

Monitoring Technology Compatibility Assessment GHGSAT- DATA.AIR March 2024



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Purpose

The MiQ Foundation, as the Standard holder, has developed this monitoring technology compatibility assessment to streamline market research conducted by Operators and other stakeholders to assess the compatibility of methane monitoring technologies against the requirements in the Monitoring Technology Deployment pillar of the MiQ Standard.

This document does not endorse or reflect the personal views of the MiQ Foundation and is not intended to be exhaustive. The sole aim of this document is to provide stakeholders with an impartial summary mapping the characteristics of methane monitoring technologies and methods to MiQ requirements. This document does not guarantee that a monitoring technology or method will be compliant for a specific deployment of that technology or method. MiQ Auditors may reference the information in this document while conducting MiQ Audits, but still must assess each deployment individually. MiQ encourages Operators to carry out additional independent assessments of technologies and methods for their specific deployments.

MiQ has conducted the following assessment based on best available data, vendor-provided documentation, and published studies at the time of preparation. MiQ reserves the right to make updates to the documentation on a periodic basis to conform with new MiQ Standard updates and updated vendor documentation.

MiQ is not liable for any information provided or technology capabilities guaranteed by the technology provider.



CRITERIA	STANDARD REFERENCE	DESCRIPTION		
GENERAL INFORMATION				
Name		GHGSAT – DATA.AIR Gen 1		
MiQ Application	Section 3.2.1 Section 4.1 – Table 3	Facility Scale Inspection (Onshore and Midstream Segments)		
Deployment Method	Section 4.1 – Table 3 Detection Technology Specification (Bullet 2)	Fixed Wing Aircraft- DATA.AIR Gen 1		
Sensor	Section 4.1 – Table 3 Detection Technology Specification (Bullet 1)	The patented Wide-Angle Fabry Perot (WAF-P) imaging spectrometer is adapted to the GHGSAT Aircraft to detect and measure methane emissions.		
PERFORMANCE SPECIFICATIONS				
Emission Source Coverage	Section 3.2.1- Item 1	DATA.AIR Gen 1 measures methane emissions from all sources, including elevated sources and underground sources (e.g. buried pipelines) once methane reaches the atmosphere.		
Measurement Frequency	Section 3.2.1- Item 1	Periodic – GHGSAT DATA.AIR Gen 1 scans target areas at the frequency specified by the Operator.		
Attribution Level	Section 3.2.1- Item 4	Equipment Group Level.		
Published Test Protocol	Section 4.1 – Table 3 Detection Technology Specification (Bullet 4)	2022 Test Results: https://eartharxiv.org/repository/view/5569/		
MDL @ 90% PoD (Min MiQ MDL requirement is 25kg/hr)	Section 3.2.1- Item 3	13.6 kg/hr. See Equivalency Determination below for additional detail.		
PoD Curve	Section 3.2.1- Item 3	$I_{ij} = \frac{1}{10^{-10^{-10^{-10^{-10^{-10^{-10^{-10^{$		
TECHNOLOGY LIMITATIONS				
Operational Limitations	Section 4.1 – Table 3 Detection Technology Specification (Bullet 3)	Parameters such as flight speed and height above ground level, have an impact on detection sensitivity.		
Environmental Limitations	Section 4.1 – Table 3 Detection Technology Specification (Bullet 3)	Presence of high wind, water bodies and wet terrain can influence detection sensitivity in Onshore measurements. GHGSAT limits deployment during cloudy days. DATA.AIR Gen 1 can be flown over snow-covered terrain.		
	EQUIVA	LENCY DETERMINATION		
requirementto complyApplicabilitySection 3.2.3MiQ Stand		DATA.AIR'S MDL at 90% PoD and spatial resolution meets the requirements for Facility Scale Inspections and can be utilized to comply with the pre-defined MTD strategies identified in the MiQ Standard.		
		A Producer/Operator utilizing DATA.AIR for MiQ Certification may be able to implement deployment characteristics that		



		differs from the pre-defined strategies by completing an	
		equivalency determination.	
		Please refer to the <u>MiQ Equivalency Table</u> for additional	
		information or contact MiQ.	
	RECONCIL	IATION CONDISERATIONS	
		GHGSAT-DATA.AIR Gen 1 can attribute individual emission plumes to the equipment-level, allowing operators to attribute emissions to a specific source. A Producer/Operator utilizing this technology must follow up with a ground inspection to attribute emissions accurately to an equipment or component level.	
Reconciliation	MI Section 3.3 - Item 4	This technology quantifies emission rate using a process that takes into consideration the environmental conditions and methane plume vertical and lateral profiles.	
		Due to the nature of periodic screening technologies, Producers/Operators will need to conduct a Causal Examination using operational and maintenance data to understand the origin, cause, and duration of a detected event.	
	ADDI	TIONAL DOCUMENTS	
GHGSAT News and Resources		<u>https://www.ghgsat.com/en/newsroom/</u> https://amt.copernicus.org/articles/11/5673/2018/	

Document Status

Table: Version History

Version	Date	Summary of Change
1.0	2024-03	First Publication

