

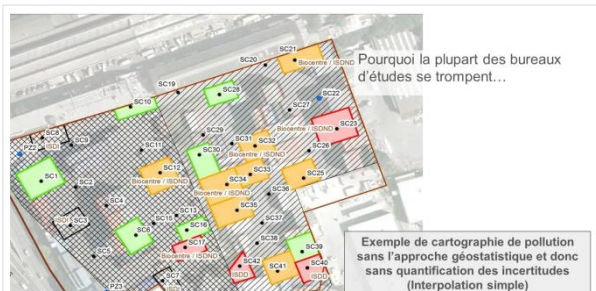
CLIENT STORY – DEKRA Industrial FRANCE

One activity of Dekra group, the European leader in inspection and certification in the construction, the industry, the environment and the transportation sectors, is to diagnose and assess the environmental situation of a site. It is within this framework that DEKRA Industrial implements geostatistics since 2012.

Problematics

"Our work is to provide our clients with the elements of decision they need to prepare site management plans for future remediation. Before we decided to include geostatistical approach in our projects, we were used to produce contamination maps based on very simple interpolation methods and empirical calculations. We needed **a rational solution** which enabled us **to justify undoubtedly our conclusions.**"

National Technical Manager, Polluted Sites and Soils at Dekra Industrial France, Damien Faisan explained.



Example of a contamination map without the geostatistical approach, not much realistic.

Solution

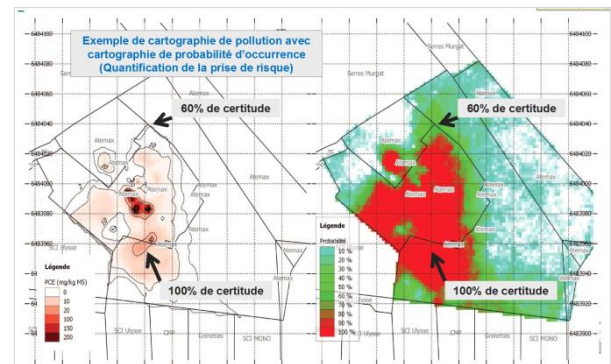
Damien Faisan was already convinced of the relevance of geostatistics to answer its needs of rationality.

He chose the software solution Kartotrak because, he said, it is **an easy to learn and to use software** which **perfectly works together with the GIS** used at Dekra Industrial France in their studies.

Thus, Kartotrak lets his team:

- **Compile**, clean and homogenize data;
- **Map contamination in a more detailed and realistic way**, geostatistics (and interpolation by kriging) allowing to take into account the spatial behavior of the pollutant(s).
- **Establish probability maps** indicating where it is more certain to find the expected level of pollution;
- **Quantify the polluted volumes** with the associated uncertainties;

- **Display the contamination models** and surveys in the same 2D or 3D view.

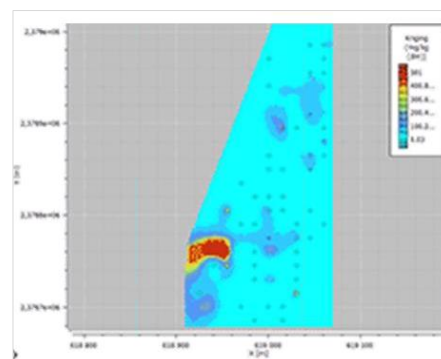


Example of a probability map indicating zones where the certainty to find the estimated level of pollution is the highest.

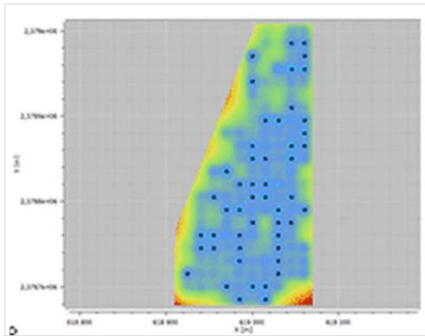
Results

Identification of hot problems

Kartotrak delivers maps which immediately allow identifying the most polluted zones or the much less sampled.



Example of contamination map estimated by kriging.



In Kartotrak, the estimated map by kriging comes with a map displaying the local level of uncertainty on the estimated value. The uncertainty of the data points is increasing with the distance (in green).

Perspectives

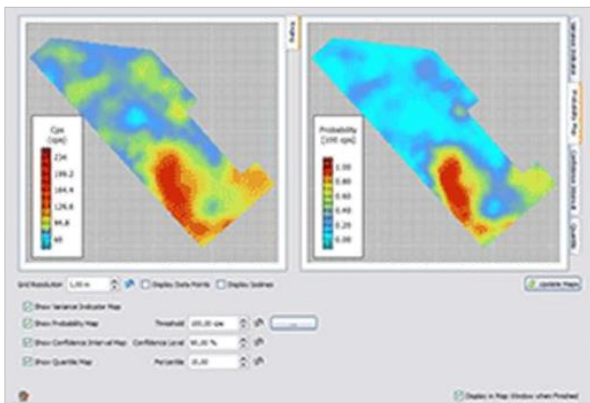
At Dekra Industrial, Kartotrak is today used for projects with high stakes and for which the need to secure prescriptions is essential. Nevertheless, the methodology related to site studies is in constant evolution, this means that the use of geostatistics in the projects will tend to expand.

Financial risks control

Because the calculated polluted volumes are systematically associated with a level of uncertainty, Kartotrak enables to **assess the margin of error associated to the remediation budget and to secure it.**

Decision based on sound elements

Kartotrak allows Dekra Industrial to provide their clients with probability maps of occurrence of a given level of pollution. Thus, decisions are fully informed.



Example of (1) a site contamination mapping by kriging, (2) mapping of the probability of contamination.

With geostatistics, results obtained are based on opposable scientific basis, which makes possible any counter-expertise.

Better communication with the client

« 2D and 3D maps are an unequalled communication tool. **Our clients are able to visualize future work at first glance!**» Damien Faisan concludes.

About Kartotrak



Kartotrak® is an integrated software solution for contaminated site characterization. Kartotrak allows sampling design optimization, precise contaminant mapping and contaminated soil volume quantification with an efficient risk assessment. The software has been developed in partnership with CEA.



Geovariances
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