Methane Gas Monitoring
Throughout Brownfield Developments

MSA
The Safety Company

Brownfield is a term applied to a property where its expansion, redevelopment, or reuse may be complicated by the presence or potential presence of a hazardous substance.

Of the estimated 450,000 brownfield sites in the U.S., approximately one-half are thought to be impacted by petroleum, much of it from leaking underground storage tanks (USTs) at old gas stations. These sites blight the surrounding neighborhoods and threaten human health and the environment. Petroleum can contaminate groundwater, the source of drinking water for nearly half of all Americans.

The EPA implements programs and funding for promoting the cleanup of federally-regulated leaking underground storage tank sites. Once a site is cleaned up, it can be reused and provide new businesses, jobs, and tax revenue or other amenities for the community, such as parks and recreation, increased property values, and improved walkability.

To ensure the site remains safe for residents, the Structural Gas Monitoring Regulation Federal Regulations (40 CFR Part 258.23) Explosive Gas Control and State Regulations (27 CCR Article 6) was put into place:

- *27 CCR 20919.5 (a) 1 Explosive Gas Control "…owners…must ensure that: (1) The concentration of methane gas generated by a (MSWLF) facility does not exceed 25% of the LEL for methane in facility structures…"*
- *20921 (a) (1) requires that "…The concentration of methane gas must not exceed 1.25% by volume in air within on-site structures…"*
- *20931(a) "…monitoring network design shall include provisions for monitoring on-site structures, including but not limited to buildings, subsurface vaults, utilities or other areas where potential gas buildup would be of concern…"*

Gas Detection requirements typically related to monitoring for methane under a building or remediation flow systems is a similar application to that of a radon system in your home. The economical, efficient MultiGard® Gas Sampling System uses auto-standardization and flexible sample point order to analyze gas from up to 32 locations. Maintenance and calibration are made easy because all the work is performed at a single location for centralized monitoring while also ensuring personnel do not have to enter the monitored area.

MultiGard Gas Sampling System

Key Features of the MSA MultiGard Sampling System

- Centralized Air Sample System
- Up to 750' sample line lengths per point
- Greater distances w/external pump
- PLC Control
- Outputs: Analog, Relay, Ethernet, Modbus, and BACnet
- Programmable calibration
- Up to 4 gases per unit
- 128 point capacity in a single enclosure

Gas Sensor Placement

- Any accessible confined space near a landfill where a 5–15% LEL-UEL condition would most likely occur
- Structures on or within 1000 feet of the landfill (homes, buildings, warehouses)
- Basements, subfloors and raised foundations
- Utility systems: manholes, vaults, boxes and subsurface trenches, storm drains, water and electrical distribution in the vicinity or through the disposal area
- Utility closets, mechanical rooms

Underground Tanks

Excavating an area for sample line to monitor potential underground residual hazardous gases

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