

# Airborne Hazard Emergency Response



# Airborne Hazard Emergency Response (AHER)

- Background
- Aims of Service
- Five Phases of Response
- Overview of Activation
- Incidents

# Background

- Major fire at Buncefield in 2005 highlighted the need for co-ordinated advice on airborne hazards during significant incidents
- Various organisations had roles in air quality assessment, but there was no overall lead

Photo courtesy of Royal Chiltern Air Support Unit



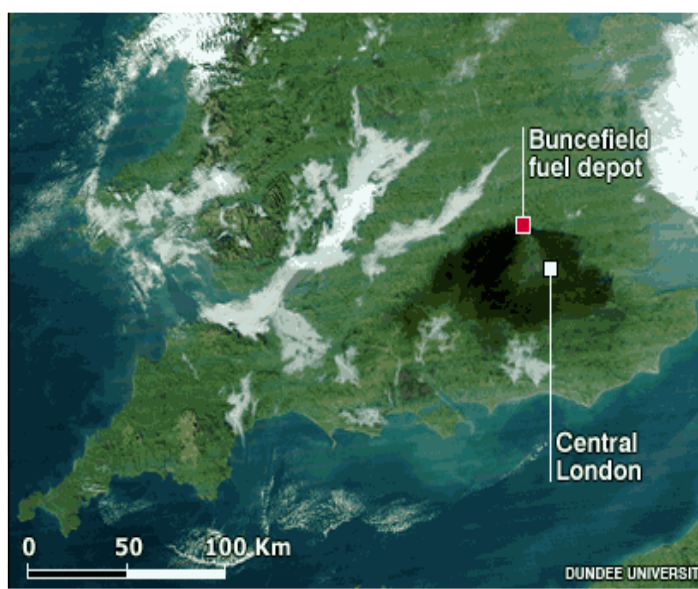


Photo courtesy of Lars Ploughmann.

# Background

- In December 2009 SEPA asked to take the lead in developing an Air Quality Incidents Service
- The Airborne Hazard Emergency Response (AHER) service went 'live' on 15 November 2011



# Aims of the AHER Service

- To ensure that airborne hazard data is passed to Health Protection Scotland and other key partners
- To provide airborne hazard data to assess the likely exposure to members of the public
- To enable meaningful messages to be provided to the public

# AHER Response Phases

## 1. Fire & Rescue Service Detection Identification Monitoring (DIM) Vehicle



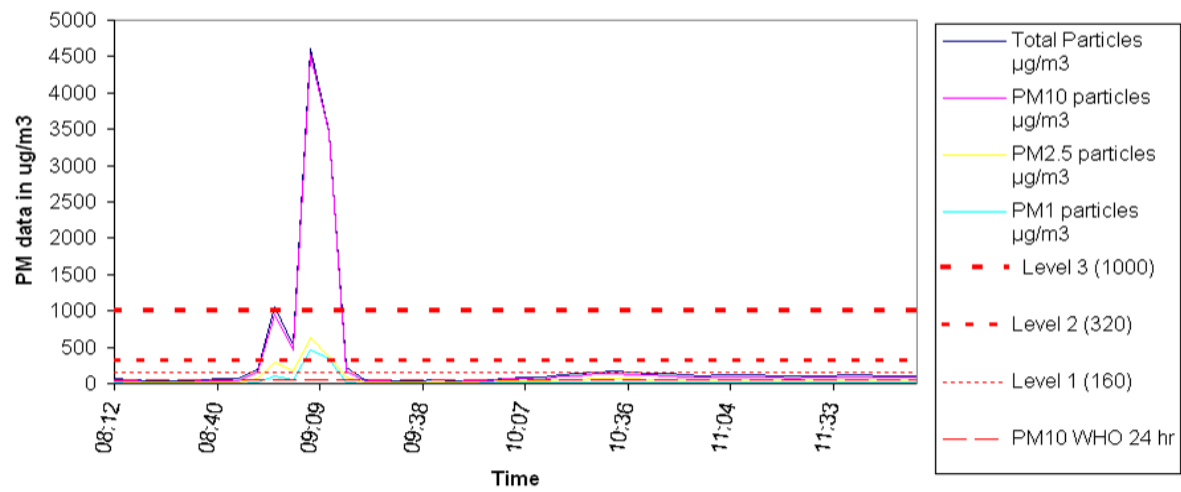
# Detection Identification Monitoring (DIM) Vehicle



**4 vehicles nationally:**

- Grampian
- Tayside
- Strathclyde
- Lothian & Borders





# Response Phases

1. FRS Detection Identification Monitoring (DIM) vehicle
- 2. SEPA AHER Field Response Team**

# AHER Response Team



- 2 x fully equipped vans: located in Aberdeen & Edinburgh or East Kilbride



# FTIR Spectrometer

450 gases including:

- 1,3-butadiene, acrolein, ammonia, arsine, BTEX, carbon monoxide, formaldehyde, HBr, HCl, HCN, HF, methane, isocyanates, nitrogen oxides, phosgene, phosphine, sulphur dioxide...





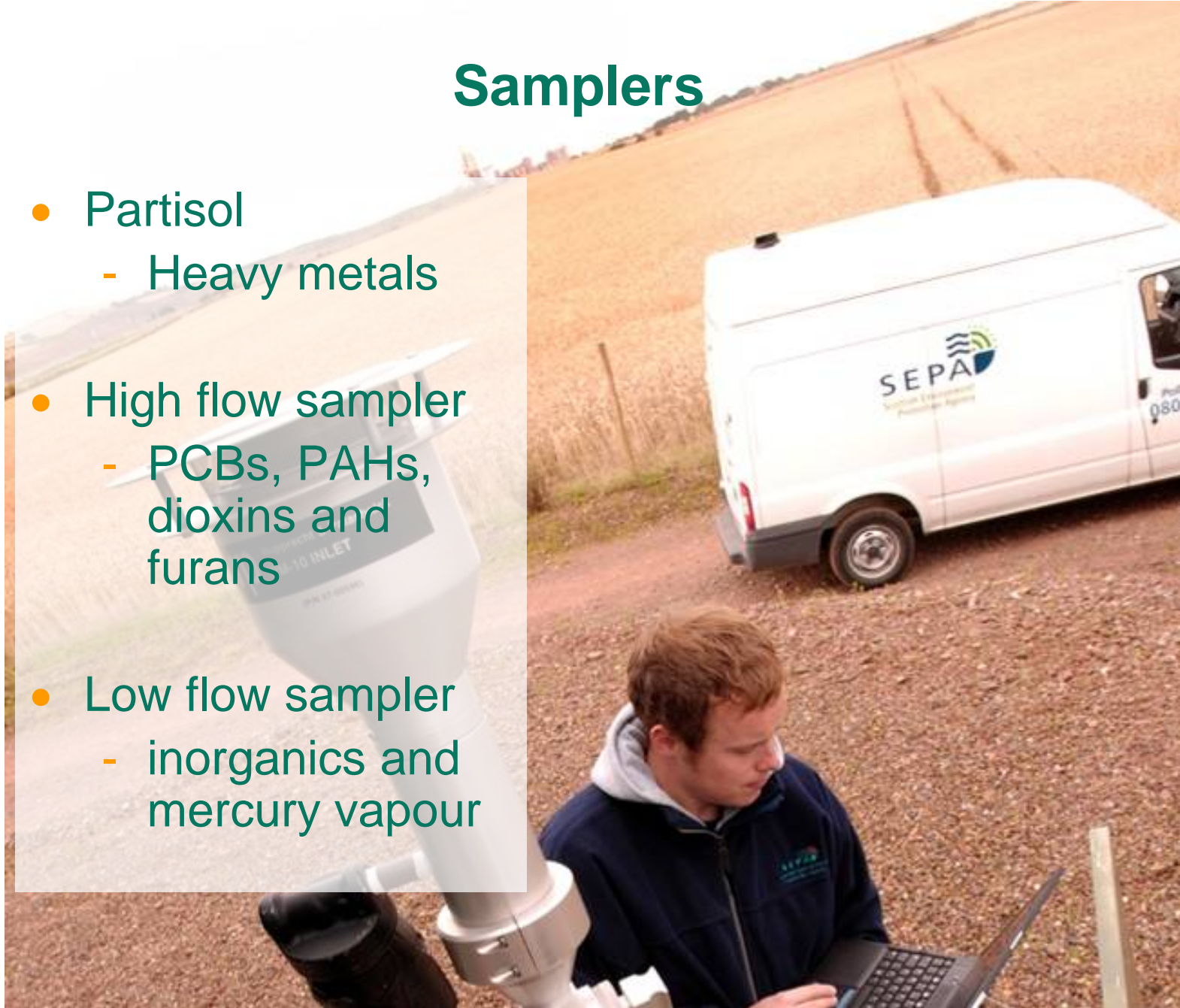
# Other Realtime Instruments

- Osiris
  - TSP, PM<sub>10</sub>, PM<sub>2.5</sub>, PM<sub>1</sub>
- Jerome
  - H<sub>2</sub>S
- QRae
  - CO, Cl<sub>2</sub>, O<sub>2</sub>, LEL



# Samplers

- Partisol
  - Heavy metals
- High flow sampler
  - PCBs, PAHs, dioxins and furans
- Low flow sampler
  - inorganics and mercury vapour



# Response Phases

1. FRS Detection Identification Monitoring Vehicle (DIM)
2. SEPA AHER Field Response Team

## **3. Highlands and Islands Equipment**



# Highland & Islands SEPA Offices

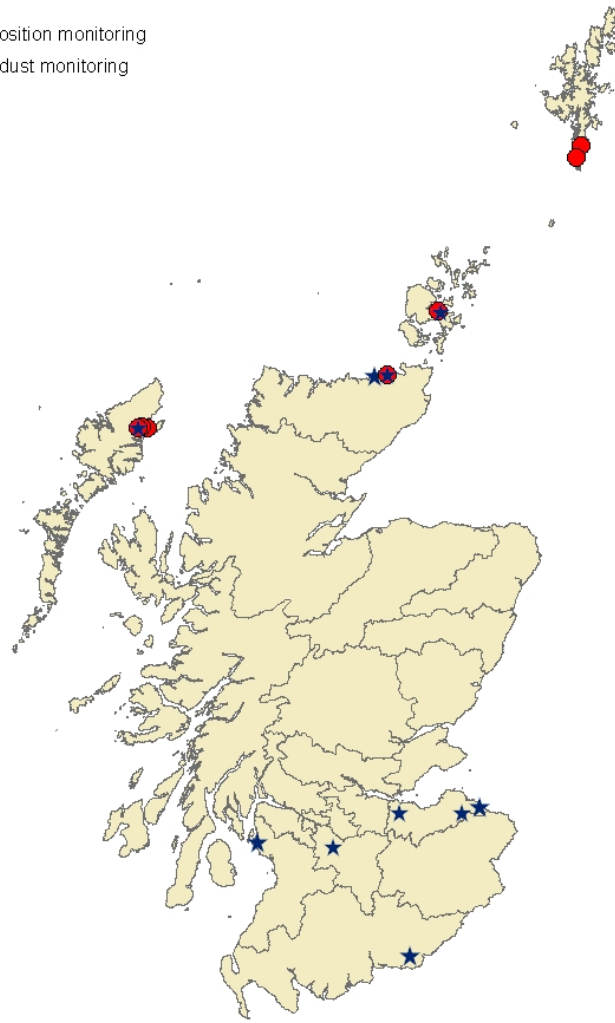
- Thurso
- Kirkwall
- Lerwick
- Stornoway
- Fort William
- Dingwall





**Legend**

- Dust deposition monitoring
- ★ Airborne dust monitoring

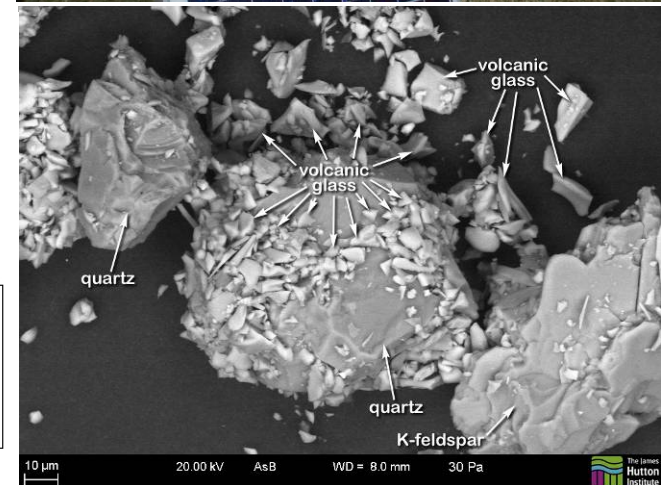


0 25 50 100 Kilometres

**Volcanic Ash  
Airborne Particulate Matter Monitoring**

Produced: 3 June 2011

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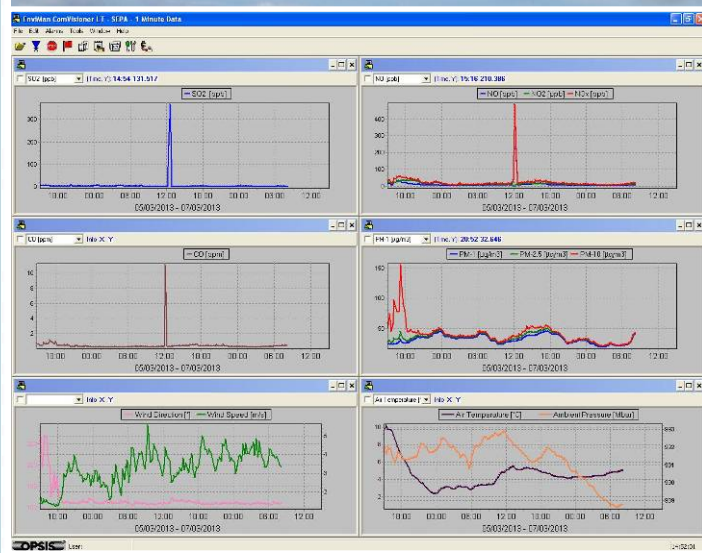


# Response Phases

1. FRS Detection Identification Monitoring Vehicle (DIM)
2. SEPA AHER Field Response Team
3. Highlands and Islands Equipment
- 4. SEPA Prolonged monitoring trailer**

# Prolonged Monitoring Trailer

- EU Reference method equivalent analysers
  - Nitrogen oxides
  - Sulphur dioxide
  - Carbon monoxide
  - PM<sub>10</sub>
  - PM<sub>2.5</sub>
- Samplers
- Met sensors



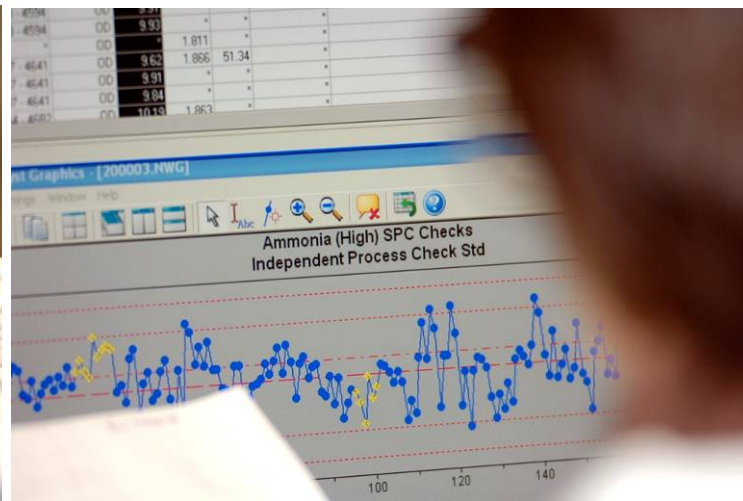
# Response Phases

1. FRS Detection Identification Monitoring Vehicle (DIM)
2. SEPA AHER Field Response Team
3. Highlands and Islands Equipment
4. SEPA Prolonged incident trailer

## **5. SEPA Laboratories**



# SEPA Laboratories



# Overview of AHER activation

1. Fire and Rescue Service inform SEPA Pollution Hotline of a significant incident
2. On-call Airborne Hazard Advisor (AHA) is alerted
4. The AHA contacts Health Protection Scotland (HPS) and together determine the need to monitor the incident
5. The AHA deploys the Field Response Team
6. Airborne Hazard Advisory Cell (AHAC) formed
7. The AHAC reports to the Scientific and Technical Advisory Cell (STAC) and Strategic Coordinating Group (SCG)

# Incident Responses


- Inverkeithing scrapyard fire
- BP Dalmeny hydrogen sulphide leak
- Ratho tyre fire
- Inverness scrapyard fire
- New Deer composting fire
- Kilbagie waste recycling fire
- 10 other calls which didn't require deployment



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**science**  
**Festiva**

## AIR POLLUTION: OUT OF SIGHT, OUT OF MIND

Suitable For Ages: *Ages 14+*  
Time: *6.00pm*  
Duration: *1 hour 30 minutes*  
Price: *£8 / £6*  
Category: *TALK*  
Theme: *Natural World*  
Event Type: *Science Festival Events*  
Venue: *Teviot Row*

 Add to 'My Science'

Air pollution is one of the biggest environmental risks to human health and poor air quality contributes to the loss of more lives than road traffic accidents. Through presentations, lively debate and practical demonstrations, the Scottish Environment Protection Agency explores the state of air quality in Scotland, its impact on human health, and what can be done about it.

Presented by the Scottish Environment Protection Agency (SEPA)



# Any Questions?

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