

JOINT SOP	
Title	Incident Air Monitoring and Advice for Community Health
Purpose	This Joint Standard Operating Procedure (JSOP) details the procedure for Incident Controllers and the Environment Protection Authority (EPA) in decision making for the deployment of incident air monitoring equipment and the initial assessment of air quality data and information. This provides intelligence for the assessment and management of community health impacts during large, complex incidents with airborne emissions (e.g. smoke) in the outdoor environment.
Scope	<p>This JSOP applies to significant or prolonged incidents where smoke or other air emissions have the potential to impact on community health. This includes community exposure to smoke and emissions from fires, hazardous materials incidents or other sources.</p> <p>This JSOP describes how agencies request and assess the need for incident air monitoring deployments, share information, interpret all relevant information and provide advice for community health protection purposes during an emergency.</p> <p>Occupational health and safety issues associated with exposure of emergency services to smoke or other air pollutants are not covered by this JSOP.</p>
Applicable Agencies	<p>This procedure applies to the following agency personnel;</p> <ul style="list-style-type: none"> • CFA • DELWP (FFMVic) • EPA • DH • EMV • FRV • VICSES
Content	<p>The procedural contents of this JSOP are:</p> <ul style="list-style-type: none"> • Step 1: Evaluate the situation [Incident Controller] • Step 2: Assess and request deployment of Incident Air Monitoring [Incident Controller and EPA] • Step 3: Communicate deployment decision & relevant information. [Incident Controller and EPA] • Step 4: Deployment [EPA] • Step 5: Demobilisation [EPA] • Schedule 1 – Request for EPA Incident Air Monitoring • Schedule 2 – EPA Initial Air Quality Intelligence Report

Responsibilities	<p>Consequence management of the emergency Fire Agencies (FRV, CFA, DELWP)</p> <ul style="list-style-type: none"> • Control agency for fires and hazardous materials (hazmat) incidents. • Deployment of first response air monitoring equipment at the incident site. • Plume and/or fire modelling. • Provide current information about the emergency to EPA <p>Department of Health (DH)</p> <ul style="list-style-type: none"> • When a decision is made to deploy EPA air monitoring equipment, the Chief Health Officer (CHO) receives advice from EPA on air pollutants of potential health concern being monitored; technical assessments with expert interpretation of air monitoring data; and ongoing assessment of potential risk to community health. <p>Emergency Management Victoria (EMV)</p> <ul style="list-style-type: none"> • Appoint a State Response Controller / Regional Controller • Coordination of the emergency <p>Environment Protection Authority (EPA)</p> <ul style="list-style-type: none"> • Deployment of incident air monitoring equipment for measuring community exposure to smoke or other emissions associated with incidents that have the potential for significant or prolonged impacts on community health. • Collection and interpretation of air monitoring data and information. • Technical assessment and expert interpretation of results (monitoring data, plume modelling and other information) in consultation with Scientific Officers of fire agencies. • Provision of interpreted air monitoring data, intelligence, assessment of potential health risk and advice for impacted communities. <p>Victoria State Emergency Service (VICSES)</p> <ul style="list-style-type: none"> • Deployment of incident air monitoring equipment on behalf of EPA.
Definitions	<p>The following definitions apply to this procedure:</p> <p>First response air monitoring Air quality monitoring is undertaken by fire services, either emergency responders or specialist scientific officers deployed to the incident and conducted at the incident site and/or areas immediately adjacent to the incident site. First response incident air monitoring is undertaken in the initial hours of the incident.</p> <p>Incident Air Monitoring Air quality monitoring is undertaken by fire services and EPA to provide interpreted data about the level of airborne hazards of community health concern.</p> <p>EPA uses the first response air monitoring information from fire agencies to inform decisions about incident air monitoring. For significant or prolonged incidents, EPA deploys incident air monitoring equipment within 24 hours of a request and may commence deployment of relocatable air monitoring stations from 3 days to provide enhanced and long-term air quality monitoring.</p>

Scientific Officers

A generic term to refer to scientific advisors, subject matter experts and agency staff responsible for the provision of or coordination of scientific advice or expertise including public health expertise.

PROCEDURE

1. Evaluate the Situation – Incident Controller

1.1. When significant and persistent smoke or emissions are being generated (or predicted/anticipated) which may impact or are impacting a community, the following is required to be considered:

- Nature of the fire/event (What are we dealing with? What is burning?) Preliminary assessment of hazardous emissions (with potential to impact community health).
- Scale (How big is it now? In what volumes? Will it grow?)
- Predictions of estimated duration (How long will it persist?)
- Community (Proximity to incident? Are there vulnerable populations?)
- Predictive services (Is modelling and forecasting required?).
- Meteorological forecast (What is the weather doing? Will this change?)
- Time to activate capabilities (Time from decision to receipt of valid data?)
- Engagement of agencies at incident, region and state level EMT's (Are the right agencies engaged and represented?)
- Identify required protective actions / control measures (shelter indoors/exclusion zones or other actions required?)
- Community notifications and warnings (What message(s) and information does the community need?)
- Report significant and persistent smoke emissions to EPA.

2. Assess and Request the deployment of Incident Air Monitoring equipment - Incident Controller and EPA.

2.1. The fire services may undertake air monitoring, where they have the capability to do so, or the Incident Controller may request that EPA deploy air monitoring equipment.

2.2. In some situations, there may be a clear need for deployment of air monitoring equipment to gather data to inform decisions about protection of community health. In other situations, EPA expert advice, interpretation of first responder data and forecasting products may be all that is needed to inform decisions about protecting community health (which may be provided in the format at Schedule 2).

2.3. The table below provides an overview of the capabilities available to monitor air quality and the responsibilities for their deployment.

Response Type	Description	Indicative Response times	Who
First Response Monitoring	Initial data from Emergency Services equipment in field.	Within hours	Fire agencies
Incident Air Monitoring	Specific air monitoring equipment to monitor a range of parameters to acquire valid data to inform decisions about protecting community health from prolonged or significant events.	<24 hrs	EPA (Emergency Services Organisations provide assistance in deployment)
Enhanced Air Monitoring	Relocatable air monitoring stations.	3 days + (Depends on type)	EPA

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2.4. Schedule 1 provides an assessment tool to assess the requirement for incident air monitoring. The Incident Controller is required to use this template to record their assessment and send relevant information to the EPA.

3. Communicate decision and other relevant information – Incident Controller and EPA

3.1. Once a decision has been taken by the Incident Controller to trigger the deployment of incident air monitoring equipment, a formal request is made to EPA (via EPA paging service).

3.2. EPA will request incident details from the Incident Controller. If the EPA has initiated air monitoring, the EPA will ensure that the Incident Controller is informed prior to deployment. The EPA will notify the CHO of intention to deploy incident air monitoring via phone to DH State Duty Officer (SDO) and email a copy of Schedules 1 and 2 to the DH Air quality inbox.

3.3. Where multiple events occur concurrently requests may be escalated to Regional Agency Commander, Regional Controller or State Response Controller to determine the priority of deployment of resources.

3.4. The Incident Controller will provide the EPA with the following information (see Schedule 1 for template):

The location and type of incident.

- Any potential impact on the community (e.g., known or predicted human health hazards in the smoke or associated with other emissions).
- Any monitoring data, observations, modelling, or forecasting undertaken (especially about the smoke plume).
- The criteria that triggered the activation.
- Safety assessments and/or relevant risk assessments.
- Safety information for air monitoring operators.
- Any other information relevant to monitoring.

3.5. Once a decision has been made to deploy EPA air monitoring equipment, EPA may establish a 'scientific' meeting/teleconference (between relevant Scientific Officers from EPA and first response agencies).

3.6. The purpose of this scientific meeting is to discuss the deployment strategy (including initial hazard assessment to determine air quality parameters to be monitored), understand the possible pollutants and ensure that available data and information is being shared efficiently.

4. Deploy – EPA

4.1. Once a decision to deploy has been made EPA identifies:

- The equipment required.
- The availability of equipment.
- Support needed to enable deployment.
- The nearest equipment to the incident (including EPA incident air monitoring equipment at VICSES Units).

4.2. Once the availability and location of equipment is confirmed EPA, in consultation with the Incident Controller will:

- Determine the monitoring plan including monitoring parameters and available air quality information.
- Identify potential deployment sites.
- Determine the deployment plan.

- Confirm logistic support (the Incident Controller is required to ensure if EPA air monitoring operators are deployed, they are embedded within the Incident Structure within the IEMT or IMT as appropriate).
- Communicate monitoring plan and collates available data and information to Incident Controller via Initial Air Quality Report at schedule 2.
- Inform the CHO of the decision to deploy air monitoring equipment, the airborne hazards and air quality parameters to be monitored through sending the Initial Air Quality Report at schedule 2.

4.3. Once the equipment is deployed and acquiring data EPA will:

- Report in accordance with Initial Air Quality Report at schedule 2 until sufficient data is available to enable reporting in line with JSOP 3.19 Managing Significant Community Exposure to Fine Particles and Carbon Monoxide in Smoke from Fires
- Report and provide advice in accordance with JSOP J3.19 for fine particles and Carbon Monoxide in Smoke from Fires.
- Report on any other identified emissions of potential community health concern (i.e. specific to the incident).
- Display Incident Air Monitoring data to EPA AirWatch if determined necessary by Incident Controller and EPA (community notifications and warnings through Vic Emergencies).
- Approve and publishes community information and warnings (in conjunction with EMV) as required where the deployment is for an incident not being managed by an Incident Controller, or where air quality concerns extend beyond the area being managed by the Incident Controller (e.g. air pollution from other sources).

4.4. Where additional equipment is to be deployed (such as relocatable air monitoring stations) the deployment follows the same process as above.

5. Demobilisation - EPA

5.1. EPA and the Incident Controller determine the triggers for de-escalating air monitoring. Inputs to these triggers include intelligence, predictions, professional judgement, and the relevant standards for the contaminants of concern.

SAFETY

Emergency Personnel need to ensure that the protection and preservation of life is maintained at all times.

In the application of this JSOP the following safety considerations apply:

- Air monitoring equipment will not be deployed to sites unless it is safe to enter.
- Air monitoring operators are not to work in smoky areas for prolonged periods.

REFERENCE

Related Documents	<p>Victoria State Smoke Framework</p> <p>Smoke Management Aide Memoire</p> <p>Standard for Smoke, Air Quality and Community Health – Significant fires with fine particles as the primary smoke component of health concern. January 2021, v3</p> <p>Standard for Managing Exposure to Significant Carbon Monoxide Emissions - Community Health v3</p> <p>Standard for Managing Exposure to Significant Carbon Monoxide Emissions – Responder Health v3</p> <p>JSOP 3.19 Managing significant community exposure to fine particles and carbon monoxide in smoke from fires</p> <p>JSOP 4.01 Public Information and Warnings for Class 1 Emergencies</p> <p>Protective Action Decision Guide for Emergency Services during Outdoor Hazardous Atmospheres</p> <p>Protective Action Guide for Local Government and Industry during Outdoor Hazardous Atmospheres</p>
Environment	Nil

REVIEW		
Date Issue	17 September 2021	
Date Effective	17 October 2021	
Date to be Reviewed	September 2024	
Date to Cease		
AUTHORITY		
The Emergency Management Commissioner has issued this JSOP under section 50 of the Emergency Management Act 2013.		
Approved	Signature	Date
Andrew Crisp Emergency Management Commissioner		
Endorsed	Signature	Date
Lee Miezis Chief Executive Officer, EPA		
Brett Sutton Chief Health Officer, DH		
Jason Heffernan Chief Officer, CFA		
Chris Hardman Chief Fire Officer DELWP (FFMVic)		
Ken Block Commissioner, FRV		
Tim Wiebusch Chief Officer Operations VICSES		

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Schedule 1

Request for Incident Air Monitoring

Incident name:

Control Agency:

Time/Date:

Incident location:

Control Location:

Incident controller Name:

Contact No:

Situation:

Type of incident:	
Potential community impact:	
Available monitoring data:	
Safety assessments and/or relevant risk assessments:	
Safety information for Air Monitoring staff:	
Other information relevant to monitoring:	

Activation criteria:

Event	Example Scenario	Weighting	Score
Visibility in local community	<5 km	3	
	>5 km < 20 km	2	
	>20 km	1	
Community Proximity	Downwind community	3	
	Large upwind community	2	
	Small upwind community	1	
Weather Forecast	Relatively still, overcast	3	
	Relatively windy, clear skies	2	
	Relatively windy, rain forecast	1	
Topography	Hilly with valleys subject to inversion	3	
	Not applicable	2	
	Flat landscape, dispersion likely	1	
Class of event or hazard	Tyre fire, chemical plant, warehouse, coal mine or similar	3	
	Hydrocarbon spill, chemical spill or similar	2	
	Bushfire or planned burn, composting site or similar	1	
Expected duration of event	>4 days	3	
	>2 days	2	
	24 hours or less	1	
Note: Any event that is not-applicable scores a zero (0).		Total:	
≤6	Low risk	Deployment not necessary	
7 – 12	Medium risk	Consider deployment – professional judgment	
> 12	High risk	Trigger deployment	

Decision: Incident Air Monitoring is requested from _____.

Signed: (Incident Controller) _____ **Date:** _____

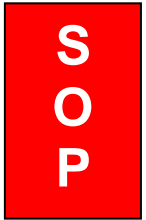
SCHEDULE 2

EPA Initial Air Quality Intelligence Report

Report Time/Date: Hour, Day, Month Year [current time and date]

EPA contact name: [SDO] **Contact No:** [mobile phone]

Incident: [Location of the incident – event name]



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Air Quality Intelligence Summary:

- EPA's initial assessment based on available data and intelligence is that:
- The air quality is likely to be ['VERY POOR'] near the incident site, as per the air quality categories according to Air Quality (AQ) standard
- Likely major/primary pollutants with potential to impact community health are: [insert the likely pollutants e.g SO2/PM2.5/CO]
- Likely pollutant behaviour: [what is the smoke likely to do and how might this affect air quality]
- Potential community exposure:
 - [list likely exposure sites; downwind population; residential, industrial, sensitive locations i.e hospitals, schools, early childhood centres, aged care facilities]
- Initial public health advice/assessment:
 - [standard smoke message]
 - [initial health risk assessment]
 - [other relevant initial advice]
- Air Quality Outlook: [what is expected over the next few hours, and the new day, in relation to air quality based on predicted weather and smoke effects]

EPA Air Monitoring and available data

EPA, based on the situational analysis summary is intending to **[deploy/not deploy]** the following air monitoring equipment.

Proposed Location	Pollutant	Date and Time	Rationale
<address>	<pollutant monitored>	<ddmmyy 24:00>	<why site has been selected i.e., near sensitive receptor>

- Initial EPA Observations: [Insert detail of the observations and photos if available]
- Data: [Insert detail of available or indicative data and the source that the data came from along with graphs, plots etc if available]

EPA Demobilisation Triggers

The following triggers will be used for consideration for demobilisation of Incident Air Monitoring, in consultation with the Incident Controller:

- (i) Incident declared 'safe'; or
- (ii) No offsite impacts observed/forecast by EPA or reported by Incident Controller (if EPA is not attending); or
- (iii) Monitoring shows air quality 'GOOD' to 'FAIR' for 24 hours.



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End of Report