards of 90% of the total emission inventory
 - Non-tank and non-pneumatic fugitive emissions contribute are <10% of the total emission inventory
 - Majority of facilities do not have detectable fugitive emissions

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Methane Detection and Quantification – Part 2

- **Alberta Methane Field Challenge**
- <https://www.youtube.com/watch?v=QbITXgGk6ag>

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Methane Detection and Quantification – Part 2

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Methane Detection and Quantification – Part 2

LSD 12-31 09/12/2017 Location initially planned for controlled release testing.

1186 ± 355 lpm

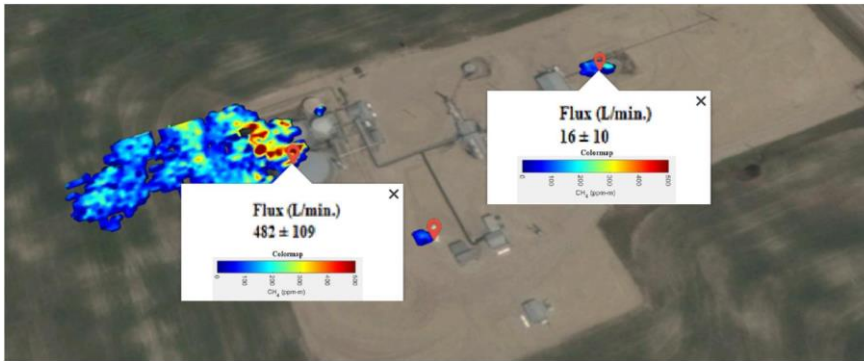
420 ± 55 lpm

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Methane Detection and Quantification – Part 2



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Methane Detection and Quantification - Part 1

