MAPP - A Tool for Detailed Tank Inventory and Driving Emission Reduction Offsets

March 31, 2020

PTAC Workshop - Reducing Methane Emissions from Tanks
MAPP Inventory – Field Data Collection App

- MAPP Inventory
  - Smart device field app synced to Cloud
  - Works Online/Offline
  - One stop data base of detailed vent source equipment inventory
    - Controllers, Pumps, Air Compressors, Engines, Gas Compressors, Tanks, Heaters, Dehy, Valves/Actuators
  - Over 100,000 devices in database
  - Tank module added in 2019
Initial Tank Learnings from MAPP

- Offsets Highly Effective at Driving Early Action
- Solution Gas Likely Next Methane Offset Opportunity
- Need Tank Inventory from Heavy Oil/CHOPS regions

<table>
<thead>
<tr>
<th>Tanks in MAPP Database</th>
<th>885</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>West of 5th</td>
</tr>
<tr>
<td>Large Tanks (400 bbl or &gt;)</td>
<td>40%</td>
</tr>
<tr>
<td>Production Tanks (emulsion, water, condensate,oil)</td>
<td>95%</td>
</tr>
<tr>
<td>Vent to Atmosphere</td>
<td>90%</td>
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<tr>
<td>Emission Control (VRU, Flare, VGC)</td>
<td>10%</td>
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</tbody>
</table>
Improving Tank Data Collection

- Identify high emitters
- Record Gas Release Measurements
  - 24 hr test not always practical
- Record by Type of Gas Releases Observed
  - Process Venting (volatile liguid flashing)
  - Tank Top Equipment Leaks
  - Unintended Gas Carry-Through
- Root-Cause Analysis
- Post-Mitigation (Project) Data Collection
FEMP-EA LDAR Effectiveness Study

Large scale randomized field study in 2018 of 172 well sites in West Central Alberta

Key insights

- Tanks only comprised 18% of all emitters, but contributed 56% of total emissions.
- Tank-related emissions contributed between 38 and 62% of total emissions in every LDAR survey.
- Oil sites are associated with higher tank-related emissions compared to gas sites.
- Average tank related emission rate 5 times larger than non-tank related.

Thank you!

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