Alt-FEMP Executive Summary

Company	Program start	Program end	# of sites
Ember Resources Inc.	April 13, 2023	December 31, 2024	112

Once an alternative fugitive emissions management program is approved, AER staff draft this executive summary. This is a summary only, published to help interested stakeholders understand what has been approved. These summaries are found on our website, www.aer.ca > Protecting What Matters > Holding Industry Accountable > Industry Performance > Methane Performance > Alternative Fugitive Emission Management Program Approvals. For additional information on these approvals, contact methane.reduction@aer.ca.

Summary

Ember Resources Inc. (Ember) is a Western Canadian coalbed methane producer that owns and operates 153 facilities in Alberta that require fugitive management in accordance with *Directive 060*, located on 153 legal subdivisions (LSDs). As of 2021, Ember has implemented regular leak detection and repair (LDAR) programs in accordance with provincial regulations. Ember is also a participating producer in a continuous measurement alternative fugitive emissions management program (alt-FEMP) exploring which technologies will work best for Ember in the future. This alt-FEMP is to implement a pilot alt-FEMP across all 153 Ember facilities.

A representative control region encompassing 16 facilities was omitted from the alt-FEMP scope. In the control region, OGI surveys in accordance with *Directive 060* will occur, providing data that will be compared with the performance data from the selected alternative program.

The selected alternative program involves deploying an aerial-based gas mapping LiDAR (a-LiDAR) survey in Q2 2023, an OGI survey in Q3 2023, another OGI survey in Q2 2024, an a-LiDAR survey in Q3 2024, and a final OGI survey on a subset of 40 facilities in Q4 2024, throughout the pilot program. Fugitive emissions reductions will occur at a fraction of the sites ranked by emissions rate. The selected alternative program is estimated to achieve comparative emissions reductions to the *Directive 060* default approach at a decreased cost. This will also decrease safety risk by limiting the number of subcontractor hours in the field, which is a priority for Ember.

The two-year (January 2023 – December 2024) alt-FEMP methodology is as follows:

Step 1	Screen	Conduct site-level screening. The selected alternative program will deploy five screening campaigns throughout the program: 1) a-LiDAR, Q2 2023 2) OGI, Q3 2023 3) OGI, Q2 2024 4) a-LiDAR, Q3 2024

		5) OGI at 40 sites, Q4 2024 The screening technologies will capture both vented and fugitive emissions. Screening campaigns will occur more than three months apart, except the fifth campaign will be within two months of the fourth campaign; a-LiDAR will be deployed in snow-free months.
Step 2	Rank	Following each a-LiDAR screening campaign, emissions will be attributed to an LSD and the LSDs will be ranked highest to lowest by their total emissions. The follow-up threshold percentage determines the top number of LSDs to be visited for emissions localization and repair. The selected program has the following follow-up requirements after each designated screening event: • Screening campaign 1 (Q2, 2023): 40% follow-up • Screening campaign 4 (Q3, 2024): 40% follow-up 40% follow-up means the emissions localization will occur on the ground at the top 40% of screened LSDs ranked by total emission rate. So, after receiving a-LiDAR screening data the top 54 LSDs (137 * 0.4) will be followed up on using an OGI camera. All facilities sharing the same LSD will be surveyed. If an emission rate of 500 m^3/day or greater is detected and the corresponding LSD (which must be surveyed and repaired according to *Directive 060*) is identified as being in the 40% of LSDs with the highest emissions, its survey will count toward the follow-up total.
Step 3	Follow-Up	Follow-up emissions localization will occur on the ground at the LSDs outlined in Step 2. Here, fugitive emissions will be differentiated from vented emissions. Fugitive emissions will be tagged and recorded for repair, while vented emissions will be recorded for potential future reduction programs.
Step 4	Repair	At the follow-up sites, all fugitive repairs will be made according to *Directive 060* timelines once a fugitive leak has been localized.