

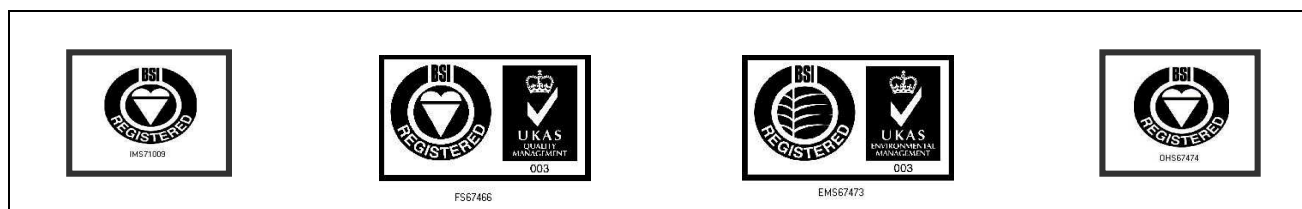
TOTAL WASTE MANAGEMENT ALLIANCE PLC

Company Profile

Introduction

Total Waste Management Alliance plc. (TWMA) has been providing “total waste management” services to companies with interests in the oil and gas interests since the 1980s. These services have included general waste management both in the UK, Central Asia and Africa, the processing and recycling of hydrocarbon contaminated wastes (including drill cuttings) on and offshore and, most recently, the bulk handling and transportation of drilled cuttings, also on and offshore.

TWMA has full Bsi certification of its Integrated Management System and operates to ISO 9001:2000 – Quality Management, ISO 14001:1996 – Environmental Management, OHSAS 18001:1999 – Health & Safety Management standards.



General Waste Management

Industrial waste management is a complex and costly activity for any business. With the near doubling in waste generation over the past 40 years, protection of the environment through reuse and recycling of materials is now a top priority. Legislation is driving this priority and the requirements for legal compliance are stringent, onerous and ever changing.

Total Waste Management Alliance plc has gained a reputation for taking a value added approach to waste management. All but the most intransigent materials are recycled, reprocessed or reused. All paperwork, record keeping and management aspects of the process are addressed as routine. The provisions of training and close liaison with the client’s own logistics personnel ensure that legal compliance is assured.

This total approach to waste management has gained the company a critical position in the market and has earned them a significant share in this important sector of the industry. Contracts with ExxonMobil, Agip, TotalFinaElf and others have been won in the UK while further afield an integrated waste management contract with BP in Azerbaijan has been completed successfully

Hydrocarbon Waste Processing and Cuttings Handling

Thermal Processing

At the core of the company’s services is a unique type of thermal processing for the treatment of oil mud contaminated drilled cuttings and other hydrocarbon wastes. A variety of technologies were first applied to the processing of these wastes at the company’s transfer station in the Shetland

Isles. A few years later further capacity was established at the Peterhead facility to process cuttings and other hydrocarbon waste for a number of major operators including Mobil and Kerr-McGee. Using a series of methods of treatment the company has over the years gained wide acceptance within the industry for providing sound solutions to some of the industry's major environmental problems.

While the processes adopted successfully addressed many of the difficulties of treating and disposing of hydrocarbon contaminated solids the company was well aware that certain problems remained unresolved. The more important of these related to the transport of the drill cuttings to shore based processing facilities and the associated environmental impact, the inherent safety implications coupled with the very significant cost. The solution could only be found by removing or minimising the need to transport the drilled cuttings from the offshore source to a land based processing facility. The treatment needed to be moved to the source.

To do this, and working closely with ExxonMobil, the company put in place a research programme a few years ago to try and resolve this problem and see if a technology could be developed to meet the greater demands of processing cuttings offshore. The process plant would need to be reliable, have sufficient processing capacity and provide recovered waste streams that could be reused or disposed of offshore.

Following this intensive research, development and build programme the results of the work were finally realised when the first offshore RotoMill™ went out on trial in the North Sea for ExxonMobil in 2001. A series of trials followed and were successfully completed in 2002. Importantly during these trials the process reduced retained hydrocarbons on solids to less than 0.1% (UK limit is 1%) and therefore the treated powder could be discharged overboard. The recovered oil phase was unchanged by the process and could be returned directly back into the mud system while the water could either be reused or disposed of overboard.

With this phase of development complete a new generation of offshore processing units are now being manufactured.

The Technology

The process was specifically designed to flash evaporate the fluid phases from drill cuttings and other hydrocarbon contaminated waste, without emissions to the atmosphere. To evaporate these fluid-phases temperature needs to be generated and to do this the RotoMill uses a unique combination of electro/mechanical energy. This electro/mechanical energy generates the necessary thermal energy to evaporate these fluid phases. Typically the temperature required to optimise the process ranges between 250°C and 260°C, but this can be varied depending on the type of cuttings or other hydrocarbon contaminated waste being processed and the boiling point of the associated hydrocarbon. The evaporated fluids are retained and then reduced using a condensing technique allowing selective recovery of the individual fluids, which are typically hydrocarbons and water. The remaining solids phase is discharged as an inert powder while the recovered fluids are available for reuse or recycling.

Full details of the RotoMill™ are attached.

Cuttings Containment / Handling

The bulk collection and distribution of cuttings is a vital part of the overall process of recycling or disposal of drilling waste. The industry requires an efficient method of moving large volumes of cuttings in bulk either to shore-based cuttings processing facilities or to offshore cuttings treatment/re-injection systems.

To meet these demands TWMA used their many years of experience in the processing of drilled cutting to develop a bulk collection and distribution system (CCDS) to effectively take cuttings from the shale shakers to the point of disposal or processing, either onshore or offshore. The system uses a simple combination of a CT unit, a CST unit, and, if required, a vacuum system and cuttings bins for “skip & ship”. The CT and CST units both use highly efficient direct displacement pumps to move the cuttings either on the rig to offshore processing facilities, cuttings re-injection systems or cuttings bins. Apart from these rig application the CT and CST units may be used for bulk transfer and containment of cuttings to shore based processing/disposal facilities.

Full details of the CCDS system are attached.

Associated Services

TWMA is able to provide a wide range of associated services. These include:

- General tank cleaning
- Mud tank cleaning (including jetting)
- Slops & Sludge Treatment
- General rig deck cleanup

Business Development

TWMA service the UK sector of the North Sea from four waste transfer stations. There are two in the Shetlands, one in Peterhead and one in Aberdeen. The onshore processing of drilled cuttings is carried out at the Peterhead base. Overseas, the company has been operating in Baku, Azerbaijan, for over a year and is currently developing a RotoMill™ processing plant in Fourchon, Louisiana to service the Gulf Coast. In Nigeria the company is now establishing a fully operational cuttings processing and other hydrocarbon contaminated waste facility in Onne, near Port Harcourt, to service the expanding onshore and offshore exploration and development activity. TWMA is now broadening the geographical development of its business with further expansion anticipated in West Africa, the Middle East, South East Asia and North America.