

∴ There is only one place to be in a chemical emergency...in control.

And that's where you'll be with **SAFER Real-Time®**



## SAFER Systems... the global leader in chemical emergency management.

In countless emergency situations over the last 25+ years, SAFER Systems' technology has proven itself effective at helping clients successfully manage chemical releases. SAFER Real-Time® and the support we provide with it has been relied upon by those who manufacture, process or store hazardous materials to save lives, protect communities, defend assets and mitigate monetary losses that could otherwise total in the hundreds of millions of dollars. This long standing dependability is why many of the largest, most sophisticated organizations in the world have chosen Real-Time for chemical emergency management.

### Rapid, Real-Time Data Collection & Reporting Eliminates Blind Spots & Guesswork.

Whether in a plant's command center or on the front line leading a response team, knowledge is power. The more you know, the better prepared you are to safely and efficiently take command of a chemical emergency. No other product on the market can match the speed, accuracy and comprehensive level of analysis and reporting provided by Real-Time. It provides real-time monitoring, 24/7. If a release is detected, alarms and prompts will automatically be triggered. The system then instantly aggregates real-time information from its gas and meteorological sensors as well as chemical and GIS databases. With blazing speed, sophisticated algorithms such as our patented Advanced Back Calculation (ABC) integrate and analyze this data, ensuring all factors are considered, including:

- Local weather, wind stability, direction and speed
- Source, rate, type and location of release
  - Gas, liquid or both
  - Ground level or elevated
  - Instantaneous, transient, continuous, two phase; fire & explosion
  - Stack vs. jet streams
- Chemical properties & composition
- Specialized chemical reactivity, including HF and TiCl<sub>4</sub>
- GIS Data
  - City Maps
  - Schools/Hospitals/City Agencies/Places of interest
- Terrain & Topography
  - How landscape impacts plume movement and dispersion based on site-specific conditions
- Composition of releases with multiple gases or liquids

The result is that within minutes you'll view accurate models and reports on the current and projected impact of toxic vapors within your facility and surrounding areas. It's the information you need to effectively assess risk, develop a plan, deploy resources and make the right decisions.



### Real-Time's Modularity & Suite of Features Ensure You Receive the Optimal Solution for Your Site.

After 25+ years and more than 500 installations worldwide, we have one consistent observation, which is no two organizations are alike even if they are in the same business. Variables include materials being handled, human capital, facility structure and layout, management style, command organization, crisis training, technology level, geography, terrain, climate, population density, shipping parameters and access to emergency resources, to name a few.

With so many independent factors, any truly effective solution must be customized to address each organization's specific set of considerations. Real-Time was designed with this in mind.

### Real-Time Takes Custom-Engineering & Support to a New Level.

Our process for addressing each client's needs is thorough, involving meticulous planning, engineering and testing by our product specialists. These seasoned professionals collaborate with your personnel, bringing extensive first-hand chemical emergency management experience to the process. The modularity and unrivaled feature set of Real-Time enables our engineers to configure the ideal solution for your specific needs and operating parameters. After installation, we conduct comprehensive training for those who will be using the system. We also offer world class support with technical experts available 24/7, whom you can call for routine advice or even guidance in an emergency. In addition, as a SAFER Systems customer, you are eligible to join our Support and Upgrade Services Program. This cost-effective, comprehensive program provides you with access to:

- Special training, group meetings and technology sessions for Users
- Software updates, fixes and feature improvements
- Remote desktop support (modeling, upgrades and much more)
- Full off-site backups of customer databases such as Map, GIS and Receptor

The result is a complete, best-in-class solution that integrates hardware, software and support in a manner that optimizes your company's ability to effectively predict and manage chemical emergencies. An important by-product of this is the heightened level of confidence and peace-of-mind enjoyed by SAFER Systems clients.



# It's more than protecting a company or its assets... It's about **quickly controlling** volatile situations so no harm comes to life.

## ∴ SAFER Real-Time® is Designed to Bring Calm, Confidence and Ease to the Process of Rapidly **Neutralizing a Dangerous Situation.**

Any release, small or large, of hazardous material is an emergency situation. Ensuring the safety of employees, the community and property becomes priority one. The size of the breach typically has a direct bearing on the intensity and complexity of the response. In these situations, when adrenaline is surging and emergency responders are scrambling, the most important factor to consider is the "human" one.

To us this means that the technology must be designed around how people will most intuitively want to use the tools in this physical and emotional setting. After all, solutions that require multiple manual procedures for the collection, analysis, reporting and sharing of data may perform OK in tests. However, when the danger and threat to life is real and every second counts, these solutions typically add tension and complexity to the process, while reducing response times. This is unacceptable and why ensuring ease of operation, especially when operators are under stress, is mission critical to our philosophy.

### Access to **Critical Data is Made Simple.**

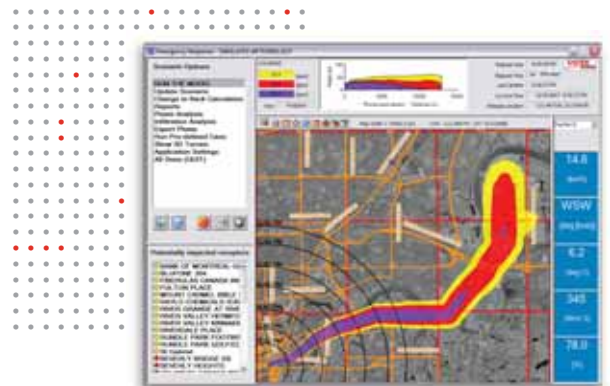
We have gone to great lengths to "hide" the sophistication and complexity of our systems. Most data aggregation and system functionality is automated, so all relevant data is assembled, analyzed, reported and visualized with a few mouse clicks. The ability to share or email up-to-date incident information is built-in and equally basic. The overall system design enables a wide variety of users, from lab techs and engineers to EOC personnel, to quickly learn how to effectively use it, even when faced with the stress of a chemical emergency.

### Complete **"One Screen Command"** Visualization

All the data in the world is useless if its scope and impact can't be quickly grasped. For this reason we've made it possible to take command with one computer screen. All primary data fields and graphics are displayed in an easy to view arrangement. Audible alarms and light indicators provide further prompts and intuitive guidance. More detailed reports and secondary data are never more than a click or two away. Personnel in other offices or remote locations can also be networked in, enabling them to view the situation in real-time on their screens.

### Advanced **"Plume-Centric"** Modeling

It's the most basic request from someone in charge of an incident when there is a significant release. They want to know where the plume is and its projected impact. Real-Time's advanced plume modeling functionality addresses this request better than any other product. It automatically collects and analyzes data from its gas sensors and other sources relating to the rate of release, weather, terrain, chemical properties and GIS. In turn, it uses these real-time data feeds to generate models of the plume's direction and concentrations that are self-validated for accuracy. The on-screen rendering of the plume model is equally impressive. Color-coding makes it easy to grasp critical data "at-a-glance." The graphics are also "Plume-Centric." The value of this becomes clear when comparing it to other plume modeling programs. They predominantly display the plume as a small dot on a large scale map that spans miles. When zooming in, the plume model loses resolution and pixelates, making it nearly impossible to see the exact boundaries of impact. In contrast, Real-Time automatically scales the map to the size and shape of the plume, making visibility of its current and projected impact boundaries very clear.



### Validated **Documentation** with Historical Archiving

Whether for documenting a full-scale release or analyzing the accuracy of an odor complaint, SAFER Systems technology has you covered. Our systems automatically collect, record and archive all the relevant meteorological and sensor data. This information can be used in legal proceedings to validate or refute the legitimacy of claims as well as to substantiate the rationale for emergency response actions when they are evaluated or reviewed after the fact.





**Real-time is Proven Effective in These Environments:**

- Petrochemical Manufacturing
- Chemical Storage & Transportation
- Plant Expansions/New Construction
- Smelting
- Pipelines
- Refineries
- Test Facilities
- Nuclear Reprocessing Facilities
- Pharmaceutical Manufacturing

**The Ease and Speed of Access to Accurate Real-Time Data Enables Critical Decisions to be Made Quickly & Reliably.**

- What is the source and rate of release?
- Will the release reach the community or industrial neighbors and at what concentration levels?
- Should you evacuate or shelter in place?
- Where can first responders be deployed safely?
- What is the best approach to the scene?
- Where should sampling occur?
- How will the weather and terrain impact the release?
- What roads should be closed?
- Which public venues and residential areas may be at risk?
- What are primary and secondary areas of concern?
- Will the emergency operations center be in the impact area?

**Add TRACE™ for the Ultimate Predictive Modeling Tool.**

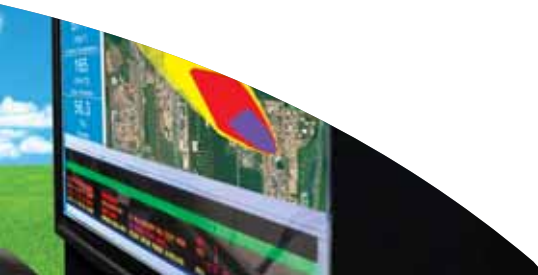
TRACE™ is an engineering-grade modeling application that is used for detailed consequence analysis of chemical dispersion, fire, explosion, and particulate modeling. It complements Real-Time with powerful analysis tools that perform chemical hazard risk assessment, prediction, and evaluation.

**Real-time is the Right Choice for the Well-being of Your Company, Your Employees and Your Community.**

There is no better way to be prepared to control a chemical emergency. Real-Time provides a 24 hour a day response tool that's always ready to help you make the right decisions before, during and after an incident. It fits nicely into incident command systems and has the added feature of multi-language support. It truly is the best-in-class solution for effective:

- Emergency Response Planning & Management
- Hazard Assessment
- Modeling of Accidental & Intentional Releases
- Educational Purposes
- Risk Management Planning
- Regulatory Modeling & Reporting Requirements
- Validation of Claims

We believe the exceptional caliber of our clients says a lot about us.



# The **Version 10** release of Real-Time has made this **Best-in-Class** product even better.

We are a uniquely focused organization, dedicated solely to producing chemical emergency management solutions that define the industry standard. Version 10 of Real-Time validates this. It brings to market an unrivaled set of innovative features unavailable in any other single solution. New advances include:

## **Source Area Locator™ (patent pending)**

In some cases, emergency responders are aware there is a release but aren't sure where it's coming from. Our Source Area Locator solves this by using advanced algorithms to analyze real-time meteorological data in conjunction with chemical release data being fed in by gas sensors. Similar to how our system uses this data to project the path of a plume moving forward, it can do the same in reverse to identify the source area of the release. This information puts release neutralization and employee and venue protection on the fast track. Those in charge will instantly have the knowledge to determine ideal evacuation routes, shelter options and resource deployment.

## **Open Path Technology**

Real-Time can now fully integrate data feeds from Open Path sensors. This new functionality allows our system to define the chemical composition of any gaseous stream, even when it's composed of multiple components. Real-Time can also determine the stream's rate of release, using ABC Open Path (patent pending). In addition, our Open Path system is highly sensitive, measuring chemical concentrations across a 200 meter open path of air in the ppb levels. This technology is an excellent proactive protection measure, as it monitors 24/7, enabling alarms to be triggered when defined levels are exceeded. It even adds a layer of legal protection, since all historical data Real-Time collects from the Open Path sensors is archived. So should a legal claim ever be made, Real-Time can provide legal validation even months after the fact on whether a release did occur and, if so, to what extent.

## **Internet Weather**

Real-Time now offers the ability to incorporate streaming weather feeds from around the world via Weatherbug® Professional. This provides an effective means to manage events that are outside the scope of fixed met stations. Our new Internet Weather technology also fills a critical gap for national, state and county responders after they get the call and are travelling to the scene. It helps with early analysis, which ensures they don't drive into a toxic area and enables resource staging and deployment decisions to be made en route for a faster, more effective response.

## **Google Earth/Google Maps**

Through a new interface, Real-Time can display a geocoded plume within the mapping and GIS tools offered by Google™. This creates simple and accurate visualization of an event that can be shared via email or through a live network connection. Multiple corporate and/or emergency responders can then share and work from accurate information, accessible from basic, widely used tools.

## **OPC Support**

Object Linking and Embedding for Process Control allows you to pull sensor data and meteorological information from OPC servers. This improves the ease and timeliness of access to information that is valuable when responding to or evaluating an incident.

## **Our customers have good things to say...**

"Just watch what happens. You can see how the system models the plume's dispersion across the site. With a few keystrokes, the multi-colored cloud of gas stops in mid-air...or mid-pixel, in this case. SAFER Real-Time® gives us a real-time dispersion scenario on our screens within seconds of an incident occurring."

— **Don Watson, Dow Chemical Canada  
Emergency Services and Security**

"DuPont, Sabine River has utilized SAFER Systems as a key part of our Emergency Response Program and management of preparedness since 1988. We are proud that we can respond to an alarm within two (2) minutes with initial downwind assessments immediately communicated to our plant staff."

— **Richard Hicks, DuPont Chemical,  
Orange, Texas**

"CTEH responds to hazardous events that occur at anytime and anywhere across North America. SAFER Systems helps us overcome this significant logistics challenge. We utilize SAFER Systems as an essential part of our event management strategy, primarily for consequence communication, monitoring strategies, and event documentation with incident commanders and Government agencies."

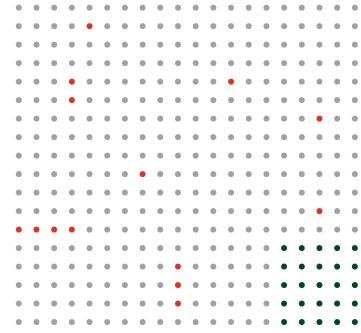
— **Dr. Glenn Millner, CTEH, Little Rock, Arkansas**

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