

Historical Debris Pit Investigation

Kleinfelder was commissioned to undertake intrusive test pit investigations on over 100 identified debris pits on a 3000km² parcel of land previously used for nuclear weapons testing, and to assess the potential risks to human health, safety and ecology as a result of large volumes of historical waste.

PROJECT RESULTS

In recognising the mistrust resulting from previous poorly executed and incomplete clean-up activities at the site, Kleinfelder understood the importance of proactive engagement with Traditional Owners. Multi-staged and audience specific engagement helped build trust and will promote continued engagement as the remediation program is planned and implemented.

To improve Traditional Owner confidence in the robustness of the investigation scope, the SA EPA was proactively engaged, in both the planning and execution stages of the project. A Certified Environmental Practitioner was also voluntarily engaged to provide third- party independent input.



ASSESSING THE RISKS

Working with historical data and the documented incompleteness of previous clean-up activities at the site, Kleinfelder's risk based approach, which included the use of unmanned aerial vehicle magnetic surveys, was directed at debris pits previously identified as a 'high' or 'moderate' risk, allowing for effective use of resources without compromising the assessment of potential risks.

Kleinfelder set out to determine the nature and volume of waste materials and the condition of the debris pits, as well as the extent of soil contamination resulting from the hazardous materials within the pits. A conceptual site model, using the source-pathway-receptor model was developed, to identify potential human health, safety and ecological risks.

PRIORITISING THE RISKS

Kleinfelder used the results of the debris pit investigations to develop a remediation options assessment (ROA) and a Debris Pit Risk Register to provide a baseline for future refinement. A semi-quantitative evaluation of potential risks was undertaken, assessing contaminated soils, asbestos, pit aesthetics and physical hazards, all of which are major concerns of the Traditional Owners (Maralinga Tjarutja) to whom the land was returned in 2009.

Location:

Maralinga, South Australia

Client:

Commonwealth Department of Industry, Science, Energy and Resources (DISER)

