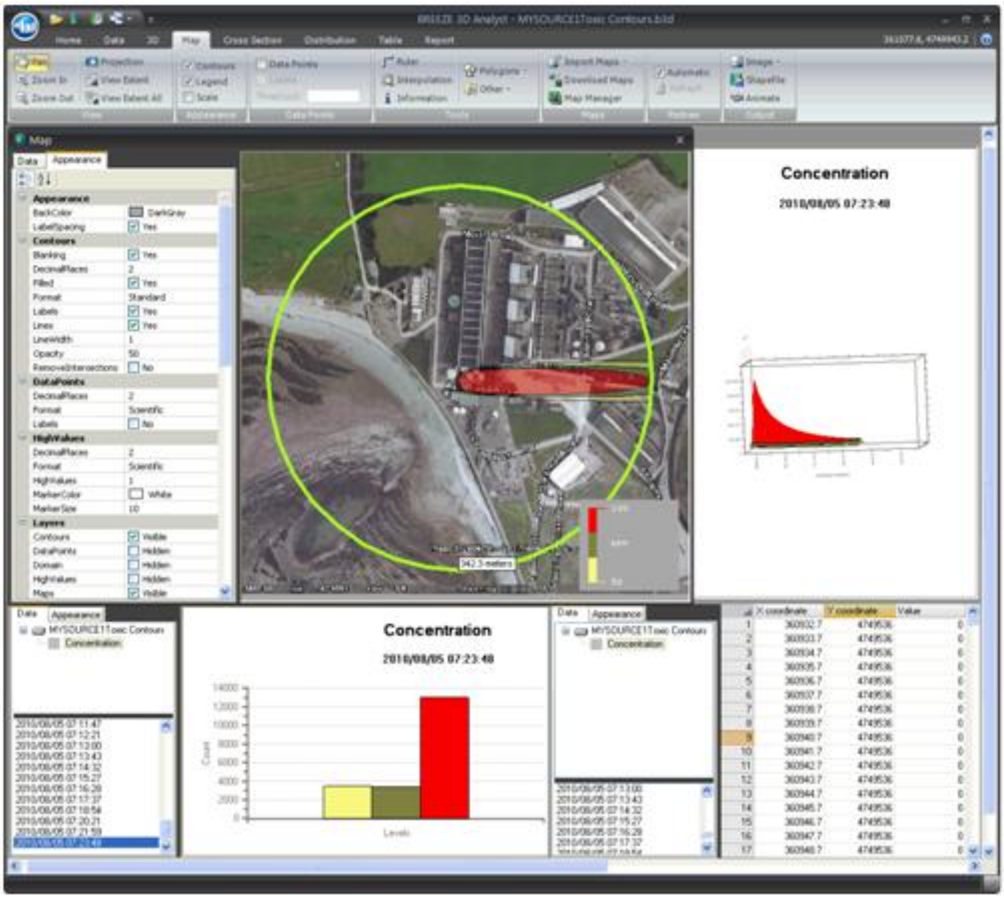
Incident Analyst 1.1

Incident Analyst, the successor to the BREEZE HAZ suites, is the all-new software program designed to predict the potential toxic, fire, and explosion impacts of chemical releases.

With the retirement of BREEZE HAZ, our developers have been hard at work to bring you a state of the art software program for modeling hazardous releases. Incident Analyst incorporates a suite of industry standard neutrally buoyant and dense toxic gas dispersion models to predict chemical concentration and flammability levels; thermal radiation fire models to predict radiation fluxes and temperature rise; and explosion models to predict blast force overpressures. Read the tabs below for information on the models built into Incident Analyst. These models include:

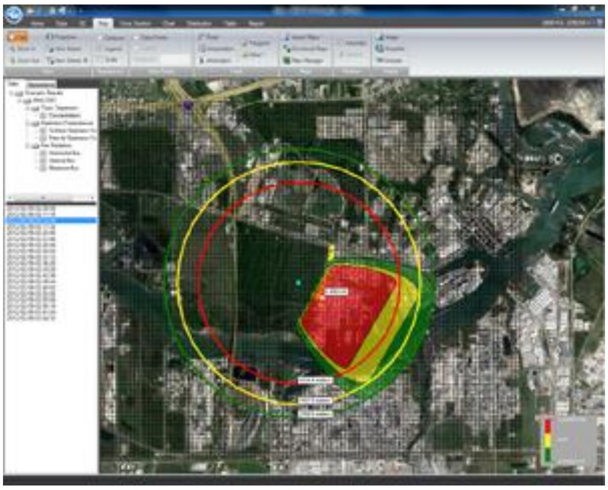
- DEGADIS
- SLAB
- INPUFF
- AFTOX
- Confined & Unconfined Pool Fire
- BLEVE
- U.S. Army TNT Equivalency
- U.K. HSE TNT Equivalency
- TNO Multi-Energy
- Baker-Strehlow



In addition to the technical capabilities of BREEZE Incident Analyst, the product is easy to use and quick to run. An intuitive interface guides the user through entering required and optional inputs associated with a potential chemical release (e.g. size and position of tank rupture, shape of storage tank, spill volume, and existence of an impoundment basin), and selecting the appropriate algorithms. Results are provided in both tabular and graphical formats including 2D contour, 3D volume, and time-series chart.

New Realese 1.1 Feature List:

- The Vertical Jet Fire model has been added and allows for the simulation of fire from pipeline leaks and ruptures.
- Source Term Wizard has been significantly enhanced and includes:
  - New elevated tank and continuous release stack source types.
  - Quick and easy editing/modification of existing sources.
  - Viewing of calculations and results from new and existing sources.
  - Dike size and containment area calculations for tanks and pipes.



- A new "copy source" button was added to quickly duplicate existing sources.
- Additional user-specified units are now displayed in textual and graphical results.
- Results exported to Google Earth TM now include user-specified units in the legend.
- The chemical database now includes a search field to simplify chemical selection.
- Model file association with BREEZE Incident Analyst: simply double-click to open.
- Additional diagnostic messages to assist users with proper model setup.
- Implementation of various bug fixes and minor enhancements.

Features in BREEZE Incident Analyst include:

- Models key hazards including toxicity, thermal radiation (heat), and overpressure (explosion blast force) related to chemical releases that result in toxic gas dispersion, fires, and/or explosions.
- Includes options to model the dispersion of both neutrally buoyant and dense gas plumes.
- Has the ability to model **multiple sources** simultaneously.
- Easy-to-use design includes a step-by-step source term wizard for easy model set up and execution.
- Users can create and use start up templates which allows for efficient and successful operation during high-pressure situations.
- Receptor/target locations can be user defined and drawn over a base map (AutoCAD DXF, ERSI Shapefile, or raster image) using a mouse for precise placement.
- Runs quickly on standard personal computers using Microsoft Windows XP, Vista, or 7 operating systems.
- Operator error is greatly minimized via a clear list of model run warnings and fatal errors along with on-screen help that offers quick access to explanations of available features and options.
- And many more!

Dispersion Models

BREEZE Incident Analyst provides a wide range of dispersion models for analyzing accidental releases of toxic chemicals. The program is ideal for emergency response and planning as well as modeling accidental release scenarios for regulatory programs like the U.S. EPA's Risk Management Program (RMP).

DEGADIS

DEGADIS is a dense gas dispersion model that estimates concentrations downwind from an accidental chemical release where the dispersing toxic or flammable substance is initially heavier than air.

SLAB

SLAB is a dense-gas dispersion model used to estimate pollutant concentrations downwind from an accidental chemical release that is heavier than air.

INPUFF

INPUFF is a Gaussian puff model that simulates the atmospheric dispersion of neutrally buoyant or buoyant chemical releases. The model accounts for point sources and a release duration that is either finite or continuous.

AFTOX

AFTOX is a Gaussian puff/plume dispersion model that estimates concentrations downwind from accidental chemical releases where the dispersing plume has the same density as air.

Fire Models

- Confined Pool Fire was originally developed for the Gas Research Institute (GRI) and models a fire that occurs when liquid is ignited in a confined area such as a dike or a tank. The dike may be circular or rectangular. The model calculates the distance to various radiation levels specified by the user and also allows for the calculation of the dynamic temperature rise of a nearby target.
- Unconfined Pool Fire was originally developed for the GRI and models a fire that occurs when an unconfined spreading pool of liquefied fuel gas ignites. The model calculates the distance to various radiation levels specified by the user (e.g, the 5 kW/m2 level specified by the U.S. EPA in the 112(r) RMP regulations, or the radiant flux levels specified in the U.S. federal standard 49 CFR 193.2057 for LNG facilities) and calculates the radiation flux as a function of time at a given distance as the pool spreads.
- BLEVE was originally developed for the GRI and models a fire that may result from the leak or rupture of a pipeline containing a compressed or liquefied gas under pressure. The model calculates the distance to various radiation levels specified by the user and can calculate the dimensions of a high velocity jet flame ensuing from a ruptured pipeline.

Explosion Models

If a quantity of flammable material is released, it will mix with the air and may result in a flammable vapor cloud. If this flammable vapor cloud finds an ignition source a vapor cloud explosion may result. Two main methodologies exist for modeling the explosion resulting from a vapor cloud explosion:

- TNT Equivalency methods
- Methods based on the fuel-air charge blast

The explosion models include the following widely accepted approaches:

- U.S. Army TNT Equivalency was based on the work of the U.S. Army. This model uses a proportional relationship between the flammable mass in the cloud and an equivalent weight of TNT and assumes that the entire flammable mass is involved in the explosion and that the explosion is centered at a single location. The model uses one of two blast curves, depending upon whether the explosion being modeled is a surface burst or a free-air burst.
- U.K. HSE TNT Equivalency was based on the work of the U.K. Health and Safety Executive (HSE). This model uses a proportional relationship between the flammable mass in the cloud and an equivalent weight of TNT. It assumes that the entire flammable mass is involved in the explosion and that the explosion is centered at a single location.
- TNO Multi-Energy treats the explosive potential of the vapor cloud as a corresponding number of equivalent fuel-air charges. The vapor cloud explosion is modeled as a series of sub-blasts with each sub-blast corresponding to a potential blast source within the cloud.
- Baker-Strehlow was based on the work of Baker and Strehlow and takes into account the variability of the blast strength by expressing the explosion as a number of fuel-air charges, each with individual characteristics.