



Civil & Environmental Consultants, Inc.

Unmanned Aerial Systems Methane Leak Detection: Optical Gas Imaging

CEC utilizes unmanned aerial systems (UAS) to conduct site inspections with ground-based and UAS-equipped optical gas imaging (OGI) equipment to find fugitive emissions to meet the U.S. EPA's new source performance standards (NSPS) OOOOa requirements.

CEC'S OPERATION OF UAS

Always at the forefront of cutting-edge technology, CEC obtained a Federal Aviation Administration (FAA) Section 333 Exemption in 2015 and has been implementing UAS into many of its client service offerings ever since. Now operating under the FAA's Part 107 Remote Pilot Certifications, CEC is permitted to operate robotic UAS within the U.S. national airspace system for the purpose of conducting aerial data acquisitions.

The use of UAS enables CEC to conduct data acquisition for project sites in a safe manner. The use of UAS also creates significant economic efficiencies, such as reductions in the number of field personnel required and the time required for both data acquisition and review.

METHANE LEAK DETECTION: OGI

The U.S. EPA recently released significant rulemaking for the oil and gas sector under proposed NSPS Subpart OOOOa, as well as amendments and updates to NSPS Subpart OOOO. The new rule and amendments introduce new compliance requirements and alternatives for leak detection and repair (LDAR) at natural gas processing facilities and other natural gas sites, such as well sites and compressor stations.

Utilizing innovative UAS and ground-based OGI thermal imaging technology, CEC detects fugitive emissions of greenhouse gases (methane, etc.) and other smog-forming volatile organic compounds. Through the marriage of CEC's OGI thermal imaging technology and UAS program, CEC provides quick and safe detection and visualization of fugitive emissions leaks, allowing facility owners and operators to detect and repair leaks quickly, to prevent major damage, and to comply with local and federal regulations.

In compliance with U.S. EPA reporting requirements, CEC's inspection personnel are certified OGI Thermography Technicians.

The language in 60.5397a was written with drone-mounted OGI in mind...Provided the requirements of 60.5397a are met, this is a valid method for fugitive monitoring.
—U.S. EPA, OAQPS, Sectors Policies and Programs Division

