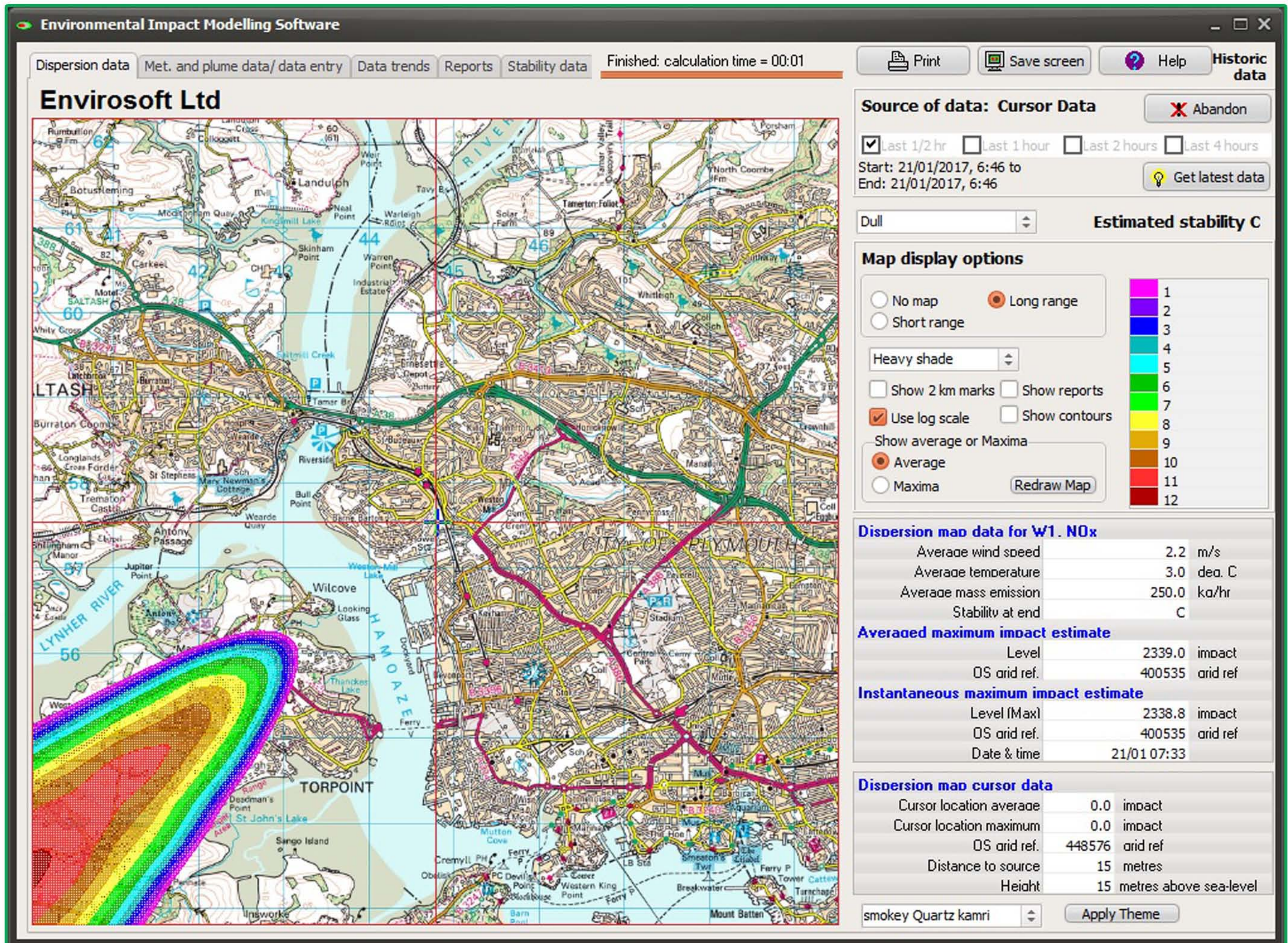


CEMPact - Effective Complaints Management



CEMPact

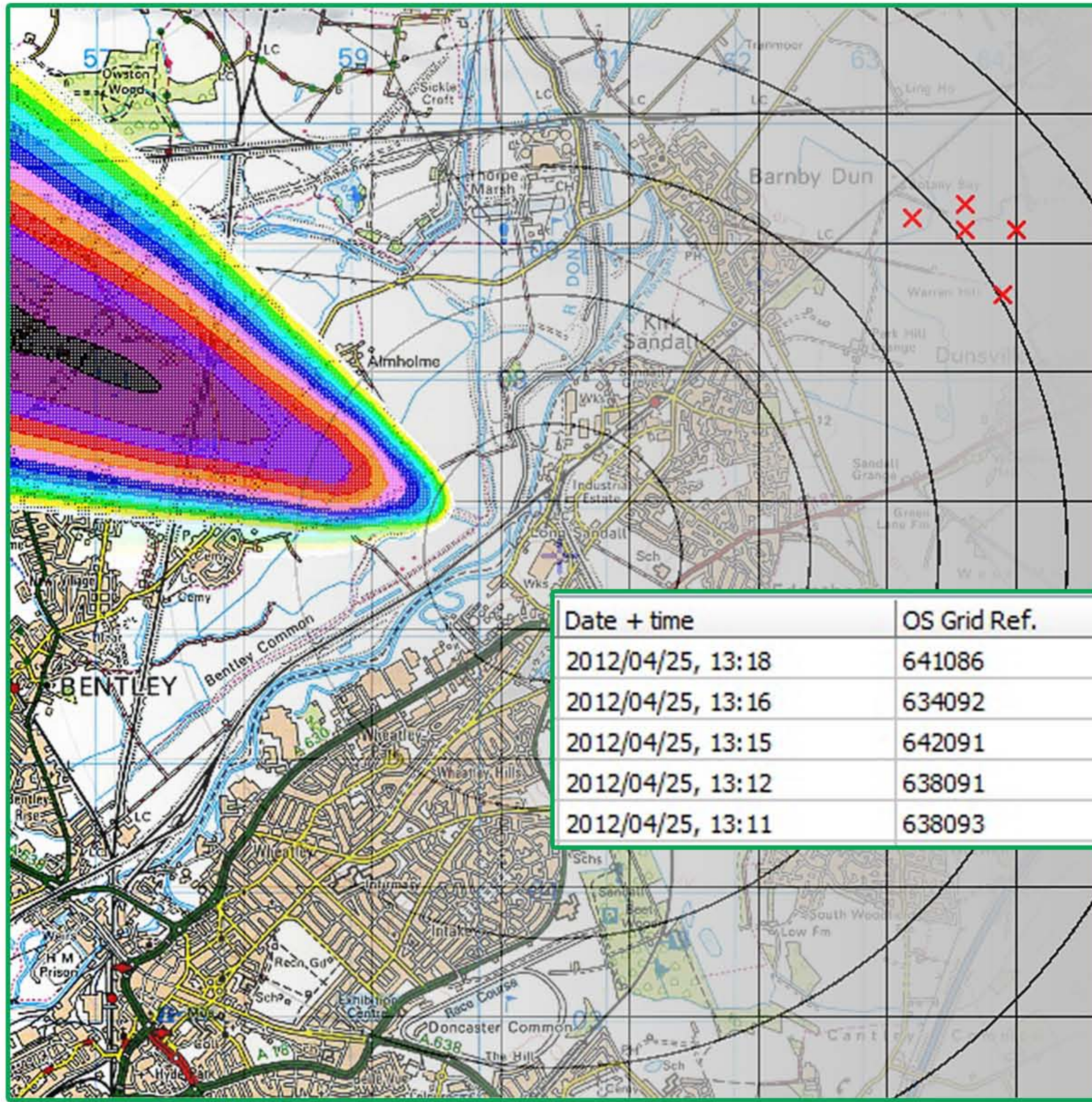
CEMPact has been developed to integrate CEMS and weather data to predict where emissions, dust or smells may be experienced at ground level in the immediate vicinity.

The plume dispersion estimate is drawn directly on to a map of the local area and can be either in real-time or from historical data.

Reports of environmental nuisances may be entered with their locations and plotted directly on to the map along with dispersion at the reported time for assessment.

Program Features

- Operates in parallel with existing emission monitoring system.
- Predicts both real-time and historical plume dispersion (selected using simple mouse operations).
- Automatically updates the prediction from the latest data available.
- Manages calls of 'incidences' and plots these straight onto the dispersion prediction.
- Summarises and graphs meteorological data and plume trajectory.
- Trajectory of buoyant plumes assessed according to Brigs estimate for plume rise.
- Plume dispersion estimated using Gaussian model treatment in horizontal and in vertical for stable atmospheres.
- 3 dimensional local terrain mapping.



Date + time	OS Grid Ref.	Name	Report type	Report class
2012/04/25, 13:18	641086	Mr A Partridge	Smell	Normal
2012/04/25, 13:16	634092	Mr J Kennedy	Dust	Normal
2012/04/25, 13:15	642091	Mr J Lennon	General	Normal
2012/04/25, 13:12	638091	Mr B Lee	Smell	Normal
2012/04/25, 13:11	638093	Mr E Presley	Dust	Normal

Complaint Logging and Assessment

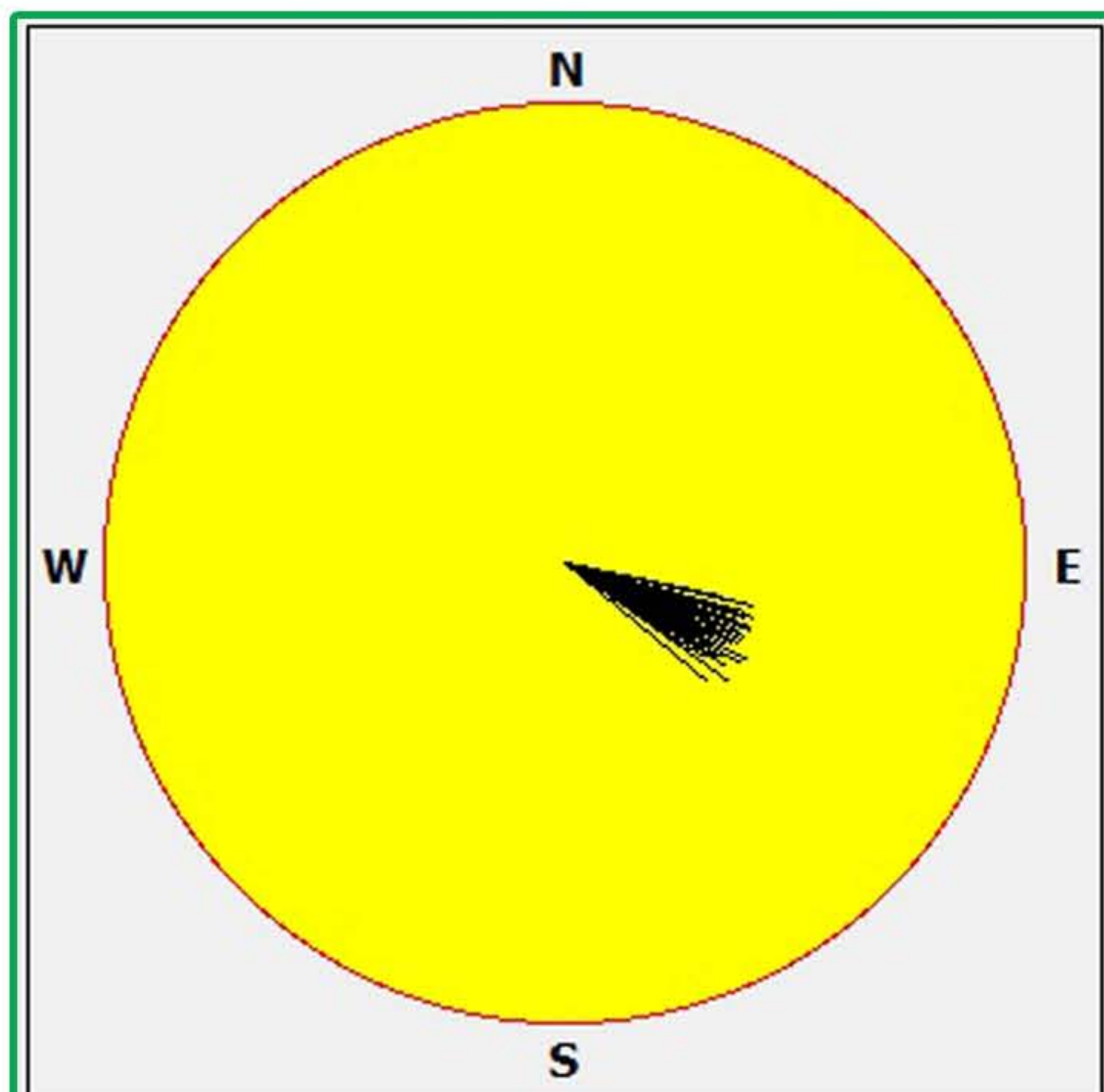
Any complaints or reports of nuisances are entered and drawn on to the map.

Clusters and serial complainers may be identified, and the validity of all reports assessed with the met. data at the time.

Wind Rose and Summary

A wind rose and statistical analysis illustrating the prevailing wind direction is provided.

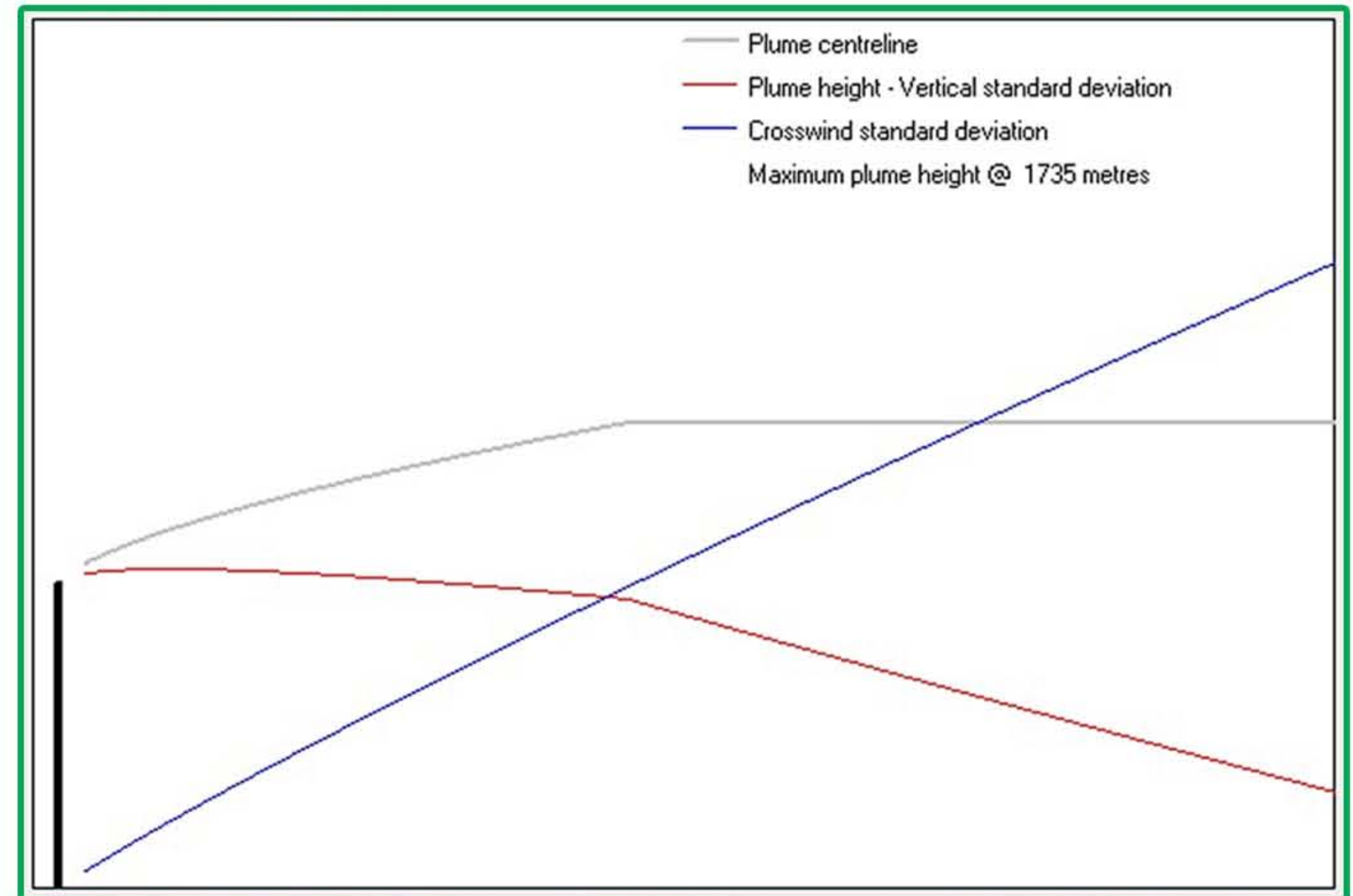
This is a graphical display and a spreadsheet style grid that divides the wind data into 16 direction segments, and 6 strength bands.



	0 - 2	2 - 4	4 - 6	6 - 8	8 - 10	> 10	Total
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.8	0.0	0.0	0.0	0.8
ESE	0.0	0.0	46.3	44.6	0.8	0.0	91.7
SE	0.0	0.0	5.0	2.5	0.0	0.0	7.4
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	52.1	47.1	0.8	0.0	

Plume trajectory

The plume trajectory is estimated from knowledge of the exhaust gas temperature, volume and velocity at the chimney exit, alongside the meteorological data. This trajectory is estimated using established equations for buoyant plumes in unstable atmospheres.



Specification

- Full colour dispersion estimates overlaid on to local area maps (640x640 pixels).
- Environmental report data entry with grid reference data.
- Wind rose and statistical analysis.
- Can display in $\mu\text{g}/\text{m}^3$ or relative impact (selectable).
- Exhaust plume trajectory display.
- Operates in parallel with CEMSuite for both real time and historic data.
- Uses US EPA guidelines for dispersion calculation.
- Adjusts for local topography with separate horizontal and vertical dispersion factors.