

# ANOMALOUS LEAK EVENTS

# BACKGROUND

- IPCC 2019 Refinements and “Anomalous Leak Events”
  - “Anomalous leak events” can occur across oil systems and can have highly variable emissions.
  - It is good practice to quantify and report such emissions whenever possible.
  - No method is provided; instead events need to be evaluated on a case-by-case basis.
- Data are available for 2 large U.S. production segment blowout events
- EPA could use this data to include an estimate for anomalous leak events
- Additionally, smaller blowout and release events occur and the GHGI currently includes an estimate for events occurring in oil production

# CURRENT GHGI METHODOLOGY

- Onshore Production
  - Large anomalous leak events are not captured
    - One such event is captured in the storage segment (Aliso Canyon event)
  - Well blowout emission estimates are currently included for oil wells only and well release emission estimates are not included
    - Activity data is the number of blowouts per year
      - Activity data estimated using the count of wells drilled annually and a frequency of 1 well blowout per 300 wells drilled
    - Emission data is an estimated volume of 2.5 MMScf Methane released per blowout event, from an Industry review panel convened in the 1990s

# AVAILABLE DATA

- Well Blowout Emissions Quantification:
  - Several studies on large well-related events were reviewed including events in Belmont, OH and Victoria, TX
  - A combination of ground-level and satellite measurements were used to develop event-specific emissions estimates
  - These events had emissions quantities ranging from 4,830 –60,000 MT CH<sub>4</sub>; and durations of 20 days
- Well Release Emissions Quantification:
  - Did not identify any source of emissions data including quantification of well releases

# AVAILABLE DATA: SMALLER BLOWOUTS AND RELEASES

- **Well Blowout and Release Activity Data:**

- Several sources of data which could be used to estimate the frequency of well blowouts and well releases were identified for offshore and onshore wells including Texas Railroad Commission Event Reporting and New Mexico's Incident Database
- A summary of the estimated frequencies from these sources is shown below

Emission Source	Blowout Frequency		Release Frequency	
Onshore gas/oil well	1.56E-04	per well drilled	1.19E-03	per well drilled
New Mexico Incident Database				
Onshore gas/oil well	5.00E-04	per well drilled	N/A, Included in blowout	

# UPDATES UNDER CONSIDERATION

- Include reporting of large well blowout events (e.g., Belmont, OH; Victoria, TX) based on published emissions, to be consistent with IPCC guidance on “large anomalous leak events”
  - EPA has utilized this approach in the past (e.g., Aliso Canyon)
  - The approach used for exceptional well blowouts could be applied to other exceptional events if data are available
- Update activity data and emissions for smaller onshore oil and gas well blowouts and releases based on event frequency information from state data bases (e.g. Texas RRC), and apply current GHGI EF (2.5 MMscf/event) for oil well blowouts for all events

# REQUESTS FOR STAKEHOLDER FEEDBACK

- EPA seeks stakeholder feedback on the inclusion of exceptional events.
  - EPA also seeks information on other identified well blowout events, including those that may have occurred earlier in the 1990-2020 GHGI time series.
  - EPA seeks stakeholder feedback on appropriate data for incorporation, including on measurement methods, detection approaches, etc.
  - EPA seeks stakeholder feedback on approaches for estimating emissions from exceptional events where measurement data are unavailable.
- EPA seeks general stakeholder feedback on the inclusion of estimates for smaller blowouts at gas wells and well releases at oil and gas wells.