HSE 2020

BTS
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Air Sampling Detection – Design and Calculation Training

Duration: 5 Days

Introduction:

Industry will be facing increasingly stringent requirements to monitor air emissions to meet current regulations and the increasing pressure coming from enhanced public awareness. What will be the new requirements and what should we be doing now is the focus of the 5-day workshop which brings together industry, environmental consultants, and the regulators to envision the upcoming monitoring requirements, the available technologies and their best use with the objective of increasing industry's preparedness to face the impending changes.

By taking part in this workshop, you will enhance your understanding of the potential monitoring requirements to maintain facility compliance. A number of sessions will include specific case studies drawn from actual instructor experience. A number of pieces of monitoring equipment will also be available for demo/discussion.

Who Should Attend?

- Plant environmental managers and plant engineers in process industries, particularly in oil and gas, mining as well and in power plants
- individuals working in maintenance departments, engineering and environmental consultants and their employees
- environment and health and safety managers in industries and federal, provincial and local government regulatory monitoring
- approval personnel engaged in transportation, environmental affairs

Course Objectives:

By the end of this course delegates will be able to:

- To increase industry's awareness of the upcoming changes in the requirements for air monitoring both as part of their facility permit and for the Environmental Assessment process.
- To familiarize industry with the requirements for a cost effective monitoring program.
- To review current changes to air quality legislation/standards relating to air monitoring.
- To familiarize participants with the latest available methods and technologies for emissions and ambient level pollutant monitoring.
- To determine the most effective means of meeting monitoring, data acquisition and reporting objectives.

Course Outline:

- Regulatory drivers for air monitoring

Issues in Planning an Air Monitoring Program preparing the plan

- Baseline
- Contaminants
- Duration
- Locations
- Approval

Use of Existing Data – Setting the Context Weather and climate data

- Air quality background data
- The Federal NAPS program
- Provincial air monitoring locations
- Accessing available information
- Visualization

Case Study – a Mining EA

Baseline Monitoring Requirements for monitoring

- Typical scenarios – mining, industrial, oil & gas
- Challenges – discrete vs continuous monitoring
- Passive sampling
- QA/QC
- Correlation with existing data
- The baseline monitoring report

Air Monitoring Equipment

- Reference and equivalency methods
- Alternate methods-Qualitative vs Quantitative
- Reasons for selection

Air Monitoring Equipment II- Particulate, Metals and Criteria Gases

- Discrete monitors
- Continuous monitors
- Passive samplers
- Sampling inlets
- Instrument siting
- Meteorological monitoring stations
- Equipment maintenance

Monitoring – Construction and Remediation Projects

- Urban vs rural construction/remediation
- What contaminants should we be monitoring?
- Action levels
- Maintenance and reporting issues
- Site response
- Working with the community
- Case studies

Volatile Organics and Other Hazardous Air Pollutants Refinery or chemical production monitoring

- Continuous vs leak sources
- Monitoring as related to leak detection
- Methods and strategies

Monitoring in Remote or Difficult Conditions

- Power availability issues
- Renewable energy options
- Remote monitoring strategies
- Equipment and shelter design and maintenance
- Cold weather monitoring
- Case study

Air Monitoring Equipment III – Volatile Organics

- FID and PID EPA Method 21
- Canister sampling
- Advanced methods

- FTIR
- FLIR
- Laser systems

Airshed and Air Zone Monitoring

- Monitoring programs to date
- Provincial airshed monitoring programs
- Monitoring plan development strategy
- How does this differ from discussion so far?
- Economics of air monitoring
- The Federal AQMS program and harmonization
- New directions – the oil sands

Web-Based Air Quality Information Management

- Databases
- Information portals
- Data visualization and reports
- Access and security
- Case study

Modeling and Monitoring

- What does the model give you?
- Comparison to monitoring
- Common myths and pitfalls
- Combined air modeling and monitoring
- Validation programs

Monitoring and Forecasts

- Predictions using models and model forecasts
- Incorporation of monitoring data
- Relation to operations data
- Planning for change
- Working with the community
- Seminar Review and Wrap-Up Session