

*Louvain-La-Neuve, Belgium  
September 29<sup>th</sup> 2006*

## **Carmeuse innovates in the treatment of urban waste water sludge. The environmental friendly process is based on the implementation of a new product : delayed reactivity lime CODECAL®.**

### **Recycling of waste water sludge : a great challenge**

The waste water treatment plants in Wallonia (B) produce a yearly volume of 112.000t/a of sludge, i.e. 28.000t/a of dry solid (DS). This volume should increase to 250.000t/a by 2010-2015, after the start-up of new waste water treatment units.

Recycling of these matters under acceptable environmental conditions is a constant challenge for the authorities. Currently, sludge is either dumped, incinerated or used in agriculture.



Waste water specialists observing perfect conditioned sludge.

Dumping of sludge, which represented 37 % in 2001, has decreased to only 6 % in 2005. Further to the European regulations on waste, dumping will be prohibited by 2010

Incineration is a costly process causing CO<sub>2</sub> emissions, adding to the green house effect and the global warming of our planet.

Presently, 35% of the sludge produced is recycled in agriculture, which is a process favoured by Walloon authorities and by the European Commission as well. There is a clear willingness to further extend this recycling process to 70% of the sludge volume.

### **Agricultural recycling presents many advantages**

Agricultural recycling of sludge presents the following advantages when properly hygenized and processed to guarantee total destruction of pathogenic agents and bad smell, and when conditioned so as to allow easy storage, transportation and land spreading :

- it is the most cost-efficient solution (15 €/T compared to 100 €/T for dumping and 45-60 €/T for incineration in Wallonia)
- the process allows recycling of organic matter in our soils, which show a systematic decrease of OM and consequently decrease of fertility. The more, limed sludge has fertilizing properties (N, P, K, CaO, Mg).
- this solution enables to trap CO<sub>2</sub> into the soil and avoids its emission into the atmosphere
- in the frame of sustainable development, agricultural recycling enables the re-use of non-renewable resources that are contained in the sludge, such as P, K, N

Codecal sludge mixing mobile unit.



## Lime treatment of sludge is a current practice

Conditioning and hygienization of waste water sludge with lime is currently used as a proven method. Lime enables the coagulation and the flocculation of sludge before dewatering. When added after filtration, lime is used to hygienise sludge : it kills pathogenic agents and bad smells through pH and temperature increase.

## A new Carmeuse CODECAL® process for enhanced dewatering efficiency and improved safety conditions in water treatment

Carmeuse has developed a new patented quicklime quality called **CODECAL®**. The main characteristics of this product is its slaking reaction delay when added to liquid sludge : this means that it is now possible, in the same run, to both condition sludge **before** dewatering and hygienize it **after** filtration.

When added to sludge before dewatering, **CODECAL®** immediately increases pH but the heat reaction occurs only after filtration or centrifugation. This enables :

- a much simplified addition of quicklime, directly into the liquid sludge
- savings as regards the use of chemicals (lime, poly-electrolytes, ...)
- an improved lime/sludge mix, i.e. a guaranteed hygienization
- the production of sludge with improved dryness and structure.

Carmeuse launched this innovating process in Belgium on September 14th, 2006, at the urban waste water plant in Waterloo (B) managed by IBW. This demonstration event was organized to convince the water treatment specialists of Wallonia of the advantages of this new development.



Waste water specialists attending the CODECAL conference

With this new **CODECAL®** lime quality, Carmeuse will contribute, in all the countries where it is present, to the use of lime in waste water treatment and for a safe recycling in agriculture.

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*Carmeuse Group is a worldwide leader in the extraction and processing of high calcium limestone and dolomitic stone into lime and lime-related products for industrial and commercial customers. Lime is used in multiple aspects of our everyday life. (steel, construction, agro-food, paper, chemicals, plastics, carpets, paints, pollution control, water treatment, ...)*

*Carmeuse is present in about 80 sites across Western Europe (in Italy, Belgium, the Scandinavian countries, France and the Netherlands and Estonia), Central and Eastern Europe (Slovakia, the Czech Republic, Hungary, Romania and Turkey) and North America (the United States and Canada) and Africa (Ghana).*

*Total consolidated group net turnover amounted to 850 million Euros in 2005.*

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Sandra Vandorpe explains the advantages of CODECAL.