



IDN31800  
Australian Government Bureau of Meteorology  
New South Wales

### Spot Fire Weather Forecast for Mitchell, ACT

Issued at 7:26 am EST on Friday 16 September 2011.

Incident Type: Hazmat Incident	Website Form No: 018
Spot Forecast Location: ACT	Request No: 1
Latitude/Longitude: -35.21000 149.11000	Fax Number: 1
Elevation (ASL): 500	Contact Ph:
Fuel Type: Other	Contact Name:

### Weather Forecast starting 0800 hours Friday 16 September 2011

Mostly sunny. Westerly winds becoming gusty at times. At 7am the inversion height was at approximately 500m. This inversion is expected to break down between 8am and 10am allowing westerly winds to strengthen at the surface.

12 Hour Forecast										
Drought factor: 6.0				Curing value (%): 66						
Local Time	Temp (C)	Dewpt (C)	RH (%)	10m Wind (km/h)			1000m AGL Wind (km/h)		FFDI	GFDI
				Dir	Speed	Gust	Dir	Speed		
0800	07	4	81	WNW	15	25	W	60	1	0
1100	16	6	51	WNW	25	45	W	60	4	1
1400	21	7	40	WNW	35	50	W	65	9	2
1700	19	7	46	W	35	55	W	65	7	2
2000	15	6	55	W	20	30	W	65	3	1
2300										
0200										
0500										
0800										
1100										
1400										

AGL - Above Ground Level, RH - Relative Humidity, Dir - Direction, Dewpt - Dew Point

WEATHER OBSERVATIONS for / /							Time:	Name:
Temp/RH Instrument:			Wind Instrument:			Height of wind observation:		
Local Time	Temp (C)	Dewpt (C)	RH (%)	Wind (km/h)			Weather	Location
				Dir	Speed	Gust		

- \* If forecast differs significantly from observed conditions, or for further information, contact the fire weather forecasters on ( )
- \* For firefighter and public safety make regular on-site weather observations. Please fax this form to fire weather forecaster on ( ) to assist in forecast verification.

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**From:** Friday, 16 September 2011 7:30 AM  
**Sent:**  
**To:**  
**Subject:** Fwd: Weather forecast Canberra Friday 16th Sep. [SEC=UNCLASSIFIED]

Sent from my iPhone  
Mobile'

Begin forwarded message:

**From:**  
**Date:** September 16, 2011 7:04:48 GMT+10:00  
**To:** ;  
**Subject:** Weather forecast Canberra Friday 16th Sep. [SEC=UNCLASSIFIED]

Forecast for Canberra Friday 16th September 2011

Current surface conditions at 6:30am

Temp 0C wind NNW (340 degrees) 5-10km/h

Inversion height approx 500 metres, wind above inversion WSW (230 degrees) 60 km/h.

Forecast conditions

8am : Surface temp 5C  
surface wind NNW (340 degrees) 10-15 km/h  
Wind above inversion (500 metres) WSW (250 degrees) 60 km/h

10am : Surface temp 12C  
Surface wind WNW (310-330 degrees) 20-30km/h Gusts 40-50 km/h  
Wind above (500 metres) W (270 degrees) 60 km/h - NOTE INVERSION BREAKING DOWN BETWEEN 8 AND 10 AM (APPROX 9AM)

midday: Surface temp 16C  
Surface wind WNW (310-330 degrees) 30-40 km/h Gusts to 45-55 km/h  
wind above 5000 metres W (280 degrees) 60 km/h

2pm : Surface temp 22C  
Surface wind WNW (310-330 degrees) 30-40 km/h Gusts to 45-55 km/h  
Wind above 500 metres W (280 degrees) 60 km/h

4pm : Surface temp 21C  
Surface wind WNW (310-330 degrees) 30-40 km/h Gusts 45-55 km/h  
Wind above 500 metres W (280 degrees) 60 km/h

6pm: Surface Temp 15C  
Surface wind WNW (310-330 degrees) 20-30 km/h Gusts to 30-40 km/h  
Wind above 500 metres W (280 degrees) 60-70 km/h

Next update 10am

OIC Canberra Bureau of meteorology  
ph  
mob (

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**From:** |  
**Sent:** Friday, 16 September 2011 6:57 AM |  
**To:** |  
**Cc:** |  
**Subject:** special fire weather forecast for Hazmat Fire at Mitchell, ACT  
**Attachments:** Special\_Fire\_Weather\_Forecast\_Request.110916.pdf  
**Importance:** High

Dear Madam / Sir,

Please find attached Special Fire Weather Forecast for the Hazmat/Fire at Mitchell, ACT.  
Please include in all correspondence.

Cheerz,

New South Wales Fire Brigades  
Specialised Operations - Hazmat / CBR  
Amarina Avenue Greenacre NSW 2190  
phone: (  
fax:  
email:



**NSW Rural Fire Service  
Bureau of Meteorology**



**6.09.01 Special Fire Weather Forecast Request**

**WILDFIRE**       **HAZARD REDUCTION**  
(please tick the appropriate type)

**Section 44**   
(tick if applicable)

Requested by (Name): \_\_\_\_\_ Date: 16-09-2011 Time: 06:45  
 Organisation./Location: Fire & Rescue NSW  
 Phone No: \_\_\_\_\_ Fax No. \_\_\_\_\_ Mobile No: \_\_\_\_\_  
 Email Address \_\_\_\_\_

If **HAZARD REDUCTION**, date/time of ignition(s): \_\_\_\_\_ Date: n/a Time: n/a

**FIRE LOCATION**

Name of Fire: Mitchell, ACT Elevation Range: 0 (Google Maps) m  
 Distance bearing from **readily identifiable** town (essential): 300 metres  
 Topography/Aspect: industrial area  
 Grid Reference: \_\_\_\_\_ (include map name and scale)  
 Latitude/Longitude: 35 12'34.45" S & 149 08'11.53" E (Degrees/Minutes/Seconds format)  
 Drought Factor (if known): \_\_\_\_\_ Grassland Curing (if known): \_\_\_\_\_ %

**WEATHER OBSERVATIONS NEAR FIREGROUND**

Date: 16-09-2011 Time: 06:30 (take observations upwind of fire if possible)  
 Location relative to Fireground: approximately 6 km  
 Topography/Aspect: open industrial area Elevation: 0 m m  
 Temperature: 0.0 °C Trend: jumpy Type of Instrument: \_\_\_\_\_  
 Humidity: 89 % Trend: jumpy Type of Instrument: \_\_\_\_\_  
 Wind speed: 4 km/h Gusts to: 11 km/h  
 Wind Direction: ENE Wind Trend: swinging  
 Wind measured (give instrument) or estimated: \_\_\_\_\_ BoM website \_\_\_\_\_  
 Cloud Cover: clear (in 1/8's) Cloud Height:  Low  Middle  High  
 General Weather: inversion at 500 metres

**All Requests to be sent to RFS State Operations. Always notify State Operations by phone (All Hours) when lodging Request.**

**State Operations Centre**

Email: \_\_\_\_\_ Fax: \_\_\_\_\_ Phone: \_\_\_\_\_  
**Bureau of Meteorology Fire Weather Desk** Phone: \_\_\_\_\_

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**From:** Friday, 16 September 2011 5:40 AM  
**Sent:**  
**To:**  
**Subject:** 0530Hrs test plot areas attached  
**Attachments:** testpoints\_0530Hrs.pdf



**EMERGENCY INCIDENT**

**TITLE**  
Test plots 0530Hrs

**DATE**  
16/9/2011 0530Hrs

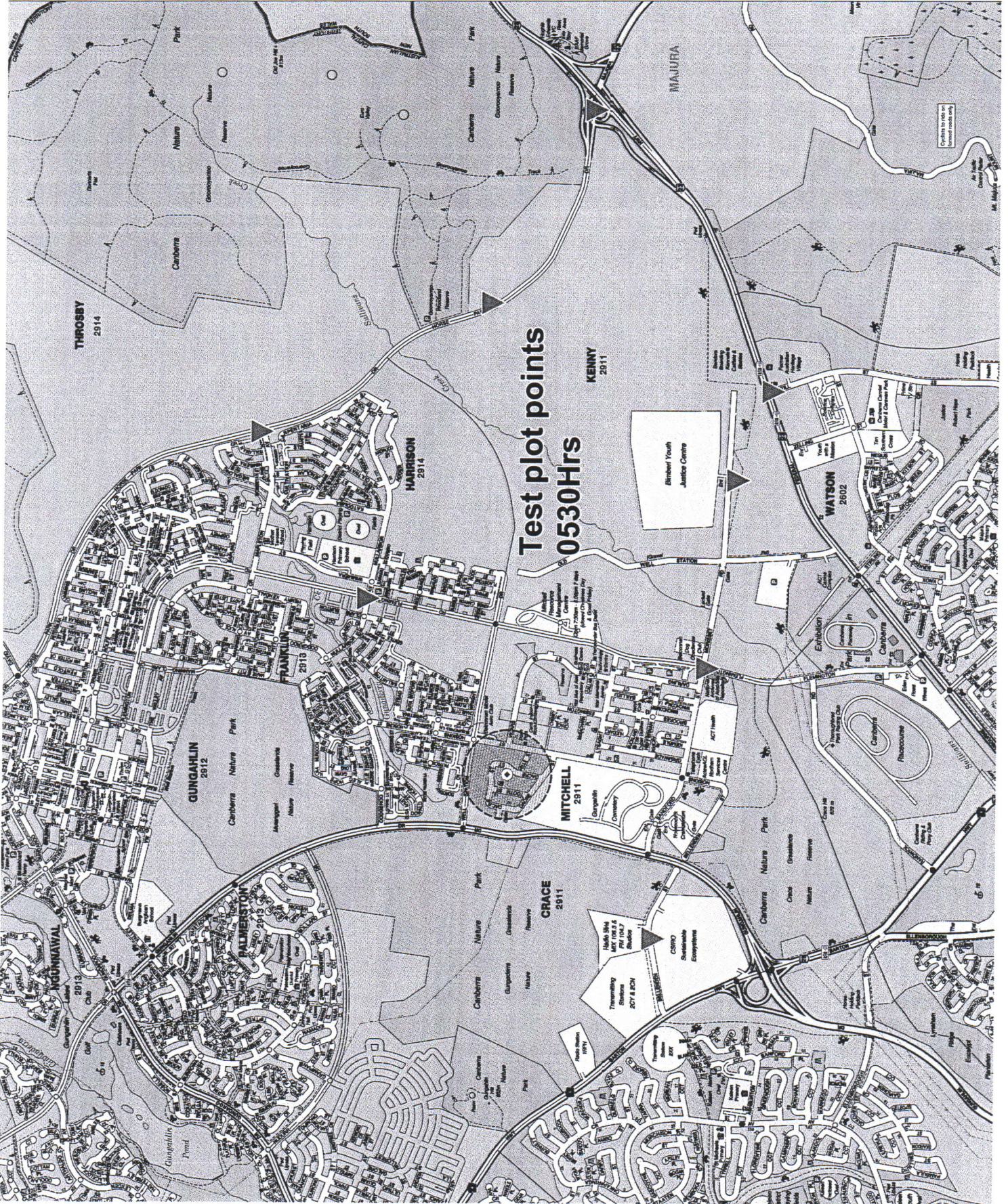
**NOTES**  
type notes here



**PROGRAM VERSION**  
HAZMAT II.1.1 28JAN2011



Data supplied by various stakeholders under  
APEC/C/C Guidelines  
The information contained herein has been  
provided in good faith. Effort has been made  
to ensure accuracy but the user assumes all  
responsibility for any and all errors or omissions.  
The Stakeholders bear no responsibility for  
errors or omissions nor any loss or damage  
that may result from the use of this  
information.  
Fireteam, New Zealand Land Information





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**From:** Friday, 16 September 2011 5:32 AM  
**Sent:**  
**To:**  
**Cc:** 110916.Mitchell.02  
**Subject:** 110916.Mitchell.02.doc; ChemBulletin.Phosgene.pdf; WS\_CMS.pdf  
**Attachments:**

I have attached an updated plume of the situation with the 500 metre inversion. It made no difference to the model. However, I included the IDLH value threat line in yellow. It is approximately a 500 metre zone.

Also, I have attached:  
- my phosgene chem bulletin (leftover from Marangaroo) as a quick reference guide;  
- the CMS SIMS Work Sheet.

Yes, Intermediate Hazmat Stations ought to have phosgene chips. However, the chip can do 10 measurements only, thus they may run out and need more chips...  
Hope the coffee is reasonable.

New South Wales Fire Brigades  
Specialised Operations - Hazmat / CBR  
Amarina Avenue Greenacre NSW 2190  
phone: , ,  
fax:  
email: 1

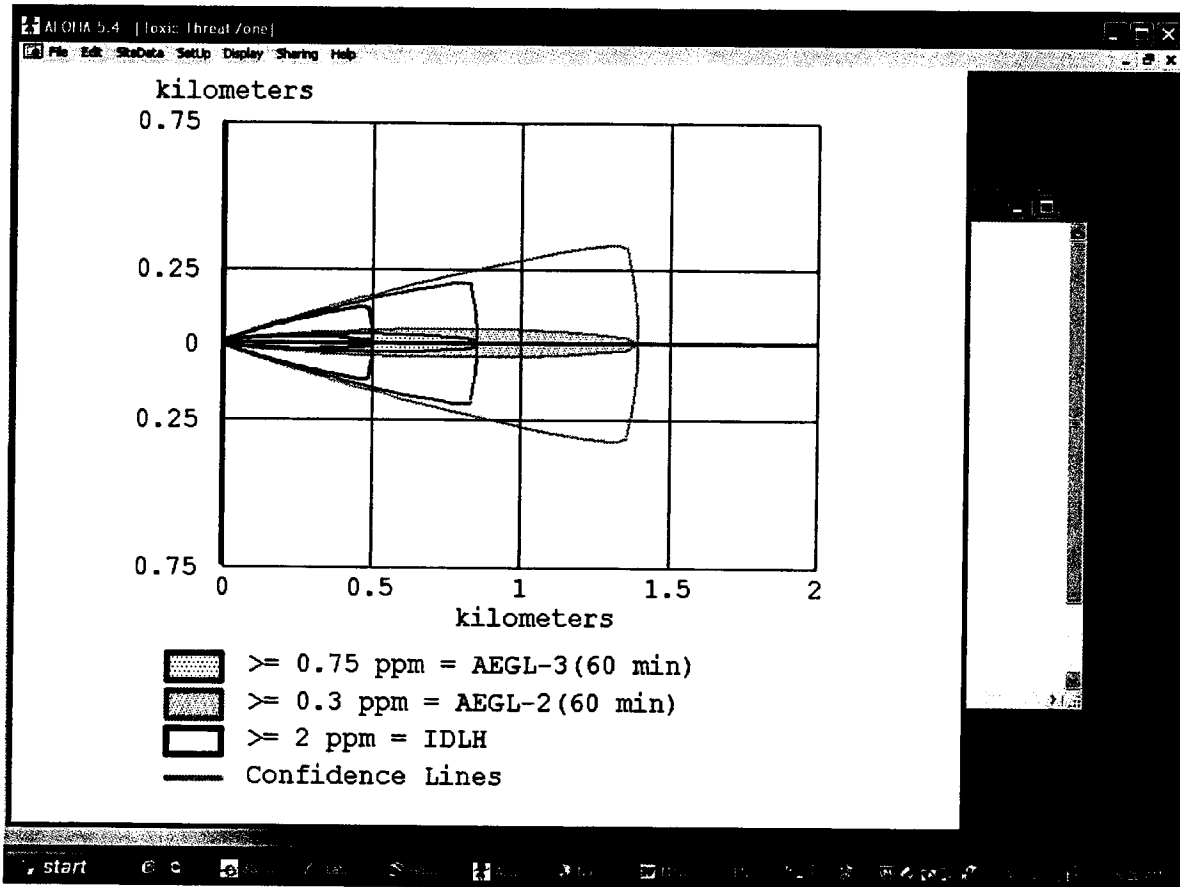
110916.Mitchell at Dacre Street

4200 x 44 gallon drums sodium under oil + PCB x 400 kg

Lat Long  
 35°12' 34" south x 149°08 11" east  
 -35.209604° south x 149.136564° east = for BoM if requested

GMT + 10 hours

Date/Time EST	Tmp °C	App Tmp °C	Dew Point °C	Rel Hum %	Delta-T °C	Wind					Press QNH hPa	Press MSL hPa	Rain since 9 am mm
						Dir	Spd km/h	Gust km/h	Spd kts	Gust kts			
16/04:30am	0.8	-2.9	-0.3	92	0.4	SSE	9	11	5	6	1017.7	-	-
16/04:00am	1.1	-2.3	-0.8	87	0.7	SSE	7	11	4	6	1017.9	-	-
16/03:36am	1.0	-2.4	-0.3	91	0.5	SE	7	9	4	5	1017.9	-	-
16/03:30am	1.8	-1.5	0.0	88	0.7	SE	7	9	4	5	1017.8	-	-
16/03:00am	2.1	-1.7	-0.5	83	1.0	SE	9	11	5	6	1017.8	1018.0	0.0
16/02:30am	3.2	0.0	-0.2	78	1.3	S	6	7	3	4	1018.3	-	0.0
16/02:00am	4.0	2.0	0.2	76	1.5	CALM	0	0	0	0	1018.6	-	0.0
16/01:30am	3.8	0.7	0.0	76	1.5	N	6	7	3	4	1019.1	-	0.0
16/01:00am	6.0	2.3	0.0	65	2.4	N	9	13	5	7	1019.3	-	0.0
16/12:30am	6.8	3.4	-0.5	59	2.9	N	7	9	4	5	1019.4	-	0.0
16/12:00am	4.8	2.0	-0.3	69	2.0	NNW	4	9	2	5	1019.4	1019.6	0.0





# NEW SOUTH WALES FIRE BRIGADES

## Specialised Operations – HMRU / CBR

### Scientific Advisor

**PHOSGENE** = Agent CG = Carbonyl Chloride = Carbon Oxychloride

- Family** organo-chloride choking agent (war gas)
- Formula COCl<sub>2</sub> (note that there is NO phosphorus in phosgene)
  - CAS No 75-44-5
  - Colour colourless gas
  - Odour resembling freshly mown hay or mouldy hay; sweet
  - Threshold 0.5 ppm (2.02 mg/m<sup>3</sup>)

**Transport**

- usually shipped as a liquefied compressed gas ADG class/division 2.3; UN 1076

**Detection**

- Chemical Colourimetric Tubes
- PID Fitted with 11.7 eV UV lamp (CF<sub>11.7</sub> = 8.5)

**Density**

- vapour 3.40 @ ??°C
- liquid 1.40 @ 20°C

**Vapour Pressure**

- mmHg 1215 mmHg @ 20°C

**Flammability Stability**

non-flammable; non-combustible  
stable when stored pure and dry; decomposes in environment

**Toxicity**

- TWA-TLV 0.1 ppm = 0.4 mg-min/m<sup>3</sup>
- IDLH 2.0 ppm = 8.1 mg-min/m<sup>3</sup>

**Symptoms**

rhinitis	(breathing difficulty)	nausea
conjunctivitis	coughing / choking	pulmonary oedema
lacrimation	foaming sputum	death...

**Decontamination**

Probably not required due to gaseous nature of substance, but:

- copious amounts of tepid water or soap & tepid water (if available)
- soda ash for a spill in liquid form (not yet evaporated)
- dilute ammonia solution for plant and equipment (as an alternate choice)

**Industrial Uses**


- used in mining and in manufacturing of urethanes, TDI, insecticides, herbicides





# GAS DETECTOR CHIP MEASUREMENT SYSTEM



	<p><b>Description</b></p> <p>The Chip Measurement System (CMS) is a portable gas detector used to measure the concentration of known gases and vapours in ppm.</p>
	<p><b>Specification</b></p> <ul style="list-style-type: none"> <li>Is currently in-service as per calibration sticker</li> <li>Successfully completes all stages of operation when used with training chip or expired chip</li> <li>Battery status shows three or more 'icons'</li> </ul>

### Corresponding SIMS Calendar Key for Inspection and Testing:

CHECK	FREQUENCY	INSPECTION REQUIREMENT TASK LIST
CHECK 1	Daily	N/A
CHECK 2	1 <sup>st</sup> Day Shift	N/A
CHECK 3	Weekly Mon/Tu	N/A
CHECK 4	Fortnightly	Check kit inventory including chip expiry dates; Run detector
CHECK 5	Monthly	N/A
CHECK 6	Quarterly	N/A
CHECK 7	Biannually	N/A
CHECK 8	Annually	N/A
OTHER	Other	18 monthly: Send to TSC for Service/SED; Update WILE database

**Note:** Refer to NSWFB Recommended Practice for operation and service.

### For All Enquiries:

Contact the Hazardous Materials Response Unit Technical Service Centre **9709 4335** from Monday to Friday during normal business hours for enquiries, advice, service and exchange.

<p><b>Inventory of Case:</b></p> <ul style="list-style-type: none"> <li>1 x CMS Unit</li> <li>1 x Black Pelican® 1500 Carry Case</li> <li>1 x Leather Carry Case w/ Strap</li> <li>1 x Remote Pump</li> <li>1 x Float with Hose &amp; Adaptor</li> <li>1 x 4 x 0.8 mm Flat-head Screwdriver</li> <li>1 x 3 mm Hex (Allen) Key</li> <li>1 x Hydrophobic Filter</li> <li>1 x Telescopic Wand w/ Hose &amp; Adaptor</li> <li>1 x Recommended Practice (optional)</li> <li>4 x AA Spare Alkaline Batteries (optional)</li> <li>Heavy Hazmat carry all chips; Intermediate Hazmat carry those chips listed in blue</li> </ul>	<p><b>Chemical Chips:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="padding-right: 20px;">Acetic Acid</td> <td>Acetone</td> </tr> <tr> <td>1,3-Butadiene</td> <td>Ammonia</td> </tr> <tr> <td>Carbon Dioxide</td> <td>Benzene</td> </tr> <tr> <td>Hydrogen Sulphide</td> <td>Chlorine</td> </tr> <tr> <td>Mercaptan</td> <td>Hydrochloric Acid</td> </tr> <tr> <td>Methanol</td> <td>Hydrocyanic Acid</td> </tr> <tr> <td>Nitrogen Dioxide</td> <td>Nitrous Fumes (N<sub>x</sub>O<sub>x</sub>)</td> </tr> <tr> <td>o-Xylene</td> <td>Perchloroethylene</td> </tr> <tr> <td>Ozone</td> <td>Petroleum Hydrocarbs</td> </tr> <tr> <td>Propane</td> <td>Phosgene</td> </tr> <tr> <td>Vinyl Chloride</td> <td>Phosphine</td> </tr> <tr> <td></td> <td>Sulphur Dioxide</td> </tr> <tr> <td></td> <td>Toluene</td> </tr> <tr> <td></td> <td>Trichloroethylene</td> </tr> </table>	Acetic Acid	Acetone	1,3-Butadiene	Ammonia	Carbon Dioxide	Benzene	Hydrogen Sulphide	Chlorine	Mercaptan	Hydrochloric Acid	Methanol	Hydrocyanic Acid	Nitrogen Dioxide	Nitrous Fumes (N <sub>x</sub> O <sub>x</sub> )	o-Xylene	Perchloroethylene	Ozone	Petroleum Hydrocarbs	Propane	Phosgene	Vinyl Chloride	Phosphine		Sulphur Dioxide		Toluene		Trichloroethylene
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	Trichloroethylene																												

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**From:** Friday, 16 September 2011 5:07 AM  
**Sent:**  
**To:**  
**Cc:** Mitchell fire  
**Subject:** 110916.Mitchell.doc; 110916.Mitchell.alo  
**Attachments:**

I have attached a threat zone in MS Word and the aloha document which you may or may not be able to open.

I have used phogene as the released agent at a rate of:

- 100 kg produced over a 1 hour period;
- this should be worst case scenario;
- assumed no inversion (\*);
- assumed partial cloud cover (\*);

The plume shows a 100 m corridor by less than 1.5 km long as the threat zone.

(\* we should speak to BoM about having this info on website and/or available to us.  
Hope it is a help  
Cheerz,

New South Wales Fire Brigades  
Specialised Operations - Hazmat / CBR  
Amarina Avenue Greenacre NSW 2190  
phone:  
fax:  
email:

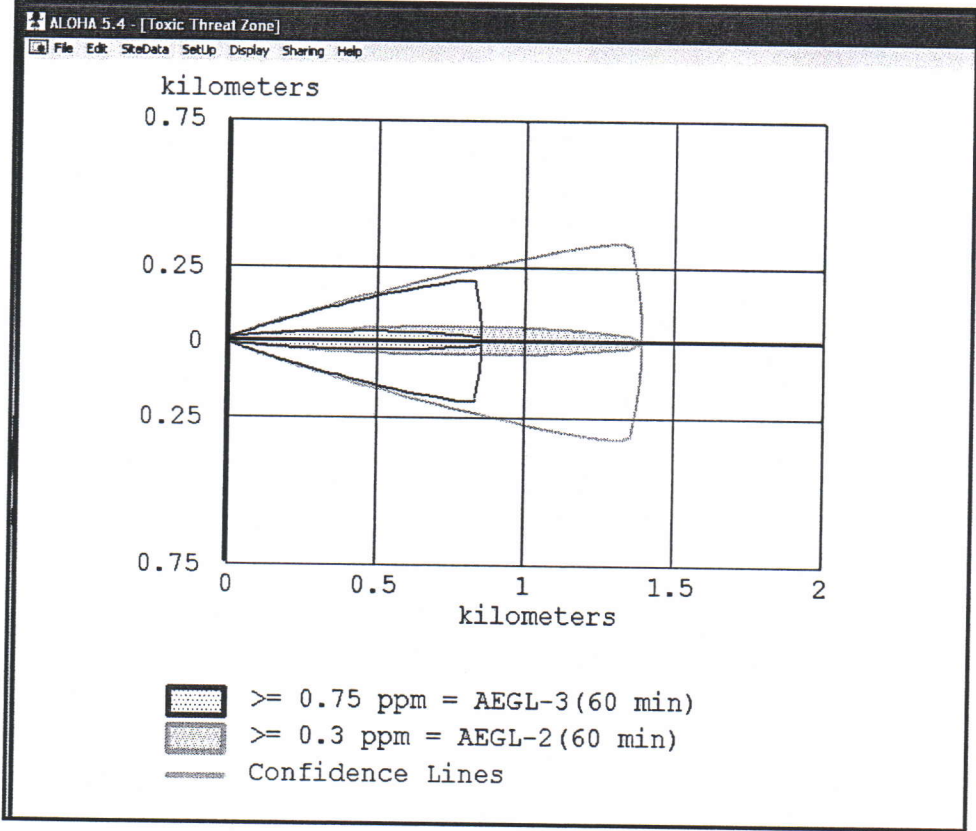
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GMT + 10 hours

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16/02:00am	4.0	2.0	0.2	76	1.5	CALM	0	0	0	0	1018.6	-	0.0
16/01:30am	3.8	0.7	0.0	76	1.5	N	6	7	3	4	1019.1	-	0.0
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**From:**

**Sent:**

Friday, 16 September 2011 3:25 AM

**To:**

IMG\_1740.MOV; ATT00001.txt

**Attachments:**

