



# CASE HISTORY

Thermal Treatment Alternatives



# Evaluation of Waste Management Options

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Customer aimed to establish the best business model for Waste Treatment in the North Sea Continental Shelf for Land Based processing

## The Challenge

The Oil Industry has standardized on specific treatment of solids (contaminated solids from the wellbore). Thermal Desorption is now the established methodology for treatment. The team members at BEAD Environmental Solutions were engaged to evaluate the alternatives to provide a reduced carbon footprint while remaining compliant to SEPA (Scottish Environmental Protection Agency) regulation.



## The Solution

Following a three month investigation, all methodologies were fully evaluated and ranked in relation to cost per metric tonne, energy consumption, Space requirement, adherence to legislation for discharge and cost/tonne. A 'value' model was developed to compare technologies and reflect the changing emphasis of reduced power consumption per metric tonne of material processed.

The project was expanded to embrace new and innovative technologies that offer alternatives to the established methodologies. The project scope was also extended to review the role in fluid waste processing (Slop fluids).

## The Results

The technologies demonstrated a similar capability in reducing oil contamination levels but reliability of discharge levels varied significantly on the basis of material characteristics. The impact of higher fluid and specifically water was determined as being a major influence in waste quality and the ability to process it through thermal systems and the alternative, emerging technologies.



## The Details

Segregation was shown to be key in all technologies. Contamination with Slop fluids (Oil/water) had a detrimental impact on the ability to treat the material.

Thermal Desorption was shown to have a significant carbon footprint in relation to alternatives. The established technology was shown to be the only type able of delivering reliable and consistent discharge materials within permissible limits.

Alternative technologies demonstrated capabilities that in many legislative environments would deliver acceptable levels of discharge. These technologies were independently reviewed and presented as a strategic business opportunity.

Process rate was determined to be a major contributor to cost.

## Summary

The customer was presented with the study and was engaged with in follow up presentations. From this the strategy and business case was modified to reflect the technical and financial models presented to them.

This enabled the customer to embrace the diversification of their product offering into one that could utilize new technologies. This provided the ability to increase revenue streams, reduce inventory compromises and exploit a market opportunity in processing waste.

