

CBRNE WEB™

Lakes Environmental provides proven off-the-shelf Chemical, Biological, Radiological, Nuclear & Explosive (CBRNE) modeling and forecast solutions. Our CBRNE Web focus on integrating the underlying state-of-science models within existing CBRNE command and control systems.

With expertise spanning a wide range of interrelated scientific disciplines, Lakes Environmental specializes in optimizing the underlying models that comprise today's state-of-the-science CBRNE modeling systems used throughout the world by intelligence, defense, emergency response, medical, security, and industrial clients.

Effective CBRNE modeling requires scientific expertise in many disciplines that comprise today's state-of-the-science CBRNE systems. Lakes Environmental specializes in the following key areas to characterize, assess, model, predict and measure the full range of CBRNE threats:

1. Threat Characterization (CBRNE Inventory and Release Scenarios)
2. Air Dispersion and Deposition Models
3. Weather Forecast and Meteorological Models
4. Environmental Media Fate and Transport Models
5. Human Exposure Models

CBRNE Web provides highly accurate and comprehensive insights into questions that have until now been difficult or impossible to answer regarding detection, tracking, forecasting, and modeling CBRNE events. Due to the unique and destructive power CBRNE events pose, we remain dedicated to solving complex technical and operational CBRNE challenges that demand

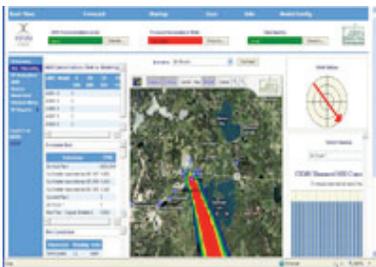
high-resolution real-time and forecast modeling capabilities.

CBRNE Web supports standards and directives (e.g., APT 45(D)) and replaces out outdated models with state-of-the-science capabilities. For example, recent improvements in high resolution 4D weather forecasting and integration of dedicated satellite feeds and field sensor networks can significantly enhance CBRNE modeling capabilities including real-time and forecast based predictions.

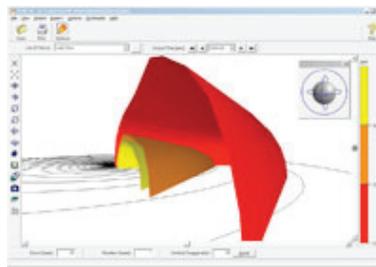
“ CBRNE Web supports standards and directives & replaces outdated models with state-of-the-science capabilities. ”

We designed our advanced CBRNE Web to integrate with todays most advanced CBRNE sensor networks which provide necessary model inputs for performing accurate threat characterization, real-time and forecast weather modeling, air dispersion and deposition modeling, and human health exposure assessment.

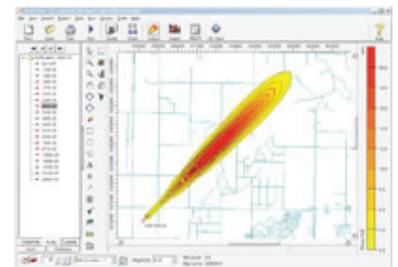
Our clients can easily leverage Lakes Environmental's off the shelf capabilities to quickly meet their CBRNE response charter, which often impose budget and schedule constraints that we can accommodate. In addition to our turn key off-theshelf solutions, many clients also rely on our technical experts and scientific development team to optimize performance of their existing command and control systems or deliver all-new highly customized CBRNE systems designed for specific threat reduction, avoidance and emergency response applications.



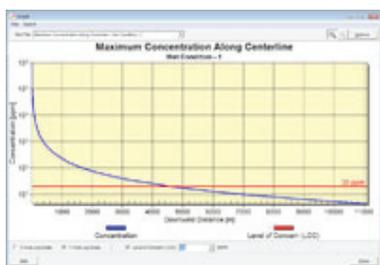
REAL-TIME MODELLING



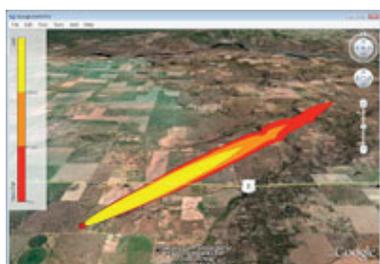
3D VISUALIZATION



INTEGRATED GRAPHICAL USER INTEFACE



**MAXIMUM
CONCENTRATION GRAPHS**



**EXPORT TO GOOGLE
EARTH**

We have extensive experience working with today's most advanced CBRNE systems and underlying models including weather forecast models such as WRF and state of the science air dispersion models such as SCIPUFF which is part of the Hazardous Prediction and Assessment Capability (HPAC) model used by many US government agencies to model CBRNE scenarios. In fact we have ongoing partnerships with the companies directly responsible for developing WRF and SCIPUFF models; which further compliments our capabilities. Additionally we have extensive experience working with the diverse real-time and forecast meteorological data formats available to military and government response agencies worldwide.

We specialize in solving complex technical and operational CBRNE challenges that demand high-resolution real-time and forecast modeling capabilities. The need to forecast the consequences of an CBRNE emergency 24-72 hours into the future is often overlooked entirely or not effectively implemented to achieve maximum benefit in current CBRNE systems. In the event of a CBRNE event, response time and the ability to direct response assets and mitigation efforts is critical to saving lives and maintaining command and control. Forecasting makes this possible by predicting the magnitude and geospatial extent resulting from the CBRNE emergency. This information is necessary to determine what emergency response action to take immediately and over the next 24, 28, and 72 hours to saves lives and protect emergency response assets once deployed.

CBRNE Web provides clients worldwide with powerful modeling packages for performing human health exposure risk assessment, consequence modeling, and hazard response prediction. Our human exposure modeling applications include tools for modeling food and water contamination by integrating fate and transport models including air, soil, water, sediment, and plant and animals pathways. These capabilities make it possible to developed risk-informed decisions considering direction and indirect exposure routes which are critical for monitoring food and water safety, which are often necessary after a CBRNE event.

Regardless of the project size, budget, and schedule Lakes Environmental relies on the following guiding principles:

1. Provide every client with best-in-class CBRNE modeling capabilities, services and support
2. Provide IT solutions that enable our clients to mitigate current and future CBRNE threats worldwide
3. Continually push state-of-the-science bounds incorporating the latest in computing capabilities, sensors, mathematical modeling techniques, and fidelity of model inputs and parameter characterization.