

British coal mining

The Prime Geological Record

by Rod Bowie, *Keyworth*

The BGS has had a long and active involvement in coal exploration and its resulting exploitation over the past 160 years. Initially the Geological Survey worked closely with private collieries, then with the National Coal Board (NCB) and its successor British Coal Corporation; now we work with the privatised concerns and the Coal Authority. During two moves, in 1997 and 2001, the British Coal Prime Geological Record Collection was transferred to the BGS and the Coal Authority. Details of this collection are summarised below.

The mapping programme of the Geological Survey (predecessor of the BGS) was once linked closely to the expansion of the coal industry and one of the earliest publications was the 'Geology of the Staffordshire Coalfield' published in 1853. Subsequently, a vast amount of coalfield data has accumulated and also we have been given legislative powers to obtain data. Information related to mining has been collected, and observations recorded on field maps and mining slips. The Mining Industry Act 1926 (section 23) was formulated to ensure that all information obtained from boreholes and shafts drilled for mineral exploration was made available to the Geological Survey; for many years every significant shaft or borehole notified was visited. The Mining Industry Act also gave officers of the Survey the same rights in relation to access as Inspectors of Mines.

The Mining Records Office was set up in 1840 under the auspices of the first Director of the Geological Survey, Henry de la Beche. By 1872, the Coal Mines Regulations required deposit of abandonment plans, and by 1883, when the office transferred to the Home Office, the collection was described as 'more perfect than that of any other country in the world'. This was the foundation of the national

collection now managed by the Coal Authority. Later, the Geological Survey was heavily involved in coalfield work during the Second World War. During the early development of the NCB, there was close liaison and sharing of data and resources.

The National Geological Records Centre (NGRC) and the National Geological Materials Collection (NGMC) are components of the National Geoscience Data Centre established in 1984 to house the BGS's data and related data from external organisations. The Records Centre is a Recognised Place of Deposit for Public Records. Thus the BGS was an obvious choice when it came to housing the geological record of British Coal. The NERC, DTI and Nirex provided funding towards doubling the existing records area and providing suitable accommodation for staff carrying out the processes involved in modern records management.

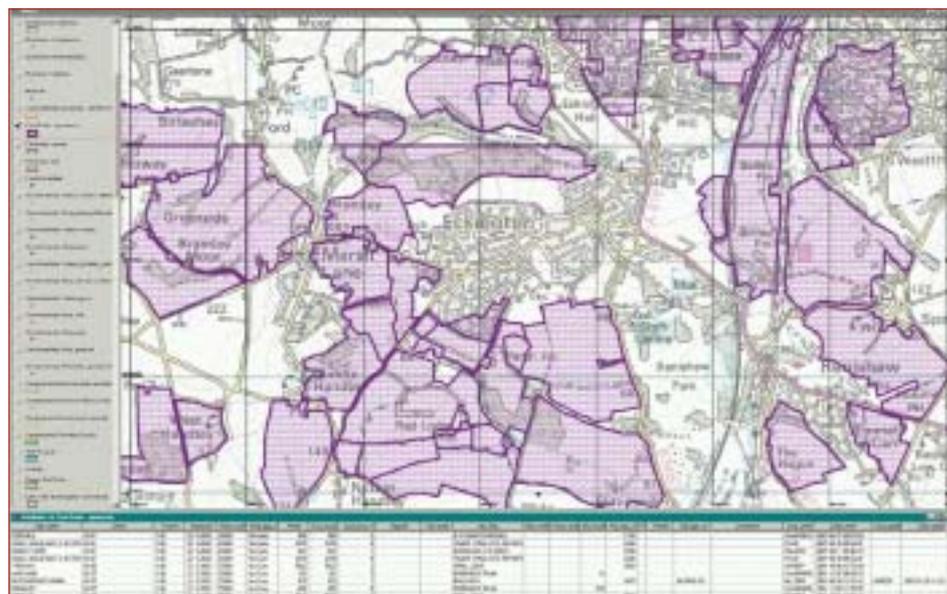
British Coal was wound up in 1994 and the Coal Authority established by the Coal Industry Act. By the end of 1997 local Mining Records offices had closed and the British Coal archive, including core and sample materials, was dispersed as follows:

- All abandonment plans to the Coal Authority.
- Prime geological data initially to the Coal Authority and subsequently to the BGS.
- Interpretative data to the BGS.
- Materials to the BGS.
- Geophysical data to the BGS.

The Public Records Office lists of the remaining data were examined by former surveyors of British Coal and by BGS geologists; data of geological or environmental significance were sent to the BGS. The remaining records were offered to other organisations.

Prime Geological Record

The Mining Records Office of the Coal Authority at Bretby, closed in September 2001. Their Mine Abandonment Plan collection was transferred to a new building at the Mansfield Headquarters and the Prime Geological Records were transferred to the BGS, Keyworth. A total of 6304 archive boxes (occupying over a kilometre of shelving) were transferred successfully from Bretby, and the records were unavailable for only two working



Opencast prospects in Derbyshire displayed on the BGS internal networked Geoscience Data Index.



Tim Cullen, BGS © NERC

Deep mine data in the new storage facility at the BGS.

days. A further 2712 archive boxes consisting of interpreted data and reports on prospects, which were previously part of the same collection but separated at the closure of British Coal, were incorporated at the same time. The collection consists principally of deep mine information, opencast coal prospect data, seismic surveys, plans and analyses.

Opencast records: These cover some 8000 sites and include about one million borehole records, the earliest dating from the 1940s, filed in 3618 boxes. The opencast prospecting site information is now indexed digitally at a high level and the index site maps of British Coal have been scanned, geo-rectified and the site outlines captured digitally. All available BGS opencast records have also been added to the index, which is available for use by staff and will also be made available on the BGS web site.

Deep mine: The deep mine data are filed in 2651 file boxes and a new high-level digital index describing the box contents has been created. This analogue index will be digitised and once available will be sufficient for NGRC Records Enquiry staff to retrieve information for most enquiries. Databasing and integration of the geophysical log data with existing BGS collections has commenced. The types of data include borehole records for holes drilled within colliery areas, shaft data, seam analyses, geophysical logs, underground data, interpretative and miscellaneous records of various origins, and seismic sections. A project to scan the deep mine records will commence shortly.

Seam analysis: These are the results of about 30 000 analyses of coal samples. They are organised by region and then by colliery or Ordnance Survey Quarter Sheet. There is no index, but full reports are held within the prime data. The samples analysed are now part of the Materials Collections described below.

Coal Authority geophysical data: The BGS is custodian of this digital collection, on behalf of the Coal Authority. It includes the logging of deeper holes from the 1970s until the demise of British Coal. There are 2000 tapes and 100 disks representing over 900 boreholes. As they are processed, the digital data are loaded into the BGS Wellog database. Borehole locations are available in the Geophysical Data section of the Geoscience Data Index (GDI) on the BGS web site: <http://www.bgs.ac.uk/geoindex/> and the data can be supplied in a variety of formats.

Coal Authority seismic surveys: A digital archive of the seismic reflection surveys conducted by the NCB and British Coal is held on behalf of the Coal Authority. Details of over 12 000 tapes covering a total of 9800 line kilometres are databased, and original field data or processed data can be supplied to customers. There is a related collection of several thousand analogue seismic sections. The locations of the seismic lines are also shown on the GDI.

Abandonment plans: A back-up set of abandonment plans for England and Wales is held at Keyworth and for Scotland in Edinburgh. Some 100 000 microfilm aperture cards are filed according to the HSE Abandoned Mine Catalogue index. Enquirers are normally directed to view the main collection at the Coal Authority, Mansfield, but the Scottish collection at Murchison House is available to the public.

Other plans: British Coal's miscellaneous data contained a large number of plans (about 20 000) including: seam plans, colliery plans, hydrogeological plans, safety plans, and waste and remediation plans. These are currently being indexed within the corporate BGS Plans database.

Interpretative reports and other geological records: This collection of 5417 archive boxes has been sorted, an analogue index created and a digital version started. The collection includes

interpretative reports on potential new prospects. Other data considered to be of geological or environmental value were selected by British Coal surveyors for retention in the NGRC.

Coal samples: This important collection is housed in the NGMC store at Keyworth. The collection consists of many thousands of coal samples contained in plastic security containers, glass jars and glass phials. A database relates these to coal seams in individual boreholes and to the seam analysis reports now held in the NGRC. There are also about 10 000 thin sections of rocks from the coal seams floors and roofs, used to estimate the likely fire risk from quartz content, a unique collection of thin sections of coal, and various microscope slides of palynological preparations.

Valuable resource

These collections are important for the overall understanding and interpretation of the local geology, but also provide specific site information about the environment and may indicate potential hazards. They provide a valuable reference source for use in the continuing exploitation of coal and for exploring the development of new methods, such as coal gasification. The majority of the collections are held on open file and are already available for inspection; where practical, copies can be supplied. As the collections become fully indexed and digitised they will become more readily available for BGS staff and external researchers.

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