Surveyor Use Cases

PICARRO

Routine regulatory compliance leak survey

The Picarro Surveyor system is most commonly used for Department of Transportation compliance leak survey of entire maps and areas due for three or five-year survey. Multiple drives are conducted on selected maps and the resulting data is combined in Picarro's report generation engine which produces maps of leak indications requiring follow up with handheld equipment.

Locating hard-to-find leaks

The Picarro Surveyor system is used to locate leaks that have not been located by traditional survey equipment. Such leaks can have extended migration patterns. By surveying an entire neighborhood with Picarro Surveyor, a holistic view of all sources of methane in the area is quickly provided and enables survey technicians to hone in on the exact location of the leak.

Investigation of odor complaints

The Picarro Surveyor system can be used as follow-up to an odor call when the initial investigation using traditional equipment was unable to identify the source of gas. It is quickly able to determine whether or not there is a gas leak in the area of the reported odor, and if so, is able to quickly pinpoint the leak. If a source of methane is found but it cannot be tied to an actual leak, the source discrimination capabilities can be employed to determine if the methane is from natural gas or if it is non-pipeline methane such as sewer or landfill gas.

Rapid, emergency survey, post-disaster evaluation (earthquakes, tornadoes, floods)

Owing to the ability of the Picarro Surveyor system to both survey a large area quickly and also quantify the relative amplitudes of leak indications, the system has been used on multiple occasions by utilities for emergency leak survey response in communities after disasters including earthquakes, tornadoes, over-pressurization events and loss of odorant events. Utilities have also used the system in similar situations after wildfires, hurricanes and floods.

Frost survey patrols (high-frequency survey)

Unlike traditional survey equipment, Picarro Surveyor is effective at surveying in the rain and snow and its high sensitivity allows it to measure leaks through both snow and ice cover. These attributes paired with its high-speed survey capability make it an ideal tool for high-speed, wintertime survey of high-risk pipe. Since cast iron main breaks due to frost heave are a significant concern, particularly in the eastern United States, it is ideal to use Picarro Surveyor to quickly survey for new, large leaks due to main breaks as well as monitor existing leaks for signs that they may be growing in size, potentially leading to catastrophic failure.

Rapid survey of areas prior to public events (parades, official visits) and high-consequence areas

Picarro Surveyor is ideally suited to do targeted, rapid surveys of specific areas requiring survey before public gatherings including parades, official visits, concerts and sporting events. As an example, PG&E used Picarro Surveyor to perform a special leak survey in Santa Clara, CA in the days leading up to Super Bowl 50.

Real-time source attribution (on-site chemical analysis: is source natural gas or not?)

When an identified source of methane cannot be directly linked to a utility asset, the chemical analysis capability of the Picarro Surveyor system can be used on-site to quickly measure a sample of the methane plume to determine if it is from a natural gas leak or from another source of methane such as a sewer or landfill.

Post-construction quality control – rapid survey of new or modern infrastructure

Multiple utilities have used Picarro Surveyor to quickly evaluate construction practices, both to assess the quality of newly installed infrastructure as well as to determine if third-party construction may have caused damage to existing infrastructure. Since the system has much higher sensitivity than traditional equipment, it is an ideal tool for quality control applications.

Due-diligence for asset acquisition

Picarro Surveyor can quickly survey a large area to provide an overall sense of the integrity of assets and rough estimates of leak indications per mile of pipeline. This type of large-area asset assessment has been used to gain an understanding of the quality of a distribution system that is being considered for acquisition by a larger gas utility.

Support distribution integrity management program (DIMP) initiatives and analysis (high risk pipe, business districts, annual survey, risk-based assessment surveys, prioritization of main replacement)

There are a number of examples of how utilities have used Picarro Surveyor for risk-based survey including annual DIMP surveys of small areas of high-risk pipe and business districts. Another example is using the system to assess larger areas, combining the Picarro survey data with other risk information to help prioritize construction from a risk-reduction perspective.

Identification of lost and unaccounted for gas (LUFG) sources

Since Picarro Surveyor can quantify leak indications in terms of the methane concentration of detected plumes, it can be used for rapidly triaging an area and identifying potential locations in the system (valves, city gates, regulator stations) for potential large sources of lost and unaccounted for gas.

Rapid assessment surveying before construction work / street paving / building demolitio

Picarro Surveyor has been used to survey both before and after building demolition near gas assets. The system is ideal for this use case since surveys can be conducted rapidly and Picarro's digital geo-spatial maps of leak indication locations (such as from existing Grade-3 leaks) can be easily compared for the pre- and post-demolition surveys which can easily identify new leaks potentially caused by the demolition. Similarly, rapid survey can be conducted before roadwork and other construction.

Auditing walking survey

Since Picarro Surveyor has been shown in 32 field trials with 17 utilities to be capable of detecting on average 92% of gradeable leaks in an area (whereas traditional survey detects 33% of the same population of leaks in the same area) it has been used to audit contract leak survey at a number of utilities.