

Case Study: Group 2
Metal Refinery, E Midlands, UK

The site consists of a 50Ha area of ground, of which around 30Ha is occupied by buildings, process plant and tankage, and the remaining 20Ha is open areas formerly used for materials and waste products stocking. The factory refines a metal into its oxide form using a sulphuric acid extraction process from a mineral sand. This is a complex process that produces a range of by products. More modern plants use a different process. The use of sulphuric acid has resulted in a significant amount of acidification on the site and this has mobilised metals into shallow groundwater, particularly on an area of open ground to the west of the factory buildings. Acidification of this area is controlled by interception of ground/surface water and its discharge to the facility effluent system.

The onset of the recession reduced sharply the demand for the primary product and it was decided at the end of 2008 that this factory should close, with the exception of legacy activities (see below). Production was shut down in early 2009 and emptying and cleaning out of storage areas, tanks and process plant has been continuing since. Two legacy activities remain operational – a by-product process (a long term supply contract obligation) and a CHP plant, occupying two areas in the centre of the plant.

The plant was regulated since 2004 under the PPC regulations and a soil and groundwater baseline survey was carried out in 2004. The PPC regulations require that the soil and groundwater is returned to its pre-baseline condition prior to surrender. It is likely that soil and groundwater quality has deteriorated due to acidification, including areas beneath buildings and process plant.

Independently of the closure process, negotiations are underway for the sale of the by product manufacture and CHP plant legacy operations, and the remainder of the site to a development company. A high degree of commercial confidentiality is to be maintained and service providers working on different aspects of the scheme will communicate only with the people in the closing organisation responsible for commissioning their work packages.

Exercise

You are the environmental manager for the closing organisation and have taken over responsibility from the plant environmental manager, who took early retirement when the plant closed. Your responsibility is to ensure that the PPC permit is surrendered, to manage liability transfer issues for the sale of the parts of the site, and to advise other parts of the company responsible for site decommissioning/demolition and for negotiating the land sale.

Prepare an outline of a site closure action plan including:

- Aspects and Impacts to be considered in the site closure
 - Eg: Legal/regulatory context
 - Divestment/liability transfer context
 - Closure strategy
 - Closure management
 - Demolition, remediation, restoration
- Issues and Priorities of the site closure
- Business consequences of closure actions
- Actions and tasks list for the site closure.

Based on this experience, how would you draw up a “Roadmap” for site closure?



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50 Ha site closed in 2009. Two legacy operations remain – CHP plant and by-product plant with long term contract to fulfil. Closure process ongoing – depollution of tanks/pipework and removal of wastes nearing completion. The site was operating under a PPC environmental permit and remediation will be required for deterioration in site condition (acidification) – investigation work just completed. Also historic pollution of undeveloped part of the site.

A potential purchaser has been identified for the site and in parallel with regulatory closure, due diligence assessments and commercial negotiations are ongoing.



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Problems:

- Differing objectives and poor communication between different parts of closing organisation
- End State Vision not communicated and complicated by legacy operations
- Regulatory closure and site sale not considered together; timescale objectives conflict
- Lack of communication between service providers
- Disengagement of legacy operations from remainder of site
- Logistics of regulatory closure, eg depollution vs soil/gw investigations, demolition vs remediation
- Departure of staff with key knowledge from closing organisation
- Long term management of soil/gw impact reliant on effluent treatment operations planned for closure



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Adverse Consequences:

- Decision making more complex and may not account for all factors and implications
- Increase in time and cost for closure
- Post closure property tax and utility costs
- Closure and liability transfer impeded by continuance of legacy operations
- Loss of key knowledge of the site
- Cost of necessary changes to long term management of soil/gw impact