MPA RCS WORKING GROUP

Real time monitoring and Strategy Guide

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IMA OSH Seminar - Sassuolo - 13 November 2024

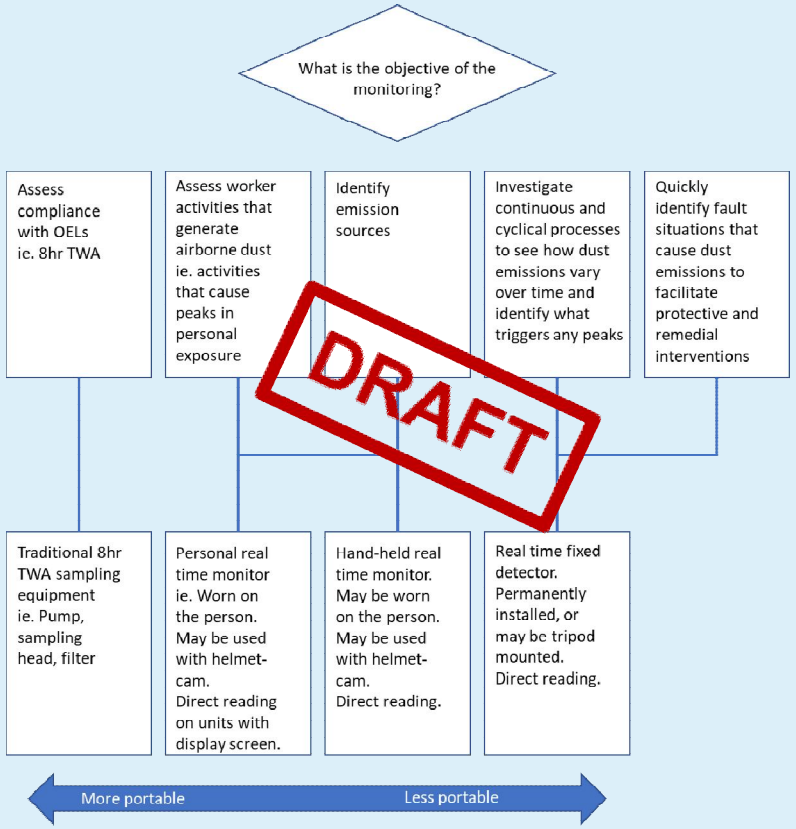
MPA RCS WG – Real time monitoring strategy guide

Strategy Guide

- Little information currently exists that would help to guide equipment selection and use
- “Strategy for use of real time monitoring equipment in Workplace Atmospheres”
- Contents:

Introduction and scope
Why use real-time measurement devices?
Available equipment types
- Hand-held devices
- Personal / wearable devices
- Real-time fixed detectors

Deciding which kind(s) of measurement device to use
Measurement strategy
Limitations of real-time monitoring devices



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Device selection

The most expensive and capable device is not necessarily the best!

Real time **RCS** monitoring

Too bulky to measure in the “breathing zone”, so can’t assess compliance with OELs.

Expensive gimmick? At least for now…

Real time **respirable dust** monitoring

Great for identifying dust sources and guiding improvements

Portable / wearable

Lower cost

Device limitations

- Using optical sensing techniques, devices can wrongly identify other aerosols as dust.
- Performance may deteriorate over time, especially in harsh environments with high dust loading.
- Performance may deteriorate within the manufacturer's recommended calibration period.
- Beware of cheap devices for which service or calibration is not offered by the manufacturer.
- Any limitations of the devices are generally balanced by their ability to provide new types of information that cannot be captured by conventional (8 hr TWA) techniques.

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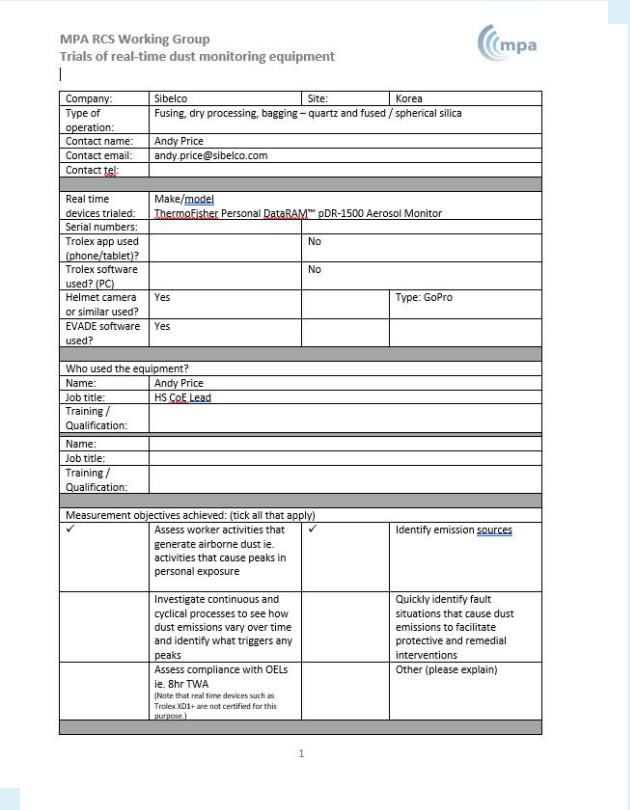
Device trials in five companies

- **Objective is to provide good practice case studies that will be included the Strategy Guide**
- **Standardised feedback form to gather data on:**
  - Measurement objectives
  - How the device was used
  - Job functions investigated
  - New knowledge gained
  - Reductions in dust levels achieved
  - Ease of use
  - Recommendations to others



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Trials of real-time dust monitoring equipment

Company:	Sibelco	Site:	Korea
Type of operation:	Fusing, dry processing, bagging – quartz and fused / spherical silica		
Contact name:	Andy Price		
Contact email:	andy.price@sibelco.com		
Contact tel:			
Real time devices trialed:	Make/model ThermoFisher Personal DataRAM™ pDR-1500 Aerosol Monitor		
Serial numbers:			
Trolex app used (phone/tablet)?		No	
Trolex software used? (PC)		No	
Helmet camera or similar used?	Yes		Type: GoPro
EVADE software used?	Yes		
Who used the equipment?			
Name:	Andy Price		
Job title:	HS CoE Lead		
Training / Qualification:			
Name:			
Job title:			
Training / Qualification:			
Measurement objectives achieved: (tick all that apply)			
✓	Assess worker activities that generate airborne dust ie. activities that cause peaks in personal exposure	✓	Identify emission sources
	Investigate continuous and cyclical processes to see how dust emissions vary over time and identify what triggers any peaks		Quickly identify fault situations that cause dust emissions to facilitate protective and remedial interventions
	Assess compliance with OELs ie. 8hr TWA (Note that real time devices such as Trolex XD1+ are not certified for this purpose.)		Other (please explain)

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TROLEX XD1+

- Wearable, real-time device to measure PM1, PM2.5, PM4.25 and PM10
- Custom alarms
- Data logging
- May be integrated with Reactec workplace cloud-based analytics
  - View real time dust data on a smart watch
  - Measurement data automatically uploaded to the cloud
- Optional camera module coming soon

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Device trialled in five companies

- **Initial findings – case study Burlington Stone**
  - Helped to investigate how different working techniques of individual workers influence their dust exposure
  - Increased worker engagement, involving them in development of safer and healthier work processes
  - Prompted a kind of competition between workers, on who could generate the least amount of dust
  - Helped to go beyond legal compliance

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Next steps

- Finalise collection and analysis of feedback from participant companies
- Integrate good practice case studies into the draft Strategy Guide
- Possible collaboration with the UK Health and Safety Executive (regulator)
- Maybe: a future NEPSI project?

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