

The legacy of mining

Tracing the hazards using geological archives

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Geological maps, although providing details of industrial activity over long periods, are unable to account for all geohazards associated with mineral abstraction. A recent investigation, to identify the location of concealed mine shafts prior to construction works, illustrates the growth and decline of mining activity within the Lancashire coalfield.

Inspection of four geological maps covering the investigation area showed that workings at Blundells Colliery have dominated the area since before 1805 (the earliest geological map for this area) although mining had been noted for some two thousand years.

The geological map of 1805 indicated that supposed Roman workings were found in the area of Arley Hall located to the south-west of the study area. Surveyed prior to the construction of a mineral railway on the east of the canal, the base map showed a limited number of working mine shafts associated with Blundells Colliery. Features such as the culvert passing under the Leeds and Liverpool Canal are still in existence and indicate that surface run-off problems were evident at the time of construction of the canal. A further culvert was subsequently constructed under the mineral railway between 1805 and 1847 to maintain this drainage path.

By 1847 (the next time slice within the mapping) considerable expansion of Blundells Colliery had occurred and apart from the construction of the railway, the number of mine shafts had increased threefold. The earliest map of 1805 had shown that all of the mine shafts were active; however by the time of the later

mapping, these workings were abandoned. There had been considerable expansion of mining in the area during the first half of the 19th century and this development required infrastructure links, resulting in the construction of the railway to serve Blundells Colliery. Barge traffic on the Leeds and Liverpool Canal had also increased.

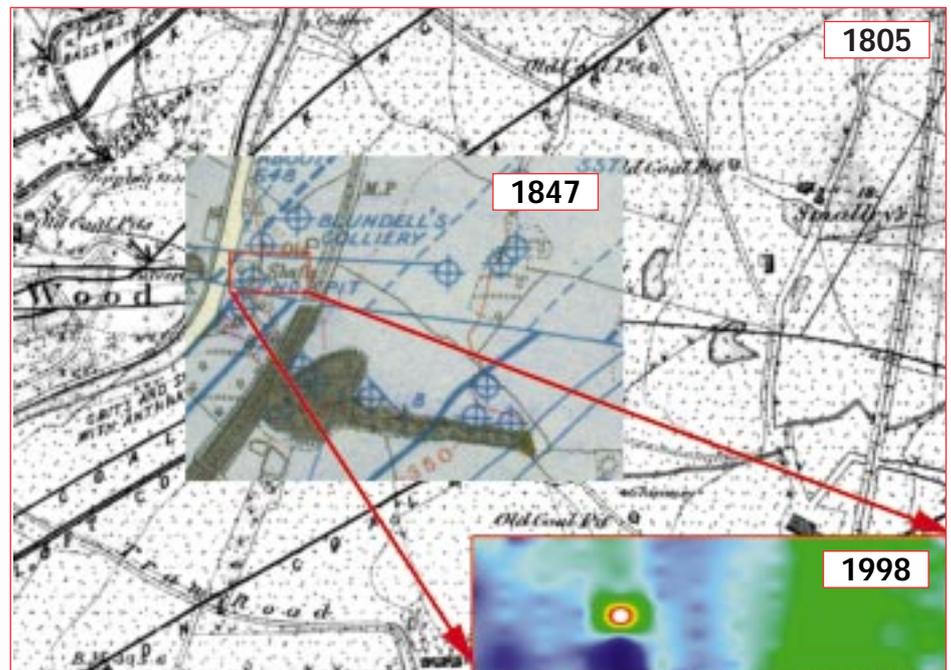
During 1861, remapping of the geology of the area showed a stable industrial history of mining activity within this part of the Lancashire coalfield. All mine shafts were now shown to be abandoned. This rapid decline could have resulted from the necessity for greater mining depths with the associated abstraction of deep mine

water which would have been technically insurmountable at this time. The technical limitations would have limited working to depths of about 600 feet.

Close to a line of four of the shafts located in the centre of the study area, a chimney was mapped, in 1805, which it is assumed was an engine house for the pumps. All traces of this structure have disappeared although the field in which it was located is locally known as the 'brick field', presumably due to debris from the destruction of the previous building.

A non-intrusive geophysical investigation located subsurface features associated with mine shaft locations, by mapping ground conductivity. The surveys confirmed both the location and the integrity of mine shaft capping. Having identified these geohazards, contingency plans could be formulated for their avoidance.

Inspection of later geological maps of 1861, 1896 and 1905 showed little change in the study area with indications of mine shafts being maintained. All mine shafts were abandoned and little detail of mine abandonment could be found; these mines had closed prior to the Mine Abandonment Act which has required abandonment plans to be deposited with an appropriate authority since 1872.



Geophysical image of mineshaft noted on historic (1805 and 1847) geological maps.