



CASE STUDY

PROJECT: Radioactive Stockpile Characterisation

LOCATION: Belgium

TOTAL VALUE: £25K

INTRODUCTION

The site was originally occupied by a materials technology plant. Activities carried out there included production and extraction of precious metals products and catalysts.

The waste contained some radioactive material and, with support and input from the Belgian regulatory authorities, the client commissioned Harrison Group to undertake an investigation to determine radioactivity levels and assess their integrity and potential to cause future pollution.



SCOPE OF WORK

Areas under investigation were chemical waste stockpiles resulting from the production of cobalt over 50 years ago.

* **Stockpile 1** contained 280,000m³ of waste material at a depth of approximately 15-20m across an area of 7200m².

* **Area 2** comprised an area of several hectares where waste was buried to a depth of approximately 3m and capped with a layer of clean material.

Site work comprised two phases:

Phase 1: Determination of the extent of the radioactivity within Stockpile 1. Harrison Group



supervised the drilling of 50No. cable percussion boreholes and installed 150mm diameter standpipes for radiological monitoring.

Phase 2: Determination of the geotechnical parameters of material in Stockpile 1 and Area 2 and analysis of its radioactivity. The site investigation included the drilling of 5No. deep boreholes in Stockpile 1 and a further 10No. shallow boreholes in Area 2. Continual U100 samples were taken and 150mm diameter wells for monitoring radiation were installed.

SPECIAL SAFETY MEASURES

Health and Safety issues are always a priority of the Harrison Group. In this instance there were additional hazard issues surrounding potential contamination from radioactive material.

Prior to setting up the drilling rig and equipment, the ground was scanned with a Geiger Counter. All work was monitored by health physics personnel who continuously scanned arisings and U100 samples before manual handling took place.

In addition, the drilling rig, all equipment and operatives' protective clothing were screened before moving between borehole positions. Site vehicle and rig were jetwashed prior to exiting the site and joining the public highway.

As an additional precautionary measure, U100 samples were screened for a second time before being released for transport back to the UK. Only samples exhibiting background (safe) or less levels of radiation were couriered back to our in-house UKAS-accredited laboratory. Remaining samples were retained by the client for secure storage.

CONCLUSION

This was a demanding project in a highly sensitive site, however Harrison Group was able to satisfy both the client and the Belgian authorities by using a combination of bespoke safety measures and scrupulous on-site vigilance.