

Client  
Environment Agency  
Cost  
£16,000

Location  
River Irwell  
Program  
5 Weeks



LK in partnership with TEP (ecological consultants) were commissioned to undertake work at the River Irwell to determine the possible cause of historical fish kills in the northern stretch of the study area and the ecological health of the study site with regards to maintaining its SBI status.

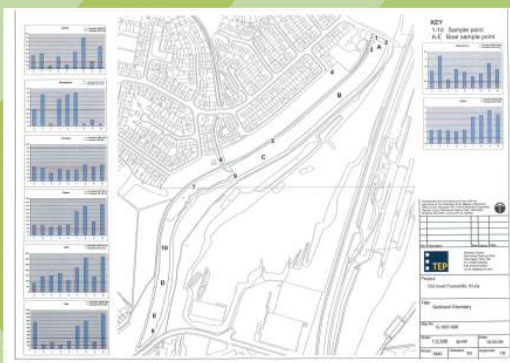
LK initially undertook a desk study and concluded that two historical landfills bordered the study site and the site reconnaissance noted possible sewage outfalls.

All outfalls and the main surface body of the study site were sampled on four occasions. One round of sediment sampling was also undertaken.



Surface water and outfalls were not significantly impacted by dissolved phase contamination except for free ammonia and low dissolved oxygen. Faecal coliforms were also noted from the sewage outfall suggesting detritus material that can contribute to a high BOD. The northern part of the site had the highest values, in particular the outflow from the landfill. Ochre deposits were noted which is indicative of reduced waters rapidly oxidising (pH was near neutral and therefore was not a pH dominant process).

Sediments were impacted by heavy metals and PAHs and may be a risk to benthic and aquatic life if environmental conditions change, such as the redox front moving into the water column through eutrophication processes.



The fish kills in the north coincided with warm weather periods and attributed to limited buffering capacity from ecological stress, where small detrimental changes to environmental conditions may be sufficient to stress the fish. The Southern part of the study site had had an apparent flow, which may allow sufficient aeration and reduce anoxia during warmer periods.

The Ecological assessment indicated diversity was limited at the study site and likely due to the poor state of the water body,

Consideration for change in chemistry if sediments were dredged was also assessed.

A cost effective betterment scheme was proposed for the study site to provide more aeration through engineered water flow and the introduction of oxygenating plants.