Alt-FEMP Executive Summary

Company	Program start	Program end	# of sites
Kiwetinohk Energy Corporation	April 28, 2023	December 31, 2024	30

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

Kiwetinohk Energy Corporation (Kiwetinohk) is piloting an alternative fugitive emissions management program (alt-FEMP) across a selection of its asset base. The proposed alt-FEMP uses a metal oxide-continuous measurement system (MOCMS) that can detect emission leaks on timescales of hours to days. Leaks may go undetected for several months or up to a year using traditional "snapshot" measurement methods using optical gas imaging (OGI) cameras. Snapshot methods include traditional handheld surveys with OGI cameras and new mobile screening using aerial or satellite imaging. Research shows that emissions from oil and gas facilities are temporally highly variable and poorly characterized by snapshot measurements. Continuous measurement systems, therefore, have significant potential to accurately characterize emissions patterns at each facility and detect leaks immediately, reducing time-integrated fugitive emissions to near zero.

The alt-FEMP will cover a selection of Kiwetinohk's facilities and multiwell sites in Alberta, located in the Simonette, Placid, and Rimbey areas. The 52 facilities located across 30 LSDs are regulated under section 8 of *Directive 060*. The 36 multiwell pad sites are sites that require annual, audio, visual, and olfactory (AVO) inspections, and will benefit from on-site continuous monitoring. Continuous monitoring will be done at each site to measure for CH_4 at distances of 10 to 100 metres from target infrastructure to achieve similar detection limits as OGI cameras. For this program, close-range follow-up inspections will be scheduled on any leaks that exceed one gram per second. It is conservatively estimated that the time from leak onset to detection will be less than two weeks for large leaks; however, it is expected to be able to detect leaks within a day. In addition to immediate close-range response for large leaks, an interval LDAR program will be scheduled for follow-up inspections and a percentage of facilities, ranked by emissions volumes, are flagged for OGI follow-up. For this program, follow-up OGI inspections will be performed every four months at 30% of facilities ranked by emission volume, equating to 9 of 30 sites (LSDs).

In addition to facility monitoring, Kiwetinohk will deploy MOCMS sensors at 36 multiwell pad sites to do a flag and repair campaign to further reduce fugitive emissions. This will provide useful data for understanding potential emissions missed in AVO surveys. These sites will be added to the total site count so that 30% of sites ranked by emissions will be a mix of facilities and multiwell pads to a total of 20 of 66 sites receiving OGI follow-up every four months.

Kiwetinohk will consider additional mitigation efforts for any anomalous emissions from venting or incomplete combustion identified.