

Insight M 10 kg/hr Methane Alternative Test Method Request:

Executive Summary

1 Submission Information

Request Number	ALTTECH-24
Submission Date	06/16/2024
Company Name	Insight M, Inc.
Submission Point of Contact Name	Cathy Harwin
Product Name	LeakSurveyor™ - 10 kg/hr
Technology Type	Airborne mobile remote sensor
Target Applicability	Broadly applicable across sector
Target Emission Leak Rate Threshold	10 kg/hr
Request Nos. of Connected Requests	ALTTECH-25

2 Introduction and Technical Summary of Technology

Insight M, formerly Kairos Aerospace, submits this application to the United States Environmental Protection Agency (EPA) to seek approval of its aircraft-based LeakSurveyor technology as an Alternative Test Method for Methane Detection Technology that may be used to meet the requirements of 40 CFR § 60.5398b(b).

Insight M is a leading provider of methane performance management with direct and extensive experience applying our LeakSurveyor technology and measurement system commercially in basin-scale aerial methane survey campaigns to deliver actionable emissions data to oil and gas industry clients since 2017.

Insight M is seeking broadly applicable, nationwide approval for our facility-level leak detection technology and operational protocol.

3 Notes for Review Team

Insight M is applying for approval of our LeakSurveyor technology at both the 10 kg/hr and 15 kg/hr minimum detection thresholds. This application is for Insight M's broadly applicable 10 kg/hr methane detection technology. The separate, related application for Insight M's broadly applicable 15 kg/hr methane detection technology can be found under Request #ALTTECH-24.

4 Summary of Documents Submitted

4.1 Description of Technology

Document Name with Extension	Document Description	Submitted as CBI
IM10-01-01_Description_of_Technology.pdf	Insight M LeakSurveyor Description of Technology: Public-facing description of how Insight M's technology works to deliver actionable emissions data to oil and gas industry clients.	
IM10-02-01_Description_of_Measurement_Technology_and_Data_Handling_CBI.xlsx	Description of Measurement Technology and Data Handling: Detailed end-to-end description of Insight M's analytical pipeline, from pre-flight requirements to generating end-user reports.	✓
IM10-03-01_Visual_Workflow_CBI.pdf	Visual Workflow: Visual representation summarizing the Description of Measurement Technology and Data Handling.	✓
IM10-04-01_InsightM_Quantification_White_Paper.pdf	Insight M Methane Emissions Quantification Methodology: White paper that explains how Insight M quantifies methane emission rates and the accuracy of quantification during controlled methane releases.	

4.2 Formal Alternative Test Method

Document Name with Extension	Document Description	Submitted as CBI
IM10-05-01_LeakSurveyor_Formal_Alternative_Test_Method.pdf	Insight M LeakSurveyor - 10 kg/hr Formal Alternative Test Method: Detailed description of Insight M's alternative testing procedure, formatted as described in EMC Guideline Document 45.	

4.3 Supporting Documentation

Document Name with Extension	Document Description	Submitted as CBI
IM-Supp06_Article_El_Abbadi_2024.pdf	El Abbadi et al. (2024): Independent, peer-reviewed research article detailing a single-blind test of LeakSurveyor technology.	
IM-Supp07_Article_Conrad_2023.pdf	Conrad et al. (2023): Independent, peer-reviewed research article evaluating the impact of sensor height and wind on sensitivity.	
IM-Supp08_US_Patent_LeakSurveyor.pdf	LeakSurveyor United States Patent	
IM-Supp09_InsightM_Operational_History.pdf	Insight M Operational History: High-level summary of Insight M's history and operational scope.	
IM-Supp10_Controlled_Release_Metadata_Summary_CBI.xlsx	Controlled Release Metadata Summary: Metadata summary of baseline controlled release datasets.	✓
IM-Supp11_Sample_Customer_Report_CBI.pdf	Sample Customer Report: Anonymized example of a customer survey report demonstrating the data the end user of Insight M's technology will receive.	✓
IM-Supp12_Customer_Kickoff_Deck_CBI.pdf	Customer Kickoff Deck: Anonymized example of a customer kickoff deck demonstrating the information provided to end users of Insight M's technology at the beginning of a project.	✓
IM-Supp13_Virtual_Analysis_Training_Syllabus_CBI.pdf	Virtual Analysis Training Syllabus: Internal procedure detailing the training process each Insight M analyst must complete.	✓
IM-Supp14_Facility_Level_Analysis_SOP_CBI.pdf	Facility-Level Analysis Standard Operating Procedure: Internal procedure detailing how analysts review and validate data quality for data collected at 10 kg/hr and 15 kg/hr target	✓

Document Name with Extension	Document Description	Submitted as CBI
	sensitivities, validate emission detections, and associate to a facility-level emission source.	
IM-Supp15_Supplemental_Articles_CBI.pdf	Supplemental Articles: Supplemental peer-reviewed research articles cited in CBI submissions.	✓

For Further Information on this Application, Contact:

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