

Site Optimisation and Closure Works

The Environmental Safety Case

03

Purpose

Under the terms of the Environmental Permit granted by the Environment Agency, LLW Repository Ltd are required to submit an Environmental Safety Case (ESC) by 1st May 2011. The ESC:

- Presents the arguments and evidence concerning the environmental safety of disposals of solid radioactive waste at the LLWR.
- Provides a basis for the environmentally safe management and regulation of the site, including assessing future changes in plans.

Process

Work undertaken has included:

- Improving the understanding of the historic waste already disposed.
- Reviewing engineering designs to support the closure of the repository.
- Studying coastal erosion, taking account of climate change and projected rises in sea level.
- Collecting more geology data and using it to accurately show groundwater movement to predict the movement of any contamination from the waste.
- Developing models to estimate the effects of any radioactive and chemotoxic materials entering the environment.

Coastal Erosion and Climate Change

Climate change is leading to rising sea levels that will increase coastal erosion. Available evidence suggests the site will be eroded on a timescale of a few hundred to a few thousand years, with consequent disruption of the Repository.

While this situation is unusual, all near-surface disposal facilities are vulnerable to long-term disruption by natural erosion processes and/or human actions. This is taken into account by setting limits on the waste that may be disposed.

The EA has given a formal view that providing certain requirements are met the potential for disruption of the site by coastal erosion is an acceptable risk.

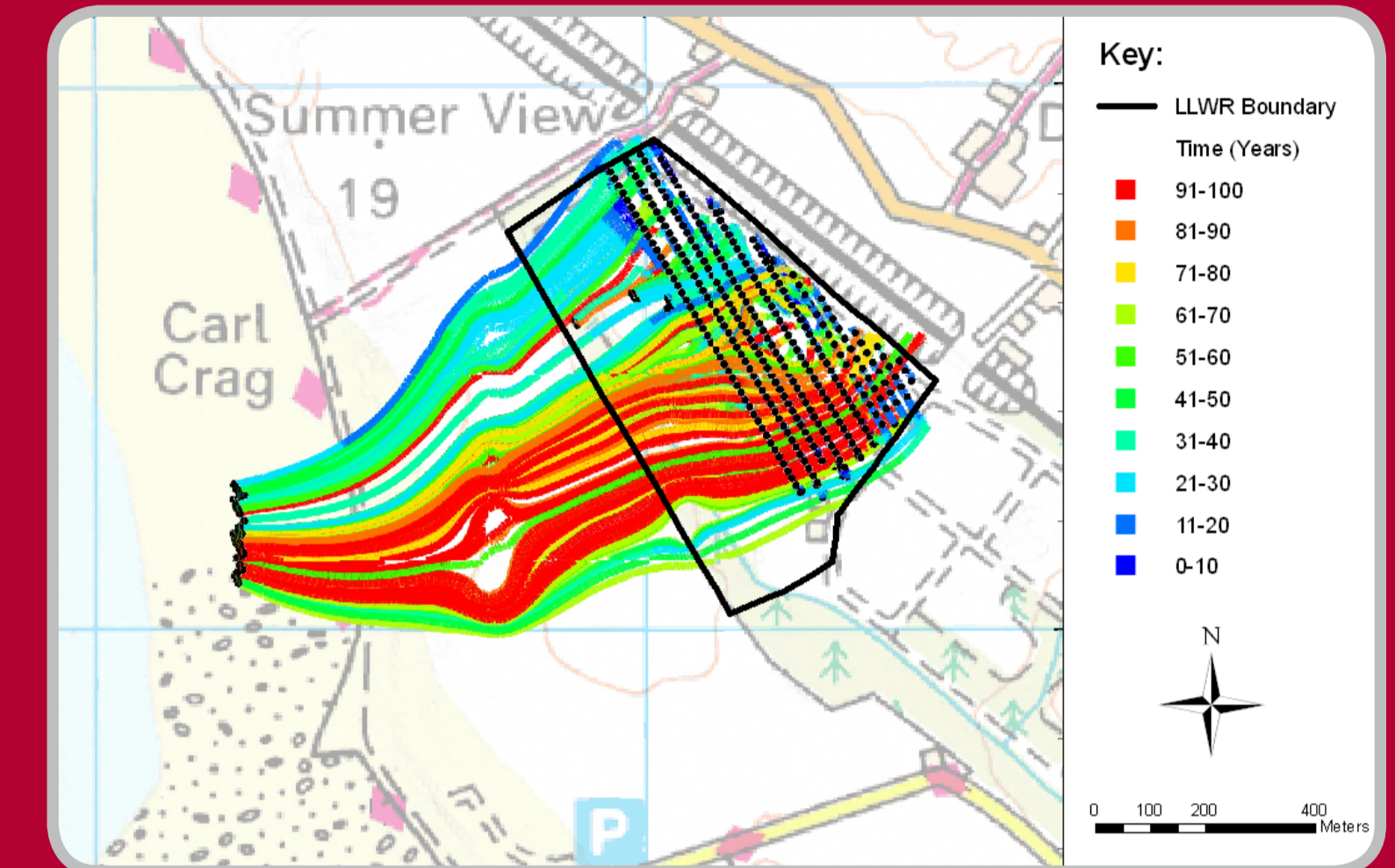
Radiological Capacity

The 2011 ESC will demonstrate that the LLWR can accommodate all LLW in the UK radioactive waste inventory (subject to assumptions about waste management and acceptance).

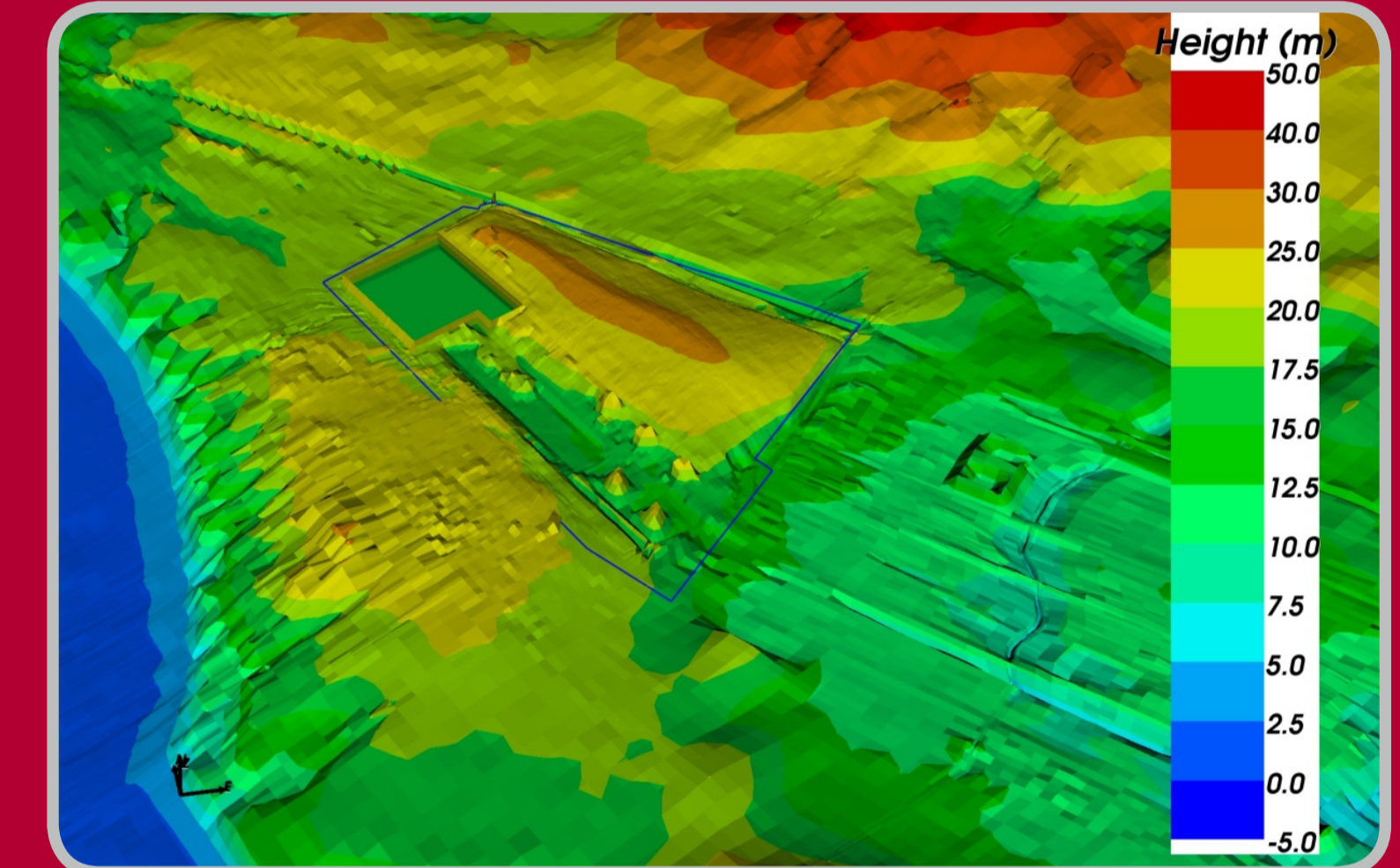
Trench Inventory

LLW Repository Ltd has taken a pragmatic approach to deriving the trench inventory, reflecting the quality of the data available and the actual or potential significance of individual radionuclides.

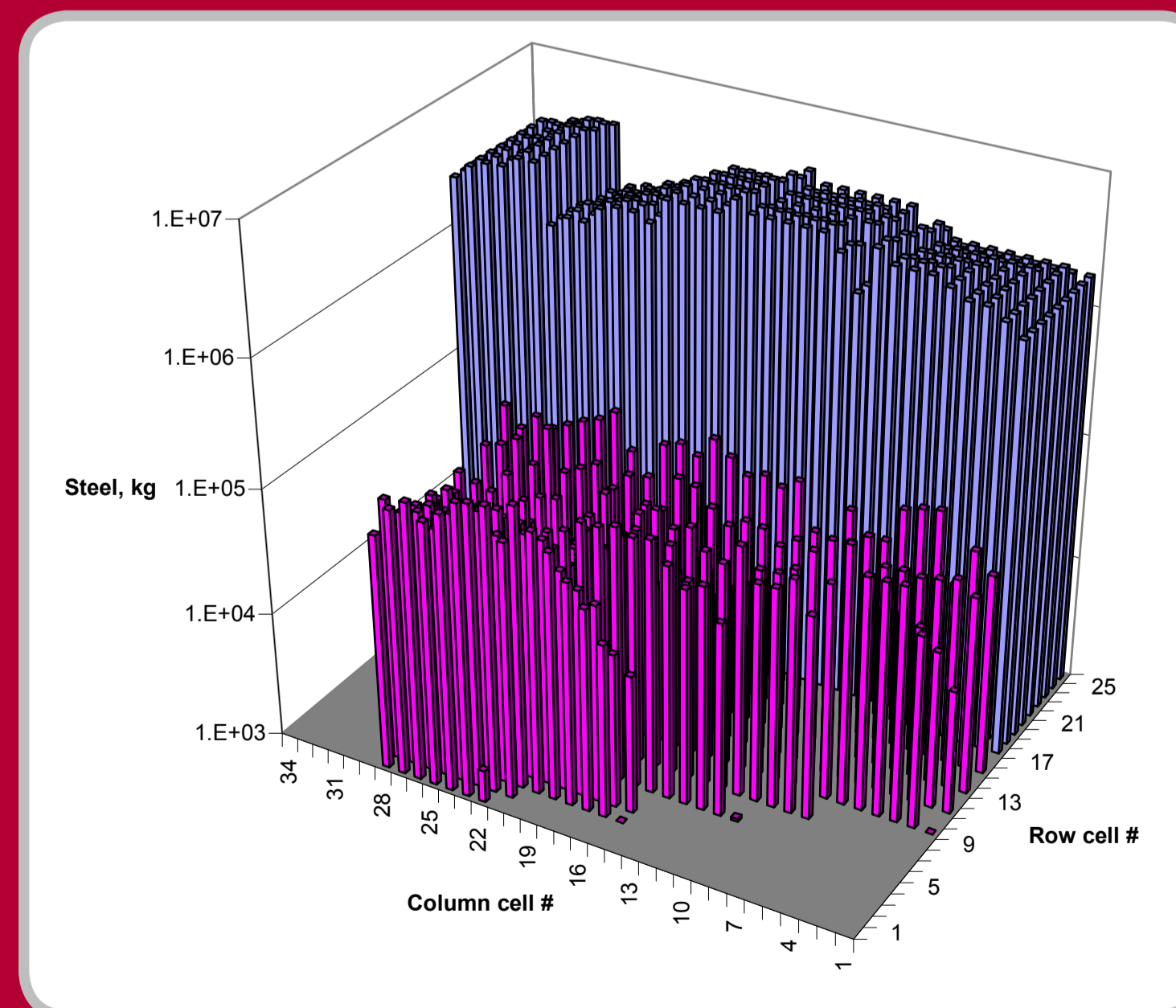
Research was undertaken, involving interviews with former staff and analysis of the interviews. This process did not identify any significant and quantifiable impact on the inventory. No changes to the inventory of disposals to the LLWR trenches have been recommended as a result of the interviews.



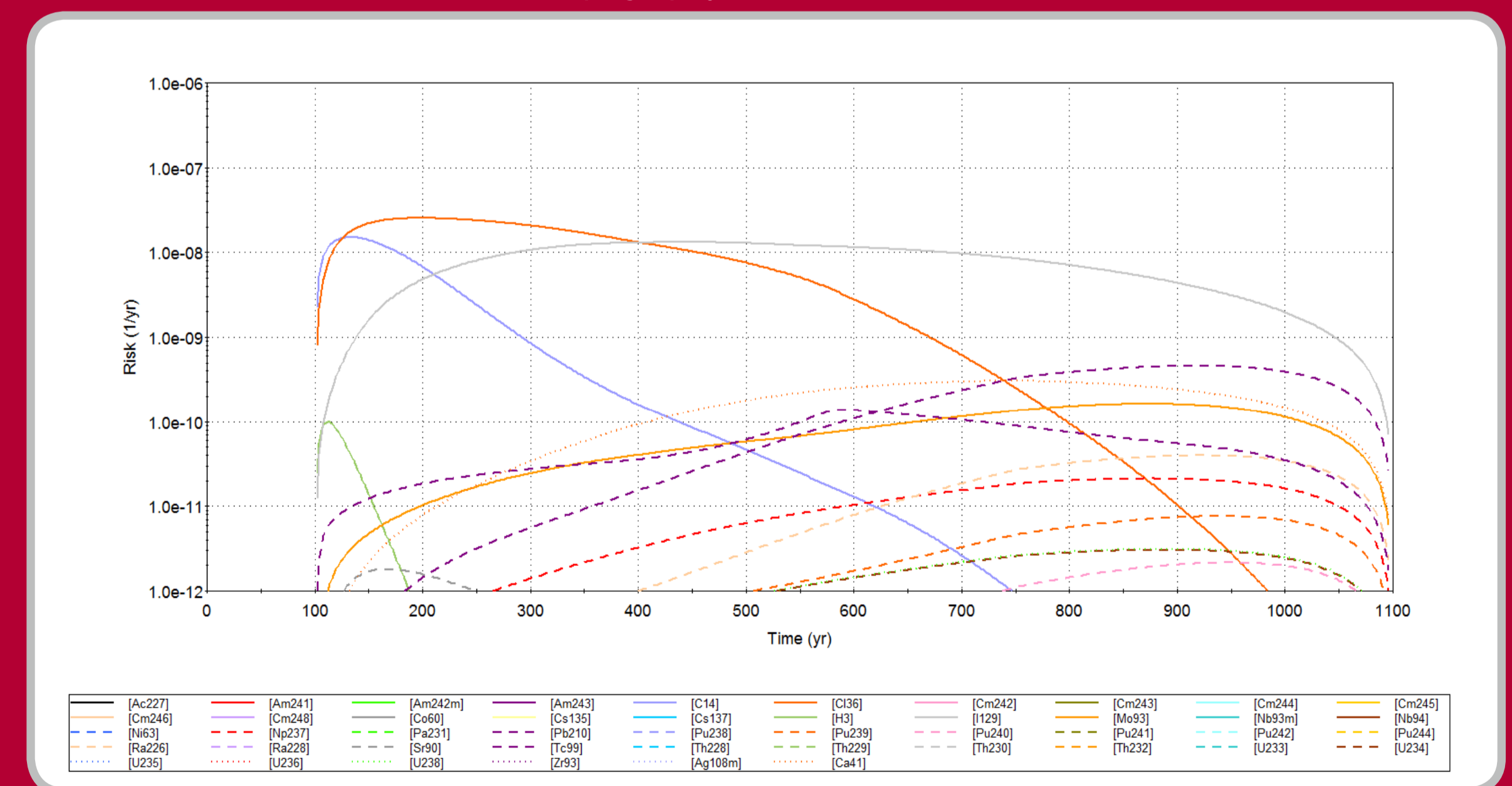
Modelled Release Pathways



Topography of around LLWR



Distribution of Metal Inventory



Hypothetical risk of drilling a well in SSSI