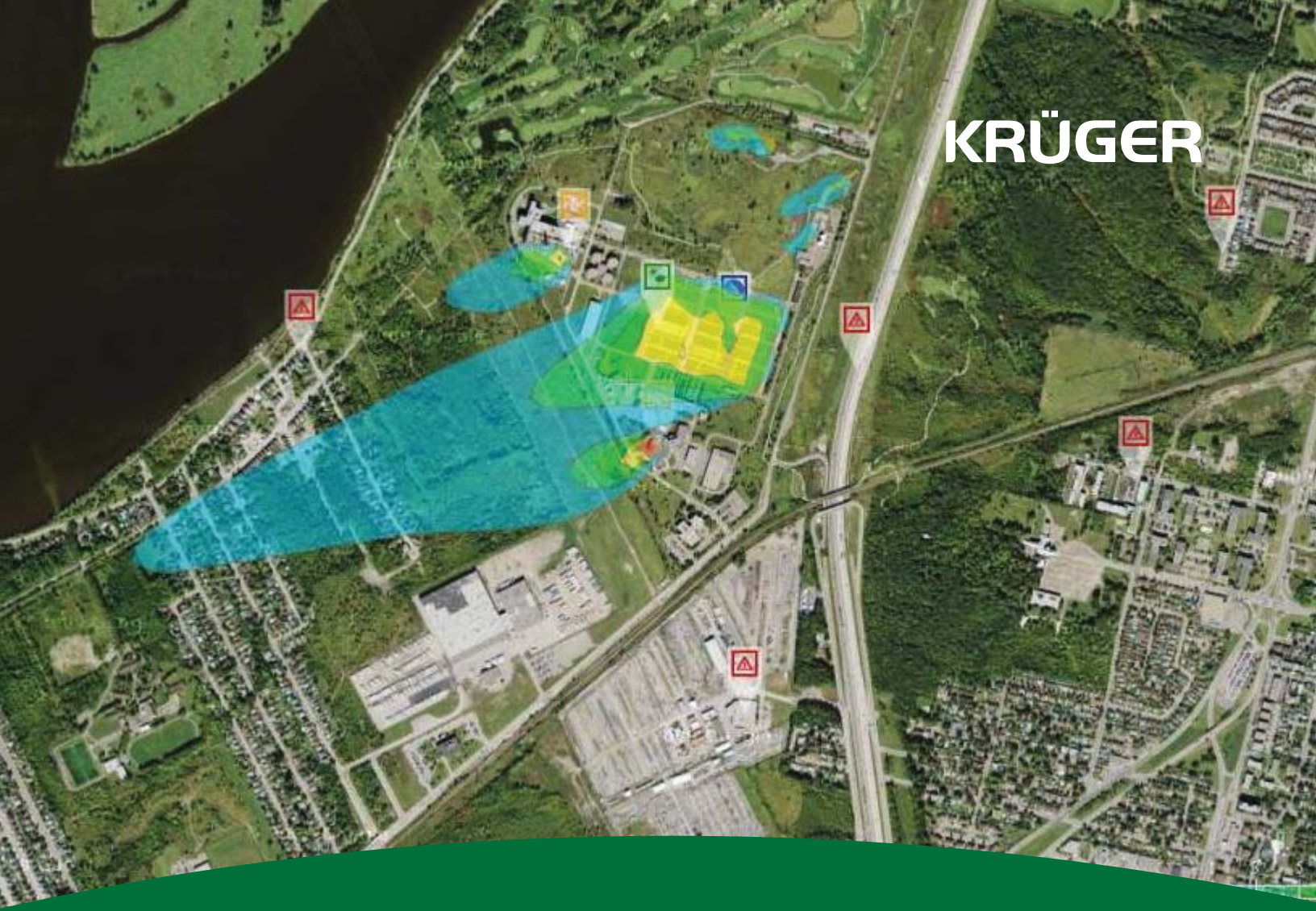


KRÜGER

OdoWatch®
Odor Monitoring

VEOLIA
WATER
Solutions & Technologies

OdoWatch®
Odor Monitoring

Kruger's OdoWatch® System provides treatment plants early detection of odors, allowing for greater efficiency of operations management and a timely response to potential odor issues. OdoWatch displays odors generated in real time, thus making the plant neighborhood friendly by avoiding odor problems offsite within the community.

eNose with weather tower

Continuous, Real-time Odor Monitoring

OdoWatch continuously detects, measures and monitors odors at the treatment site. This technology, the first of its kind, uses electronic sensors to detect odors much like a human nose. Unlike other technologies that measure the presence of odor-causing compounds, the electronic noses (eNoses) quantify odors into odor units and use that information, along with meteorological data, to indicate to plant operators when odors are becoming a problem. By performing real-time air dispersion modeling, the OdoWatch system can complete in minutes the work of an engineering odor evaluation that typically would take months of costly data collection and interpretation.

Advantages On-Site and Within the Community

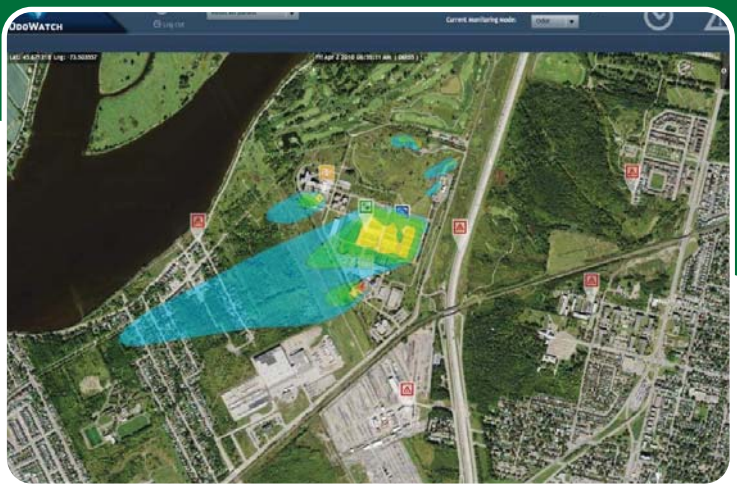
- Right-size odor abatement equipment
- Provides information to prioritize capital projects for odor control
- Optimizes odor neutralizing chemical use
- Facilitates community relations
- Eliminates current on-site sampling and measurement programs, saving time of operations staff
- Demonstrates good corporate citizenship
- Creates an effective communication tool between plant and community

Providing Information for Efficient Operations

- Automated central monitoring of odor emissions
- Display of odor concentration (intensity)
- Display of real-time weather data
- Odor atmospheric dispersion modeling
- 24/7 real-time odor plume display
- Programmable odor alerts at grid points selected by the user (Alert Point)
- Data log, odor dispersion history (archive)

OdoWatch® System Components

- 1 or more Electronic Nose(s) (eNose)
- Weather tower
- Pre-configured computer
- Communication system



Odor Plume Display

eNose monitoring clarifier tanks

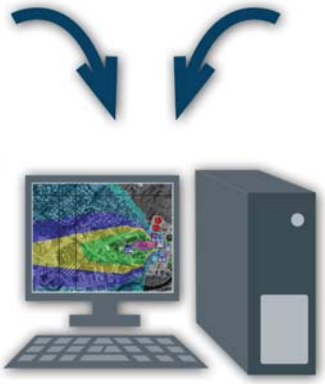
OdoWatch System Operation

The eNoses are positioned near the potential odor sources and continuously collect data. The odor data from the eNoses and the weather data from the weather tower are sent to the OdoWatch software, which models the atmospheric dispersion and displays the site's odor plume. With the odor plume being color-coded, facility staff are able to identify quickly on the map what region is being impacted by odor and to what magnitude.

eNose

Weather Station

The weather tower is equipped for wireless transmission of weather data to the Central Control Unit (CCU) on the same frequency as the eNoses.



Central Control Unit

Odor Plume Display

The CCU is a computer that hosts the OdoWatch® operating software and is equipped with a wireless link. Its database acts as an archive for future reference in case of odor complaints by the public, allowing the plant to easily reference past data if needed. OdoWatch provides automatic reports and issues alerts when preset odor thresholds are exceeded.

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