# SAFETRAN Indoor Air Quality (IAQ) Assessment

*Indoor Environmental Quality (IEQ) Assessment*

SAFETRAN Indoor Air Quality (IAQ) assessments are aimed at reducing risks to public health from pollutants in indoor air. Pollutants commonly found in industry, schools, offices, and other large buildings include radon, environmental asthma triggers, mold and other biological contaminants, secondhand smoke, particulate matter, and chemicals.

Historically, indoor air quality (IAQ) problems are not limited to offices. According to EPA, many industrial buildings and manufacturing plants have significant air pollution sources. Some of these buildings may be inadequately ventilated. For example, mechanical ventilation systems may not be designed or operated to provide adequate amounts of outdoor air aka "Makeup-Air." [1]

Photo by SAFETRAN

As part of SAFETRAN's COVID-19 response, our IAQ Assessment service has been crucial in providing recommendations regarding existing mechanical systems, filtration levels, and ventilation sources throughout our client sites and process buildings. Since staff and workers generally have less control over the indoor worksite environment than they do in their own homes. As a result, there has been an increase in the incidence of reported industrial health problems. Additionally, we understand that these are difficult times and full building assessments can be costly, therefore we have developed a service that will provide a building owner the recommendations and data they need to get started with improvements without increased financial stress.

Since 1999, SAFETRAN's Certified Safety Professionals (CSP-CHMM-CIT) professionals have performed hundreds of Indoor Air Quality (IAQ), Indoor Environmental Quality (IEQ) Sick Building Syndrome (SBS) and Dust Hazard Assessments (DHA) for manufacturing, industrial, and private firms.

Our Indoor Air Quality assessment surveys provide our clients with comprehensive air quality and environmental evaluation of individual sections and structures customized to the needs and concerns present at such sites. Our Certified Safety Professionals are particularly experienced in the effective risk communication of highly technical data and findings gathered during our assessments while maintaining a professional sensitivity to the concerns and health effects experienced by building occupants and staff. Our investigations routinely include the performance of detailed inspections of all building envelopes, and/or industrial systems. Our scope includes the development and performance of sampling and analysis of chemical, physical, and/or biological contaminants, as necessary. SAFETRAN's Certified Safety Professionals also provide expert legal related services regarding Indoor Air Quality and related environmental fields and routinely publish technical articles, provide technical training, and serve as forensic expert witnesses in the related technical scope.

[1] Per ANSI/ASHRAE Standard 62.1-62.2, and local building codes, ventilation of pharmaceutical manufacturing and food production facilities are unique industrial environments having variable processes happening simultaneously (within). These and other factors dictate the type and amount of mechanical ventilation required for adequate make-up air, air changes per hour (ACH), meeting acceptable Indoor Air Quality standards of care.

## Professional Staff

Mr. Daniel John O'Connell, CSP, CHMM, CHCM, CIT, CHST, REA is the Principal Consulting Safety Engineer with SAFETRAN, and has over 30 years of professional experience with Indoor Air Quality (IAQ-IEQ) evaluations and assessments including Dust Hazard Analysis (DHA) studies for clients in Northern California.

## SAFETRAN IAQ Methodology

In order to develop a concise Indoor Air Quality (IAQ-IEQ) evaluation and assessment, SAFETRAN requests the following information upon initiation of the IAQ Assessment:

1. General building information, including square footage, types of operations, hours of production, occupancy data.
2. Building plans and specifications, especially as-built HVAC drawings and mechanical equipment information but also any Testing, Adjusting, and Balancing (TAB) reports.
3. If the building has a Building Automation System (BAS), any information on the sequence of operation for equipment controlled.

In the development of a site specific IAQ, we consider and review the following aspects:

Factors Affecting Indoor Air Quality

Historical IAQ Record

Suspect Identify sources of Indoor Air Contaminants

An evaluation check of the current (area specific) HVAC System Design and Operation

Identify Pollutant Pathways and Driving Forces

Sample Building Occupants (complaints)

## SAFETRAN lAQ Scope (site and production areas, specific profile)

Collect Historic Data, building plans, previous IAQ-IEQ studies (site and area specific data)

Collect Additional Data, misc. studies, (Dampness & Mold Evaluation, DHA, Noise, etc.)

Review the prominent Historical Data [IAQ trending], occupant complaints

## SAFETRAN IAQ Walkthrough Inspection (Initial)

Conduct an IAQ Investigation (post inspection)

Characterize and Diagnose current IAQ Problems (site-specific)

Collecting Information from Occupant Complaints

Using the Historic / Occupant Data

Collecting Information about the HVAC System

Using the HVAC System Data

Collect Data on Pollutant Pathways, Primary Causation

Using Pollutant Pathway Data

Collecting Information on Pollutant Sources

Using Pollutant Source Data

Sampling Air for Contaminants and Indicators

Complaints Due to Conditions Other Than Poor Air Quality

Forming and Testing Hypotheses

Provide Effective Recommendations to Client


## Remediation and Mitigating IAQ Problems

The SAFETRAN Indoor Air Quality Assessment is a fact based data-driven analysis of how effectively a building's indoor air quality adheres to the latest industry recommendations for operating HVAC systems with a focus on the four key contributors to air quality:

- Dilute – making sure plenty of fresh outdoor air dilutes the buildup of indoor contaminants through proper ventilation
- Exhaust – getting exhaust air out is equally important, especially air from kitchens, restrooms and combustion systems
- Contain – keeping indoor humidity levels within the ASHRAE-recommended range maximizes occupant comfort and reduces the risk of microbial growth
- Clean – reducing particles, odors, or micro-organisms, such as mold, bacteria and viruses

Where possible we will conduct the assessment remotely through your building automation system (BAS). All on-site assessments of the physical environment will be performed following all currently recommended safety guidelines. When completed, your Account Manager will review the assessment results and share a detailed IAQ assessment report that includes strategic recommendations to help meet industry requirements.

Upon completion of the IAQ Study, SAFETRAN will provide Clients with Recommendations for Control of Indoor Air Problems.

Please feel free to contact us (510) 894-0229 or online at https://www.safetransafety.com

to discuss your project specific compliance needs in the field of environmental health and safety and Indoor Air Quality Management.