

METALEUROP Nord (France) – 2004 & 2005 Stabilization / Inertization of hazardous industrial waste at an orphan site

Main contractor	SITA AGORA
Works carried out by.....	INERTEC
Volume treated	3620 t
Duration of project	4 months

Introduction

In January 2003, METALEUROP Nord's lead and zinc smelting plant abruptly ceased its activities, leaving many types of hazardous waste (process residues, waste from its activities, etc.) over an area of approximately fifty hectares. SITA AGORA, the organization dedicated to dismantling the site and rendering it safe, entrusted to INERTEC the task of treating the hazardous waste in order that it could be stored in the site's secure cells.



Initial view of the site

Issues

The method of treating the site's residual waste was developed specifically to respond to the following issues:

1. The diversity and toxicity of the various types of waste: aggregates, powders, sludge with varying levels of moisture content. The pollutants found are the result of a combination of arsenic, antimony, zinc, lead and cadmium;
2. Dispersion of waste heaps: the waste is dispersed throughout the entire site;
3. The need to recover the treated waste: the storage cell was only finished after the treatment phase ended. The stabilized waste

had to be left and then recovered when the cell was ready for use;

4. The fact that this is a sensitive project being monitored by both the authorities and the media.



Mobile residue treatment unit

Treatment solution proposed by INERTEC

Taking the above issues into account, INERTEC developed a method of treatment specific to the site in terms of stabilization / neutralization as well as implementation:

Treatment: the formulae developed involve a selection of reagents that ensure stabilization / neutralization treatment, whatever the source or typology of the waste encountered. The objectives targeted were of 2 types:

- **physical:** the production of granules of treated waste which can be easily recovered for the final transfer into the cells.
- **chemical:** stabilization of heavy metals in accordance with acceptance criteria regarding storage cells as defined in the relevant bylaw and after lixiviation in accordance with French standards NF X30402-2.

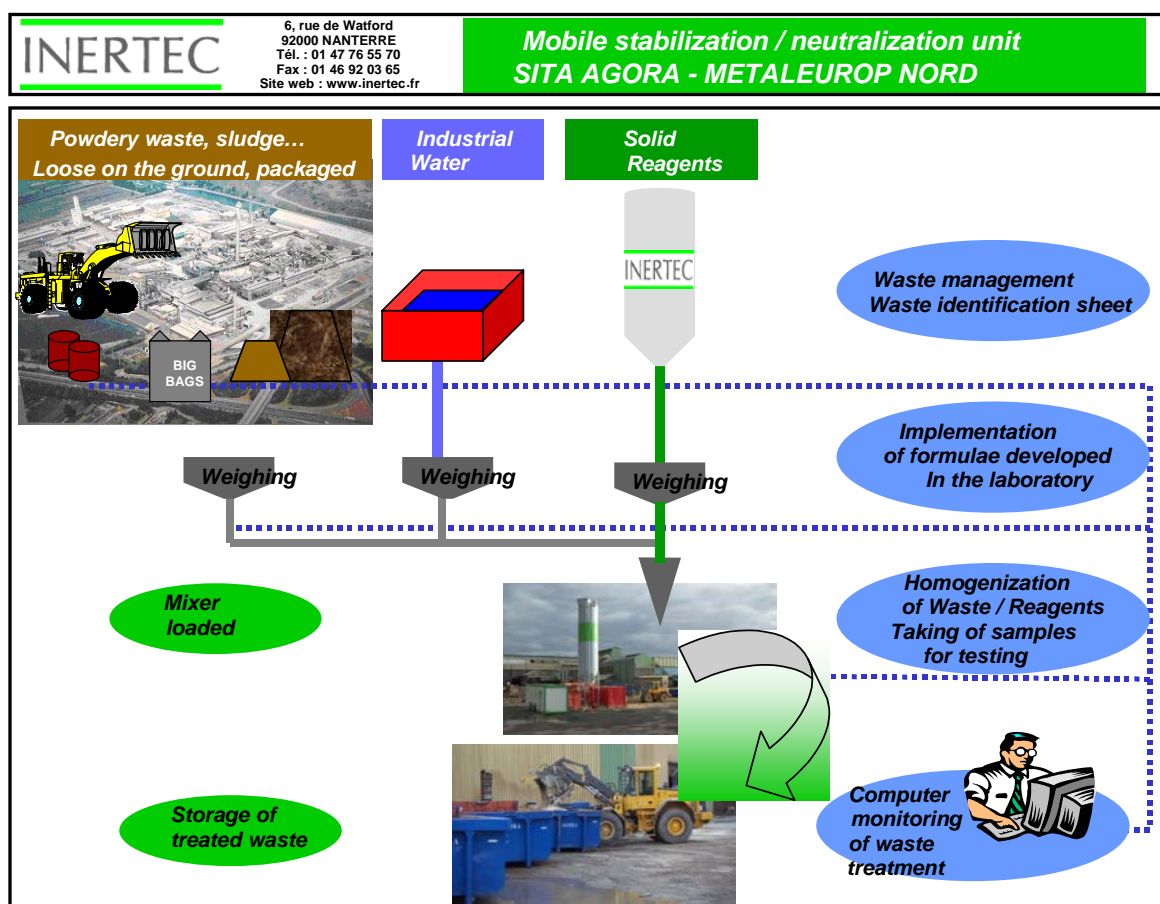
Implementation and results

Implementation: a mobile unit was specially developed and installed on site. The waste and treatment reagents are homogenized in a mixer mounted on a mobile loader capable of collecting the waste on the site and emptying the stabilized mixture into the temporary storage zone. Due to the reduction in the number of transfers of waste, the risks due to toxic dust emissions are limited.

The entire project was carried out over 4 months at an average rate of over 50 T/day. Samples of treated material were regularly taken from the mixer outlet, listed and tested in the INERTEC laboratory in order to check the effectiveness of the treatment; duplicates were kept on site for contradictory testing if necessary.

Safety: Particular attention has been paid to safety equipment on the site and the operators have been monitored medically for the entire duration of these activities.

After 28 days, tests on the eluates confirmed that the polluting elements had been stabilized and the allowable thresholds for storage cells observed.



Conclusion

INERTEC has actively participated in rendering the METALEUROP Nord site safe by developing a tool and a treatment methodology capable of adapting to the various pollutants on the site whilst respecting obligations terms of progressing the renovation project. Using the mobile unit has made it possible to limit the number of transfers and therefore the dispersion of toxic dust affecting the operators and into the atmosphere generally.