



Rhodes Remediation Projects

Allied Feeds Project

Directly Heated Thermal Desorption (DTD) Plant Stack Emission Test Results, June to August 2007

Treatment of contaminated soil with the DTD plant was suspended in early July 2007 after stack emission test results for the contaminant dioxin marginally exceeded the environmental licence criteria.

In order to recommission the DTD plant, a series of new tests were required. The testing schedule was outlined in a recommissioning plan, and the plan was approved by the Department of Environment and Climate Change (DECC) and the Department of Planning.

A complete mechanical and electrical check was performed on the DTD plant in preparation for its recommissioning. Some of the potential causes of the dioxin stack emission exceedance that were identified included:

- Inadequate combustion in the thermal oxidiser
- Dioxin/furan synthesis in the cooler due to inadequate cooling
- Dioxin/furan emissions from plant materials that were contaminated by prior events
- Dioxin bypassing the thermal oxidiser through the pugmill, to the evaporative cooler

Thiess Services commenced processing clean soil through the plant on 23rd October 2007 as part of the recommissioning plan. Stack emission testing was conducted whilst processing the clean soil to help investigate the potential cause(s) of the dioxin emission exceedance. Test results indicated that residual dioxin inside the DTD plant's emission control system may have negatively affected the stack emission test results obtained during standard operations. Consequently, the DTD plant was mechanically decontaminated and refurbished extensively. These measures were undertaken both prior to and following stack emission testing in November 2007 whilst processing contaminated soil.



As the source of the dioxin contamination could not be definitively identified during the recommissioning of the DTD plant, Thiess Services has continued to investigate and monitor all potential sources of contamination, and refurbish plant components, when necessary. The plant's operating parameters are also being reviewed on an ongoing basis.

Official dioxin stack emission test results attained in January 2008 whilst processing contaminated soil were as follows:

Run	Dioxin¹ (ng/m³) concentration at 11% O₂	DECC Limit (ng/m³)	Status
#1	0.045	0.1	Pass
#2	0.09	0.1	Pass

¹ Dioxins and Furans reported at WHO₀₅ – TEQ, dry, 273K, 101.3 kPa and 11% O₂.

After achieving the above-mentioned test results, the DECC and the Department of Planning approved the recommencement of full scale DTD treatment operations.

Considering the background contamination level of the DTD plant, a conservative approach to the recommencement of operations has been adopted. Regular testing of stack emissions from the DTD plant has also recommenced in accordance with the plant's licence requirements.