

The Technology

Responsible
Resourced
Solutions
Provider

ODOUR MITIGATION

EnvEnt are specialists in innovative and effective odour control techniques across a diversity of industries.

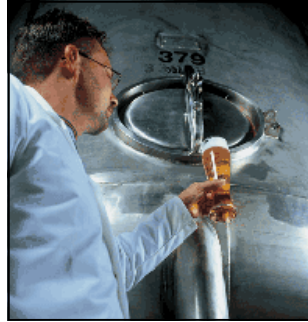
The technology is designed and applied around a proprietary oxidising product that specifically seeks out, neutralises and destroys the molecules that cause unwanted odours

The product will preferentially oxidise hydrogen sulphide, mercaptans and other reduced sulphur compounds - all of which are the most frequent causes of unpleasant and unwanted odours.

As the prime effect is to oxidise reduced sulphur compounds, when applied at the correct dose levels, it will not destroy other mechanisms that may be vital to the process.

The technology employed throughout this process is completely environmentally friendly, therefore, has no detrimental impact on the environment.

The systems are designed for minimal site input. Employing the best in chemical management, storage and delivery technology.



Sludge Systems

Pathogen Kill and Cake Conditioning Systems

Sludge and Septic Transport

Septicity Control

Odour Management



EnvEnt specialise in effective odour control solutions related to septicity in sewage, waste water and effluent systems.

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Background

A Food and Beverage Processing Operation had received a number of odour complaints due to their effluent plant. Acrid odours were emanating from the press house and were the direct result of an anaerobic sludge. Results of sampling confirmed that there was up to 20 mg/l of hydrogen sulphide in the effluent solution. Inside the press house levels of Hydrogen Sulphide in the atmosphere were at times in excess of the OEL prescribed levels for safe working.

Evaluation

The effluent plant consisted of a high speed anaerobic and aerobic phase followed by a DAF unit, from which the sludge was fed forwards to a holding tank. Sparge lines injecting air within the tank were designed to maintain aerobic conditions, but measurements revealed that the sludge was stubbornly anaerobic. Evaluation revealed that the sludge was not susceptible to biological remediation within a reasonable timeframe. A proprietary oxidising agent was evaluated under laboratory conditions and found to be effective in eliminating odour from sludge samples, in fact, elimination was virtually instantaneous. Following the favourable laboratory results oxidation remediation was instigated into the effluent stream immediately prior to the press house.

- ◆ Under Section 79 of the “Environmental Protection Act of 1990”.
- ◆ It is the responsibility of local authorities to investigate odour issues.
- ◆ The legislation does not allow odours to go untreated.
- ◆ Fines can be imposed at up to £20,000 per event,
- ◆ Potentially extremely costly if not resolved



Trial

A temporary storage and dosing system was set up on site using a stand alone bund and a 1,000 litre tank. An initial dosing rate of 0.5 litres of proprietary oxidant to each cubic metre of sludge would be sufficient for odour mitigation. Oxidant distribution and injection point location had yet to be determined. A number of injection points between the storage tank, the transfer pump manifold and the inlet manifold to the belt press were evaluated. Injecting to the tank proved unfavourable, whilst injecting to the transfer pump manifold was effective, but consumed too much product. Injection into the transfer line, prior to the flocculent addition point and in line shear device, was highly effective given the very short residence time. Hydrogen sulphide levels inside the building dropped to zero almost immediately and the acrid smell was neutralised. The dosing has continued over a period of months coming on automatically when the transfer pumps and press are in operation. Dosing can be manually adjusted to accommodate the variations in effluent quality.

Conclusion

An off limits area was transformed into an environmentally friendly zone demonstrating an economical, sustainable solution. The final cake is still disposed of, trouble free, to a composting plant. Odour complaints from within the plant and local community have now ceased and the working environment is classified — safe.