The Coal Authority

Resolving the impacts of mining

User Guide

For the Coal Authority downhole water temperature and electrical conductivity logs (2000-2019)

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Mine water, temperature, electrical conductivity, shaft, borehole, geophysics

Contents

1 Summary

This document provides information for users on the mine water temperature and electrical conductivity downhole logs (2000-2019). It outlines why the dataset was created and its potential uses and limitations.

2 Introduction

The Coal Authority

The Coal Authority (the Authority) is a non-departmental public body sponsored by the Department for Business, Energy & Industrial Strategy, and was established by Parliament in 1994. Its statutory responsibilities include:

- Licensing coal mining operations in Britain
- Providing access to information on coal mining
- Dealing with property and historic liability issues
- Administering coal mining subsidence damage claims
- Providing a 24 hour call out service for public safety hazards.

Further information on all the digital data available from the Authority can be found on our website at **https://www.gov.uk/government/organisations/the-coal-authority** or by contacting:

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3 About the Dataset

3.1 Background

The Coal Authority undertakes monitoring of shafts and boreholes across Great Britain's coalfields. As part of this monitoring geophysical instruments are used to profile shafts and boreholes and the water contained within. This is often undertaken for reasons such as assessing the condition of a monitoring point or identifying different water types prior to the collection of water chemistry samples. Here we present the water temperature and electrical conductivity data collected as part of this geophysical monitoring.

3.2 Dataset History

The data covers a period of 2000-2019, across a range of sites owned and monitored by the Coal Authority. The data has all been collected by our contractor Robertson Geologging Ltd who are part of our framework of contractors.

3.3 Who might require this dataset?

This data can be used by academics, researchers, government bodies.

Data licences are available to cover a range of intended end uses and outputs.

3.4 What the dataset shows

Other applications will also be able to open this data. The data illustrate changing temperature (°C) and electrical conductivity (µS/cm) of mine water within flooded mine shafts and boreholes. The parameters are measured on a 1cm resolution throughout the length of the shaft or borehole. An accompanying dataset also provides names and locations of the monitoring points.

3.5 Coverage

The location of the data points from the mine water temperature and electrical conductivity downhole borehole/shaft logs dataset is illustrated below (see Figure 1 below). The grid references are provided in the supporting metadata included with the dataset.

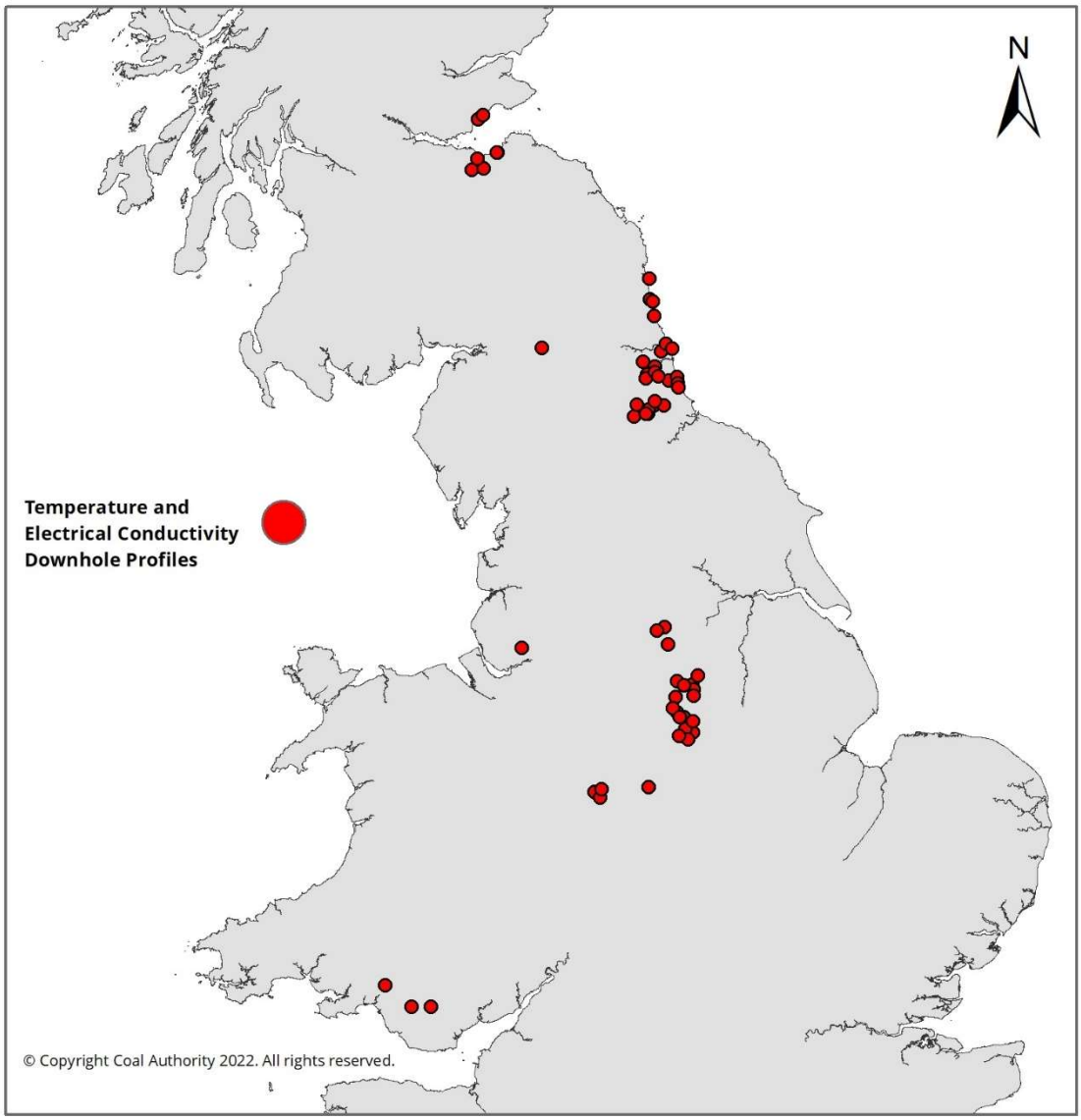

Figure 1: Locations of shafts and boreholes with mine water temperature and electrical conductivity logs

4 Technical Information

4.1 Definitions

The majority of the datasets, although not all, contain the following information. The definitions of the data are included below;

DEPTH

This is the depth in meters of the reading below a known datum point, often ground level unless otherwise stated.

TEMP: Temperature

Water temperature degrees ºC, measured every 1cm throughout the water column.

COND: Electrical Conductivity

Electrical conductivity of water µS/cm, measured every 1cm throughout the water column.

CN25: Electrical Conductivity @25 ºC

Electrical conductivity of water µS/cm, measured every 1cm throughout the water column.

DELT: Change in temperature

Delta T or change in temperature is the difference from the previous reading.

DELTC: Change in electrical conductivity

Delta EC or change in electrical conductivity is the difference from the previous reading.

4.3 Data Format

The data is provided in two file types, .LAS that can be opened in NotePad, and .CSV which can be opened in excel. Other applications will also be able to open this data.

4.4 Field Descriptions

Table 1: Attribute table field descriptions for supporting location datasheet

Data Field	Explanation of Data Field
File_Name	This correlates with the file name
CA_Site_Title	Site name as used by the Coal Authority
CA_Site_ID	Coal Authority monitoring site reference
Data_Type	Water Temperature and Water Electrical Conductivity
File_Tyle	.LAS or .CSV
Purpose	Reason for Coal Authority monitoring at the location
Date	Date of data collection
Easting	Easting
Northing	Northing
Data_Owner	All data is owned by The Coal Authority

5 Licensing Information

The Authority does not sell its digital data to external parties. Instead, it grants external parties a licence to use the data, subject to terms and conditions.

All recipients of a licence are required to return a signed licence document to us before authorisation for release of digital data is given.

These are general comments for guidance only. Full details of the terms and conditions of supply are included within licences.

The Authority's Data Team will be happy to discuss your proposed use of data and can be contacted at datasolutions@coal.gov.uk . The Data Solutions Team will usually be able to provide reassurance that the licence will cover individual user requirements and/or to include additional 'special conditions' in the licence documentation, addressing specific requirements within the Authority's permitted usage.

6 Limitations and exclusion of liability

The Authority is committed to ensuring that the digital data it holds and releases to external parties under licence has been through a robust internal approval process to ensure that corporate quality assurance standards are maintained. This approval process is intended to ensure that all data released: (i) is quality assured; (ii) meets agreed data management standards; (iii) is not in breach of any 3rd party intellectual property rights, or other contractual issues (such as confidentiality issues).

6.1 Limitations

- This dataset is provided in its raw form and no editing or QA of the data has been undertaken.
- The dataset does not provide any interpretation of the data
- The data for each site has the potential to change over time as the hydrogeological settings or pumping regimes change and thus any use of the data should consider that it is just a 'snap shot' in time at any given site and modern data may be required.
- If customers are uncertain about the use of particular data they should seek professional advice. The Coal Authority can provide interpretation of this data however this will incur additional costs.

6.2 Exclusions

The information contained within this dataset has been supplied to the Coal Authority in its raw format by our sub-contractor. No QA of the data supplied has been undertaken. The Coal Authority have no liability for the accuracy of the information contained in the datasets or for any loss of whatever nature directly or indirectly caused which may result from any reliance placed upon it. The licensee takes the information as provided without any such express or implied warranty and must rely upon its own enquiries and where necessary obtain appropriate insurance against any loss arising.

Data is provided as supplied by the Coal Authorities geophysical logging contractor (Robertsons Geologging Ltd) and no QA or editing of this data has been undertaken for the datasets supplied. The data represent mine water systems in various hydrogeological settings for example, actively

pumped, recovering or fully recovered. The data was collected as part of routine environmental monitoring undertaken by the Coal Authority. It should also be noted that this is a snap shot in time (2000-2019) and there are no plans to update this data.