

**COALFIELD HERITAGE
INITIATIVE IN KENT
EDUCATION PACK**

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THE COALFIELD HERITAGE INITIATIVE IN KENT

In 2001 Dover District Council launched the Coalfield Heritage Initiative Kent (CHIK) project, led by Dover Museum and the White Cliffs Countryside Project. The project's aim is to record and preserve East Kent's mining heritage. Funding for the project came mainly from the Heritage Lottery Fund and the Single Regeneration Budget. Other funders included Aylesham Parish Council, Deal Town Council, Dover District Council, Furley Page solicitors and Unison.

Coal was discovered near Dover in 1890, which led to a rush to exploit the mineral. Many coalmines were started, only to fail, and just four collieries survived, Snowdown, Tilmanstone, Betteshanger and Chislet. Most of the workers for these mines came from traditional coal areas such as South Wales, the Midlands and the North East and to house them new villages were built, including Aylesham, Elvington, Hersden and Mill Hill near Deal. The last colliery, Betteshanger, closed in 1989.

If the on-going regeneration of the coalfield and the improvements to the old mining communities are successful, there will soon be almost no indication that there ever was a coal industry in Kent.

Phase One of the project was a community archive and was begun in August 2004. It will record coalfield heritage through the creation of a digital archive, comprising photographs, documents, stories, oral reminiscences and video clips. Put together by ex-miners and their families, schools, community groups and other societies, the aim is to create both a local resource available in regional centres and a 'virtual museum', on the Internet. A travelling exhibition is also available free to parish halls, community centres, schools etc.

Phase Two of the project is The Miner's Way Trail, which was begun in September 2004 and led by the White Cliffs Countryside Project. The Miner's Way Trail is a coalfield country trail focusing on the old coalfield sites and the surrounding countryside. The trail is suitable for walkers, cyclists and horse riders and features signage, interpretation and artwork (on the theme of the coal industry). The coalfield communities will be involved in leading walks, creating art and managing and maintaining the trail.

TEACHERS NOTES

This pack is intended as an information pack for teachers on the subject of coal mining in Kent. All of the contents of this pack are photocopiable.

It is a resource for teachers of pupils of all key stages providing them with information, which can be used to support classroom work and can be adapted to suit the age and ability of their pupils.

The information contained in the pack both, in written text and in the supporting photographs, provides a good basis for a project based on the history of the Kent coalfield. It will also support teachers who are planning outdoor activities linked to The Miner's Way Trail.

The pack is in two sections: -

Section 1 – Teachers Notes

This section contains teacher's notes, suggestions for how to use the contents of the pack; worksheets linked to the Miner's Way Trail and suggested other resources.

Section 2 – Teachers Information

This section contains background information on coal and coal mining; information on coal mining in Kent; information on individual Kent collieries; information on the Miner's Way Trail and photographs.

Further information and a wide selection of material suitable for resource material on the Kent Coalfield and The Miner's Way Trail can be found on the Coalfield Heritage Initiative in Kent (CHIK) website at www.kentcoal.co.uk

CROSS CURRICULAR LINKS

There are plenty of opportunities for cross-curricular work linked to the Kent Coalfield covering areas of the Curriculum relevant for pupils of all key stages.

ART

The opportunities for art are limitless. The study of the development of the Kent Coalfield as part of the development of this area of East Kent provides an opportunity for looking at a variety of drawings, paintings, charts, photographs etc.

Pupils could use this subject as the basis for a variety of art activities. These range from drawing and painting including real life sketches of the modern coalfield sites and parts of the Miner's Way Trail to collage work and three dimensional art based on mining machinery, colliery buildings, ideas for art installations along the Miner's Way Trail etc.

CITIZENSHIP

The coal mining industry could be utilised as part of work on citizenship in the following areas: -

- Children's rights
- Resolving conflict
- The role of the media

DESIGN AND TECHNOLOGY

The theme of coal mining provides many opportunities for design and technology activities. These could include work on components, mechanisms and pneumatic and hydraulic systems.

ENGLISH

The opportunities for English work based on coal mining in Kent are wide ranging. They could include: - prose and poetry, fictional accounts or diaries from various periods of the history of the Kent coalfield, descriptive writing linked to coal mining activities and the coal mining communities and producing a guide for a museum in the classroom or for part of the Miner's Way Trail.

INFORMATION AND COMMUNICATION TECHNOLOGY

Information technology plays an important part in modern coal mining and this could be looked at in terms of the changes in coal mining techniques. Pupils can also use a wide variety of information technologies to record their work.

GEOGRAPHY

Amongst other things pupils need to learn about the main physical and human features of an area and how the features of a locality influence the nature and location of human activities within them.

The study of the development of coal mining in Kent and the Miners Way Trail could provide opportunities for geographical work in the following areas: -

- Changing settlements
- Environmental impact
- Fieldwork skills
- Sustainable development

HISTORY

The history of coal mining in Kent could form part of a study of the following aspects of history: -

- Local History
- Victorian Britain
- Britain since 1930
- Britain 1750 - 1900
- A World Study after 1900

MUSIC

Pupils can use the theme of coal mining and The Miner's Way Trail as a stimulus for their own composition work. Also they can listen to and sing a variety of music and songs linked with the theme of coal mining through the ages.

SCIENCE

Various elements of the science curriculum for all Key Stages could be included in work on the coal mining industry and The Miner's Way Trail. These include work on: -

- Scientific enquiry
- Materials
- Forces and Motions
- Life Processes and Living Things
- Energy Resources
- Geological Changes

USING PHOTOGRAPHS

Photographs are hugely influential in our lives. Every day we are exposed to hundreds of different images via newspapers, magazines, advertising and much more. These images help play an important role in forming the ideas we have about others and ourselves.

Photographs can be an important source of evidence in many ways and as such provide a great resource for work in school for pupils of all ages. Working with photographs can be used to stimulate, challenge and provide creative learning opportunities for pupils.

Literacy and communication skills can be actively encouraged through the use of photographs. Photographs are interpreted mainly through language and writing and using photographs can help extend speaking and listening skills and can help pupils differentiate between fact and opinion.

For younger pupils, photographs can also be used to support numeracy work such as collecting, representing and handling data and developing understanding of shapes, spaces and measurement. Information gathered from photographs can be gathered, sorted and recorded in different kinds of graphs, tables and charts. Mathematical language such as bigger than, next to, how much, altogether etc can be used when discussing photographs. This will help with developing an understanding of mathematical language in a wider context.

Many children will be used to looking at photographs of friends and family, although the increased use of digital technology means that this is often now done via the computer screen, rather than the more traditional photograph. Different pupils due to their own experiences will react and interpret photographs in different ways. Pupils looking at photographs are probably not seeing what adults assume they see. It is therefore important when using photographs to use activities that help the pupils look very carefully at critically at specific aspects of the photographs as well as the image as a whole.

Photographs can be used as a good way to introduce a new topic, such as coal mining in Kent. They can be used to establish what knowledge and understanding of coal mining in Kent the pupils might already have. Use the photographs to provide a neutral starting point for pupils to discuss and question their own ideas and opinions with confidence. Pupils should be given the opportunity to discuss the photographs without feeling that what they are saying is being judged right or wrong, it is their opinion and their opinion counts even if it is not correct.

Different age pupils will respond differently when looking at

photographs. Younger pupils find detail very important and will often concentrate on the foreground of the photograph; they will also tend to ignore things they are unfamiliar with. Older pupils concentrate more on the overall theme of the photograph.

When looking at photographs pupils will use things they are familiar with to try and understand what they are seeing. This can mean that their understanding of the photograph may not fit in with what they are actually seeing. When writing or talking about the photograph pupils may describe things, which are not actually in the photograph. They may incorporate things that are associated with what they feel about the photograph based on their existing knowledge and own preconceptions of the subject of the photograph.

Whenever pupils look at a photograph as evidence they should consider the following questions: -

- Why was this photograph taken?
- What does it tell you about the people, places or events shown?
- What can I learn from looking closely at the details of the photograph?
- Does this photograph tell me the truth, or is it simply somebody's point of view?
- Is this photograph misleading or a fake?
- Is this photograph a primary or secondary source?

USING DOCUMENTS

Evidence about the past comes in many forms and copies of documents both written and printed can be an important source of information. Documents can be either primary sources of evidence such as first hand accounts written at the time or secondary sources of evidence written after the event.

When studying something such as coal mining in Kent documents can be an invaluable source of material for class-based activities. It is worth remembering when using documents that they can give a biased or incomplete view of the event and often reflect the personal views of the person or people who produced them. This is particularly true of secondary sources as time can alter the memory of what actually happened.

When using any kind of written evidence pupils should ask the following questions to help them assess the material they are considering: -

- Is it a primary or secondary source?
- Where did it come from?
- When was it produced?
- Who wrote it and why?
- Is it a personal account or an official source?
- What did the person who produced it want people to know, feel or think?
- Is the information factual or personal?
- Is the information it contains accurate?
- Can the information be verified by other sources?
- Has any information been left out?
- Are there any contradictions, inconsistencies or omissions?
- Is the information it contains useful, reliable or biased?

Newspapers can be an important source of evidence but when using them, particularly with older pupils the stance they are taking on the event needs to be considered. This is of particular importance when studying major events such as the 1984 Miner's Strike. When looking at newspaper accounts the pupils should consider the following points: -

- Newspapers often take sides particularly in political disputes.
- Newspapers sometimes leave out important or pertinent facts.
- Newspapers do not always give a completely accurate account of events.
- Newspapers sometimes exaggerate.
- Newspapers sometimes describe things in a very one-sided way.
- Newspapers sometimes try to influence the way we think.

USING ARTEFACTS

We can learn a great deal about a society by looking at artefacts associated with that society. The tactile experience of handling objects provides a direct link for pupils of all ages with the aspect of the past they are studying. Using artefacts can be very engaging and motivating and can provide pupils with an inspiring and stimulating learning environment.

Artefacts provide a primary source of evidence and can be the source of a whole range of information about everyday life, materials available, technological skills, change and continuity over time etc. Artefacts provide pupils with the opportunity to develop investigative skills such as identification, detailed observation, classification, interpretation, recording and communication. Artefacts can be used as a basis for encouraging self directed learning rather than just right or wrong answers.

Artefacts belong to someone whether it's a museum via a loan service or an individual who either brings them into or lends them to the school. Pupils of all ages need to be made aware that all artefacts need to be handled with care and consideration and not as things to be played with.

Artefacts can be used as a stimulus for discussion or to re-enforce something they have already studied. They can be used in comparison with modern day equivalents to show changes over time. Artefacts can be used as a stimulus for drama, art and design work as well as providing a stimulus for creative and factual writing of all kinds for all age groups.

Artefacts can be used to great effect as a basis for historical enquiry allowing pupils to obtain information from sources. After looking closely at an artefact either individually or in groups pupils could consider some or all of the following questions either verbally or as a written exercise. Pupils can also devise their own questions about the artefact. The results can also be presented by the pupils to the rest of their class, thus helping pupils with developing presentation skills: -

- How old is it?
- What size and shape is it?
- What is it made of?
- What tools or techniques were used to make it
- Who might have made it?
- Did it require specialist skills to make it?
- What was it used for?
- Who would have used it?
- Did it have a practical function or was it purely decorative?
- Was it valuable when it was made?
- Does it have any value today?

MUSEUM IN THE CLASSROOM

History is about people and the study of ordinary objects. When this is combined with the use of other sources such as maps, photographs, printed and written documents, oral histories etc they can become a powerful and thought provoking resource which will help pupils of all ages to understand the past.

Most people collect and display something in their homes. This can range from family photographs on the mantelpiece to a collection displayed in a glass cabinet. For pupils collections can range from Pokemon cards and Barbie dolls to football memorabilia. Developing a museum in the classroom linked to a subject being studied such as coal mining in Kent is a valuable cross-curricular project, which can be linked to the National Curriculum through most subjects and for all key stages.

Before setting up a museum in the classroom there are some practical things, which the teacher needs to consider: -

- Where will it be exhibited?
- Who will be responsible for looking after it?
- How will you get the things for it?
- From things already in school?
- From a museum or loans service?
- From parents and grandparents?
- From the local community?
- From other sources?
- How the things will be displayed?
- How long will the things be on display for?
- What do you do to secure valuable or fragile objects?
- If objects are borrowed are they covered by the school insurance?
- Will the museum in the classroom be only for the one class or will other pupils have access to it? If so how will this access work?

Involving the pupils in every stage of development from obtaining things for display, sorting and arranging the objects and developing identification labels provides them with a feeling of ownership over the museum and can provide a range of stimulating class-based activities for pupils of all ages.

USING THE MINER'S WAY TRAIL

If you are planning to use the Miner's Way Trail you obviously need to allow more time if walking during inclement weather and plan enough stops for food and drink along the way. Ensure that you have suitable clothing with you, including a comfortable pair of walking shoes and be prepared for changes in the weather.

This is still a living, working landscape and you will pass through farms, villages and country estates. You are very welcome to enjoy the countryside along the way but please be considerate and show respect for the people who live and work here. Please do not disturb crops or livestock along the way, ensure gates are closed behind you and keep to the marked footpaths. Very rarely you may find the path blocked by crops or other obstructions, you may move these to allow you to continue along the path or you may have to follow the edge of the field to avoid them. Some of the paths across fields may get muddy during the winter months.

Please take care when crossing or walking along roads and country lanes. Keep in single file and walk on whatever side of the road makes you most visible to drivers and allows you to see oncoming traffic.

Always leave gates as you find them, fastened or unfastened and use stiles and gates to cross fences and hedges. Some places along the route are perfect for picnics and these are marked on the route maps. Please do not stop for picnics on paths across private land. Please take your litter home with you, it can cause injuries to people, wildlife and livestock.

The following Ordnance Survey maps will help you to enjoy the trail and surrounding attractions and countryside.

Landranger Series - scale 1:50,000, (2cm to 1km)
Map NO. 179 - Canterbury and East Kent

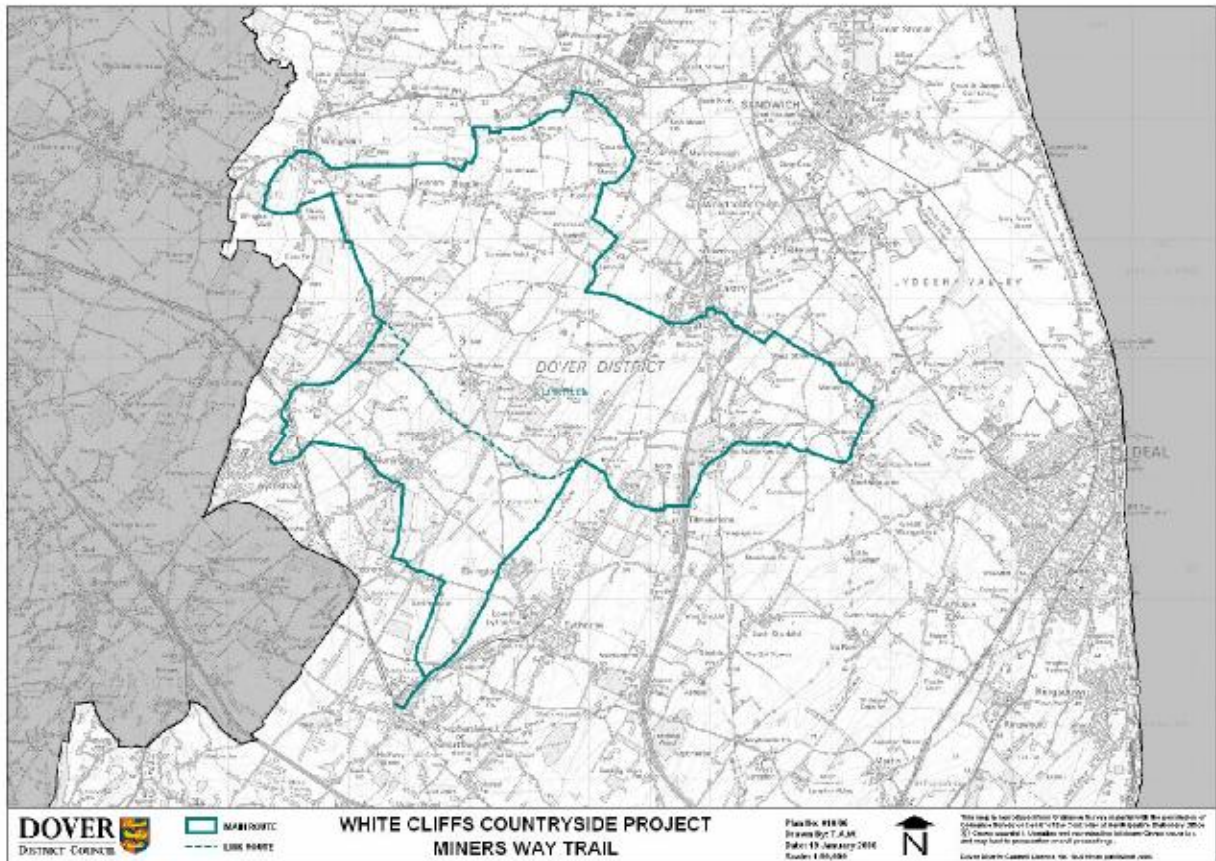
Explorer Series - scale 1:25,000, (4cm to 1 km)
Map No. 138 - Dover, Folkestone and Hythe

Map No. 150 - Canterbury and the Isle of Thanet

MAP OF ROUTE

On the map below mark on the following: -

- Your school
- Where you live
- A former coal mine
- An area of woodland



Name two villages on the Miner's Way Trail

1.

2.

WALKING FOR HEALTH

Walking is one of the best types of exercise you can get. It keeps you healthy, takes you to new places, can be lots of fun and is free!

Experts recommend that you walk for at least half an hour every day. Most people walk an average of 4 miles an hour and burn off around 400 calories in that time.

**How many miles would you travel and
how many calories would you burn in your half hours walk?**

What do you like about walking?

Where is your favourite walk?

EVALUATING THE LANDSCAPE OF THE MINER'S WAY TRAIL

The landscape along the Miner's Way Trail is very varied, including areas of farmland, woodland and former colliery sites.

Try to evaluate the landscape you see using the Landscape Bi-Polar technique below at the following three places:

1. Ash Village
2. Aylesham Village
3. Betteshanger Colliery

UGLY	1	2	3	4	5	BEAUTIFUL
BORING	1	2	3	4	5	INTERESTING
UNCHANGING	1	2	3	4	5	CHANGING
DISLIKE	1	2	3	4	5	LIKE
NOISY	1	2	3	4	5	PEACEFUL
DRAB	1	2	3	4	5	COLOURFUL
MESSY	1	2	3	4	5	TIDY

For each place circle a number between 1 and 5 to show how you feel about the different places.

Add your numbers to give a score between 7 and 35 and write in the box for each place. 7 = not good and 35 = excellent.

Ash

Aylesham

Betteshanger

Are your scores different? Why do you think they are different?

HOW OLD IS THAT HEDGE?

Hedges are a special feature of this landscape, dividing up arable fields and linking many of the areas of woodland together. They are important corridors down which wildlife can travel, providing food, shelter and safety for birds and animals.

It is often possible to age a hedge by simply counting the different number of tree species found.

Find a hedge, which has lots of older, large trees in it, that way you know it hasn't been planted recently.

As you walk along the hedge, roughly estimate thirty metres and count the number of different species in that length, It does not matter if you aren't a tree expert, just look for the number of different leaf shapes you can see.

Each species you find is equivalent to a hundred years that hedge has been there, for example 3 species = 300 years.



ASH



ELDER



HAWTHORN



HAZEL



MAPLE



OAK



SPINDLE

FIND THE WOODLAND

There are many areas of woodland along the Miner's Way Trail of many different sizes and shapes.

These would have once been part of the much larger wild wood that covered this area of Kent before people started clearing it thousands of years ago.

It is still possible to see where this woodland would have been. Look at a map of the Miner's Way Trail and find an area of woodland, look around it and see how many other areas of woodland you can find. These are sometimes linked by hedges, Try and join up these areas and see if you can work out where the larger woods would have been.

Why do you think people would have cleared areas of woodland?

Think of three different uses that people might have for woodlands:

- 1.-----
- 2.-----
- 3.-----

What do you like about woodlands?

WHAT IS COAL?

'coal is the altered remains of prehistoric vegetation that originally accumulated in swamps and peat bogs'

Coal is a fossil fuel the same as oil and natural gas. These fuels once used cannot be replaced. Coal formation began in the Carboniferous Period, known as the first coal age, which spanned 360 million years to 250 million years ago.

During this period there were large areas of swamp and forests. The trees in the forests were not like the trees we associate with modern forests but were like giant ferns as tall as oak trees. When these trees died they fell to the ground and lay there rotting with other plant material, eventually forming a thick layer of partially rotted plant material.

The build up of silt and other sediments combined with the tectonic movement of the earth's crust gradually buried the rotted plant material. The high temperature and pressure this subjected the rotted plant material to caused physical and chemical changes which gradually changed it over thousands of years into peat and then eventually after thousand of years more into coal. The whole process from tree to coal taking millions of years.

A layer of peat 40 metres thick would eventually form a seam of coal 2 metres thick. The quality of the coal deposit is determined by the temperature and pressure and how long the formation process took.

Coal seams vary in width from centimetres to many metres thick. Seams are not always level and flat. Over the millions of years the movements of the earth have caused the layers to bend and fold. In some instances the elements such as rain, wind and frost have worn away layers of the earth leaving a coal seam exposed, this is called an outcrop. In other places the movement of the earth has caused seams to break, this is called a fault.

There are many different kinds of coal. The highest ranking coal is the hardest coal known as anthracite and is found at the greatest depths, is the darkest in colour usually black with a vitreous lustre. It has a high carbon content, a low moisture content and produces more energy. Lignite and peat are found nearer the surface and were formed more recently. They are typically softer with a dull earthy appearance. They have a low carbon content, high moisture level and produces less energy.

Coal deposits are distributed throughout the world. With the coal deposit known about at present it is estimated that there is enough coal to last for 155 years. It is hoped that new coal reserves will be found by ongoing and improving exploration activities and that new mining techniques will allow previously inaccessible reserves to be reached.

FACTS ABOUT COAL

Coal provides 25% of global primary energy needs and generates 40% of the world's electricity.

In 2003 the world's coal reserves were distributed as follows:-

- 36% in Europe and Eurasia
- 30% in Asia and Pacific
- 26% in North America
- 6% in Africa
- 2% in South and Central America

In 2005 the top ten coal producers were:-

- China 2226 Mt
- USA 951 Mt
- India 398 Mt
- Australia 301 Mt
- South Africa 240 Mt
- Russia 222 Mt
- Indonesia 140 Mt
- Poland 98 Mt
- Kazakhstan 79 Mt
- Colombia 61 Mt

In 2005 the top coal exporters were:-

- Australia 231 Mt
- Indonesia 108 Mt
- Russia 76 Mt
- South Africa 73 Mt
- China 72 Mt
- Colombia 56 Mt
- USA 45 Mt
- Canada 28 Mt
- Poland 21 Mt

In 2005 the top coal importers were:-

- Japan 178 Mt
- Korea 77 Mt
- Chinese Taipei 61 Mt
- UK 44 Mt
- Germany 38 Mt

In 2004 coal accounted for 25.1% of the world's primary energy

consumption.

In 2004 39.8% of the world's electricity was generated by coal. This level is expected to remain at similar levels for the next 30 years.

In 2005 over 66% of worldwide steel production was dependent on coal using 13% of the coal produced worldwide. This is expected to rise by 0.9% a year over the next 30 years.



COAL AS A SOURCE OF ENERGY

Britain is richly endowed with coal

Using coal as a source of energy is not just a question of its location but also whether:-

- It is economical to extract
- It is of the right quality
- Cheaper sources of coal are available elsewhere
- There are other easily obtainable sources of energy
- There are other factors such as environmental effects

In 1947 coal accounted for 90% of Britain's primary energy source. There has been a steady decline since then mainly because:-

- Cheaper, cleaner and more convenient fuels have become available
- Increase in the use of nuclear power
- Introduction of smokeless zones from the 1950's
- Improvements to fuel efficiency

Increases in the price of other sources of energy such as oil have led to an increase in demand for coal at these times but this is only ever a temporary measure.

The choice of which fuel to use is mainly determined by its cost although in recent years the environmental effects of the fuel used are also often a consideration.

Historically coal mining has always effected the environment. Coal mining in Britain during the C19th and early C20th caused large scale environmental effects such as subsidence and large spoil heaps. During this period the detrimental effects on the environment were seen as inevitable.

Attitudes to the environment changed in the latter part of the C20th and concern for the environment continues to grow. The effect of industries such as coal mining on the environment, pollution, acid rain and the greenhouse effect are now being seriously considered by the coal industry and the electricity generating companies. New ways of minimising these effects are being worked on all the time.

In the future opencast coal mining could be the most commercial way of working old coal resources. The output from these kinds of mines is limited by environmental constraints.

Alternative sources of energy to coal include:-

- Oil
- Natural gas
- Nuclear Power
- Hydro-electric Power
- Solar Power
- Wind Power

COAL MINING IN THE PAST

Coal is mined by two methods - surface or opencast mining and underground or deep mining.

Coal has been used as a fuel for many years. Two thousand years ago Roman soldiers used coal in some parts of Europe. For much of known history people used wood as their main fuel source because it was readily available. As the forests started to dwindle another source of fuel had to be found. Initially people used coal which had been washed up on the beach or dug it out from easily seen outcrops.

Gradually people started to dig short tunnels to follow a coal seam, these tunnels were called Adits or Day Holes. As this easily obtainable coal ran out miners had to try and get to coal located deeper below the surface.

When seams were too deep for an Adit or Day Hole miners sank a shaft down to the level of the coal seam. They then dug outward around the bottom of the shaft to get as much of the coal as they could before the roof caved in. The coal was transported to the surface in baskets or small tubs. This was known as a Bell Pit. Bell Pits ranged in depth from 2 metres to 14 metres.

Developing on from this, miners started to extend the tunnels away from the shaft by leaving half the coal as pillars to hold up the roof. The coal then had to be moved to the bottom of the shaft using tubs or corves on wooden runners or wheels. This is known as Room and Pillar or Pillar and Stall mining. This kind of mining is not very cost effective as large quantities of coal have to be left as pillars.



Miners had to get to and from the coal face and coal had to be taken to the surface. The earliest winding device used to do this was the Windlass. Large baskets were wound up and down the shaft to transport the miners and the coal.

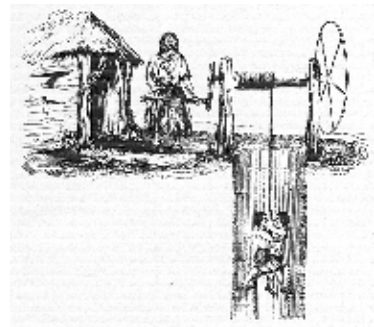
Developing on from Pillar and Stall mining miners worked together in groups propping up the roof with wooden posts and with stone walls made from the dug out waste rock.

The miners then worked together to transport the coal the whole length of the coal seam. One man worked at undercutting the seam with a pick, others then used hammers and wedges to bring the coal down in large lumps. These lumps were then cut into manageable pieces and loaded into tubs or coaves and transported to the bottom of the shaft. Other miners worked on putting in the wooden pit props. This kind of mining is known as Longwall mining.

Until an act of Parliament was passed in 1842 women and young children under 10 often worked underground. Often women and

children had been used to crawl along the tunnel pulling the coal laden tubs behind them.

After the 1842 Act only boys over 10 and men were allowed to work underground. Ponies were rarely used in thin seamed mines as it was difficult and expensive to have to excavate tunnels tall enough for the ponies to walk along. Gradually as mines got bigger systems of rails and tubs were developed in the tunnels to allow pit ponies to pull several coal laden tubs behind them guided by a pony driver.



As the shafts got deeper, cog and rung gins and later whim gins were used to transport the miners and the coal up and down the shafts. During the winding process great care had to be taken not to twist the basket, hit it against the sides of the shaft or drop it on the miners working below.

In the early C19th small steam driven haulage engines began to be used underground to move the coal. These would later be powered by compressed air and then electricity.

In the 1830's a cage running between fixed guide rails was developed to move miners to and from the coalface. This greatly improved safety for the miners.

During the C19th and early C20th century the use of machinery was introduced to Longwall mining allowing greater quantities of coal to be mined. Steam winding machines were used to allow numbers of tubs of coal to be brought to the surface at one time.

By the early C20th conveyer belts were starting to be used, although ponies were still being used for most of the haulage work. Gradually conveyers began to be used to transport the coal throughout the pit. Conveyers using moving chains or panzers were used along the coalface and a variety of conveyors using belts were used to get the coal to the surface.

Following nationalisation of the Coal Industry in 1947 coal mines were increasingly mechanised.

WORKING IN THE COAL MINE

During the 18th it was common for women and children to work in the mines because the money they received was needed to help support the family. This was especially true for families of miners who suffered injury. Women and children worked the same or even longer hours as the men but did jobs that paid less than the wages paid to the miners themselves. The wages of the women and children were paid to the miners, who then paid it out to those who worked for them. Generally children did not start working underground until they were 8 but there are records of children being employed from as young as 5.

The youngest children worked as Trappers. Their job was to open and shut the trap doors as the tubs or corves were pushed through. The children would sit for hours in total darkness in a small niche behind the door, which they would open by pulling a string. They had to stay there from when the first miner went down to the last miner came up often up to 12 hours a day. It was a very responsible job as the whole ventilation of the mine depended on them looking after their doors.

The older children and women were usually employed as Hurriers. They pushed or pulled the tubs or corves full of coal from the coalface to the bottom of the shaft and then pulled the empty ones back to be refilled. The roadways they moved along were often only 60 - 120 cm high. The tubs could weigh up to 100kg when empty and 300 - 400kg when full of coal. The younger children often worked in pairs but older children and women worked on their own. These hurriers were usually employed by the miners rather than the mine owners so often used their own wives or children, as they did not have to pay them.

Women and children also worked as Bearers. The bearer carried the coal from the bottom of the shaft to the surface.

The Hewers who cut the coal from the coalface using a pickaxe or wedge to split the coal were always men. This was a very dangerous and skilled job.

In 1842 following the Children's Employment Commissions report on conditions in the mines an Act of Parliament banned boys under 10 and girls and women from working underground. This was not well received by many of the mining families who only managed to survive by the small income generated by the wives and children.

The 1842 Act also ordered that all winching had to be done by adults or boys over 15. Following this act pit ponies were used to move the coal along the tunnels to the bottom of the shaft. The bearers job gradually was replaced by steam engines.

At this period mines were still very unsafe places to work as the conditions for the workers came second to the need to mine as much coal as possible. During this period accidents underground were a frequent occurrence.

Following the 1842 Act of Parliament a mines inspector was appointed, but he had little power and there were demands for greater reforms. In the 1850's more mine inspectors were appointed and for the first time mine owners were required to report all fatal accidents. Mine owners also had to keep up to date plans of their mines. These inspectors provided annual reports on mining conditions to Parliament.

In 1855 a further act was passed providing regulations controlling the ventilation of the mines. In 1860 boys under 12 were banned from working in mines unless they could read or write. Further legislation in 1862 made single shaft mines illegal; it became compulsory for each mine to have two exits thus providing miners with a safe exit in the case of an emergency.

In 1867 a system of voluntary inspection of mines by workmen was introduced in the Durham collieries. This was made compulsory for all collieries by an Act of Parliament in 1887.

In 1872 it became the law for all mine owners to have a certificate of competency and mine workers were allowed to appoint their own safety representatives to inspect the mines. In the 1880's the introduction of electric lighting in many pits meant miners could see what they were doing, which improved safety and resulted in fewer accidents. In 1890 metal pit props started to replace wooden ones. These were stronger and reduced the risk of cave ins.

In 1909 a further Act of Parliament introduced the eight hour working day. The Coal Mines Bill of 1911 made it compulsory for collieries to provide pithead baths for the miners. The baths had to be financed in part by the miners themselves. At this time mining was still a very dangerous occupation with one miner being killed every 6 hours, one miner being seriously injured every 2 hours and 1 miner being injured enough to need a week off work every 2 -3 minutes. Miners at this time also suffered many illnesses associated with their work such as rheumatism, beat hand, beat knee, beat elbow, blood pressure, pneumoconiosis, silicosis and nystagmus.

When war broke out in 1914 the coal mines in Britain were taken under government control. This resulted in increased safety standards for miners and a uniform rate of pay for miners which ever area of the country they worked in.

In 1921 the mines were handed back to their original owners and this was followed by a period of depression in the coal industry. Conditions for the miners deteriorated again and wages were cut and the length of hours worked extended. In 1923 a further Act of Parliament banned boys under 14 from working underground and made the working day for women and children above ground limited to 10 hours.

The General Strike of 1926 forced many smaller collieries to close due to lack of money and other mines to flood. By 1927 250,000 miners were unemployed.

COAL MINING TODAY

The choice of mining method is mainly determined by the geology of the coal deposit. Approximately 60% of the world's coal is mined underground, although in some countries surface mining is more common. In Australia approximately 80% of coal is surface mined and in USA about 67%.

In Britain today coal is mined using longwall advancing or retreat methods where machinery is used to cut and transport the coal to the surface. A colliery can be monitored by computers in a control room on the surface using the Mine Operating System known as MINOS. This system supervises all mining operations underground including coal production, transport, water pumping and power distribution. The system also monitors environmental conditions in the mine including ventilation, gas levels, temperature and humidity.

Coalfaces are generally situated a long way away from the main shaft and often miners have to travel more than 10km to reach the coalface. This means that a fast and efficient transport system is needed to transport the miners, their equipment and the coal to and from the coalface to the surface. The coal seams in British mines are usually uneven, often with steep gradients. This makes the system of tunnels easier to navigate using a rope haulage system rather than by diesel or loco.

Often skips carrying up to 26 tonnes of coal are used to provide continuous transportation of coal. The coal is sometimes then stored in large storage bunkers either above or below ground. Most of the coal is then moved out of the colliery using conveyors via a drift.

To cut the coal a power loading machine travels along the coalface cutting the coal and loading it onto a flexible steel conveyor. The roof is held up by self advancing hydraulically powered supports whilst the coal is extracted.

There are two different kinds of approaches favoured today, advance or retreat mining. In advance mining, access roads are cut at each end of the coalface and at right angles to the coalface. These roadways are extended as more coal is extracted. The disadvantage of this method is that maintenance of the roadways can be a problem, as they have to be supported once the coal has been extracted. In retreat mining, two parallel roadways about 200m apart are driven in first along the full extent of the area being mined. The coalface is then mined backwards from the end of the roadways and the roof allowed to collapse in a section when the coal has been extracted from that section. The disadvantage of this method is that it requires high initial investment, as no coal can be cut until the roadways are in place.

In most collieries older and newer methods of extraction are used in different parts of the mine. Also variations can be found between collieries mining the same coalfield.

COAL MINING IN KENT

Geologists first speculated that there was coal beneath Kent in the 1840's but it was not until 1890 that the theory was properly investigated.

In 1880 work began at Shakespeare Cliff on a Channel Tunnel between Dover and Calais. In 1882 the government halted the work while it considered the military implications of a tunnel. With its workers lying idle the company decided to drill bore holes to investigate Kent's geology and both iron ore and coal were found in 1890. Shareholders of the Channel Tunnel Company prevented the company exploiting the coal and in 1896 Arthur Burr set up the Kent Coalfield Syndicate to buy the mineral rights and establish a colliery at the old tunnel workings.

During the next 25 years the Kent Coalfield came close to being abandoned on numerous occasions. From 1896, more than 45 test bores were carried out in East Kent and at least 10 collieries were started. It would take 16 years of continual investment before any commercial coal was raised to the surface.

Part of the problem was that the coal was very deep down, in thin and undulating seams and was difficult to mine. More serious were the vast underground lakes of water held in the chalk and greensand beds. Water was an unexpected problem in 1896 but was to become the chief problem of the Kent coalfield. Water could pour into a shaft at the rate of a million gallons a day, producing flash floods, which on occasions, killed miners and filled 1000 feet shafts to surface level within minutes. They also produced a constant stream of water, often as high as 250 gallons a minute. This taxed pumps to their limits leaving miners wading in water and in constant fear of the pumps failing.

Shakespeare Colliery, also known as the Dover Colliery, was Kent's first coal mine started in 1896. Two shafts were sunk, but the first shaft hit water at 366 feet and flooded. Due to poor investment the sinkings were all done on a shoestring budget and the cost of installing pumps had not been allowed for. Still with no pumps installed the 2nd shaft hit water in 1897 at 303 feet. The water filled the shaft so fast that 8 of the 14 sinkers working at the pit bottom were drowned and only 6 rescued by the hoppit bucket.

It was not until 1902 that a new process was adopted using cast-iron tubing to line the shaft as it was dug and seal it off from water in the rocks. Using this method the first coal seam was hit on the 25th September 1903 but it proved uneconomic. Sinking through the coal seams continued and in 1907 it was producing about 8 tons a day, less than the colliery used in its boilers and engines. In 1907 Leney's Phoenix Brewery in Dover purchased the first commercial coal from the pit and advertised their Dover pale Ale as 'brewed by Kent coal'. This was soon quietly dropped when the coal proved

to be of poor quality.

The Shakespeare colliery was supposed to cost £50,000 and to be producing 3,000 tons of coal a day by 1900. In 22 years of working the Shakespeare colliery cost £1 million. The colliery closed in 1909 and was placed in the hands of the receiver. Work commenced again in 1910 but it finally closed in 1915 and was sold for scrap in 1918.

Arthur Burr was a speculator who virtually single-handed kept the Kent coalfield going for almost twenty years despite the threat of economic collapse. Between 1904 and 1910, Arthur Burr started five more collieries including Snowdown and Tilmanstone, each time running into the same problems. None of his collieries managed to produce coal for commercial sale until 1912.

The strain of keeping the press and shareholders happy while not making any income for almost 20 years forced Arthur Burr to adopt a complex and highly suspect system of forming new companies to undertake small elements of the process of extracting the coal. One company would own the mineral rights to a colliery, another would sink the shafts, another lay the rails, another build the surface buildings and so on. This meant that one of his companies could charge for digging a shaft, the bill being paid by another of his companies. Essentially he had become his own customer to ensure money moved around and profits could be shown.

At one point in 1910 he was Managing Director of 22 different companies. All of these companies had his Kent Coal Concessions Ltd. as a major shareholder. Investors began to realise that any profits generated by the Kent coalfield would be tiny when split between all the shares flying around and Arthur Burr was accused of being a conman.

In 1913 Arthur Burr was given the freedom of Dover for being 'one of the greatest benefactors Dover had ever known' and at the dinner held to celebrate this Sir Arthur Conan Doyle sang his praises. Arthur Burr was convinced that Kent coal was going to bring wealth and riches to himself and East Kent and promised that Dover would become the 'Liverpool of the South' and one of the 6 biggest cities in Britain.

Just a year later in 1914 he was forced to resign from all his posts and faced several legal actions for fraud and misuse of funds. He was described as a 'dangerous rogue' by the judge, he had judgements of £80,000 made against him and was declared bankrupt. He died in 1919 with many legal actions against him still outstanding.

There were no miners experienced in mining in Kent when coal was discovered in 1890. All the workers had to be imported from traditional mining areas such as Wales, Scotland, Durham, Yorkshire, Lancashire and the Midlands. With the coal industry then booming few had incentives to come to Kent so collieries here had to pay higher wages. Uniquely Kent became a mix of traditions (often widely different) of all the coalfields in

Britain. Working conditions at Kent pits were amongst the worst in the country and working practices old fashioned compared to the pits in the areas where many of the men came from.

With projections of up to 50,000 miners being required, one of the biggest problems facing the industry was where to house them. Workers at the Shakespeare colliery all lived in Dover and the Town Council expected the workers at the later pits of Guildford, Snowdown and Tilmanstone to also live in the town. Arthur Burr wanted the workers to live closer to the pits and he leased Elvington Court near Tilmanstone and fitted it out with dormitories. He then began to build small estates at Elvington, Woolage, Stonehall and Snowdown.

With the opening of Betteshanger and redevelopment of Tilmanstone in the 1920's the demand for miners grew. Men came from all over the country particularly after the general Strike of 1926 when blacklisted militants unable to work in their home areas came to Kent often signing on under false names. Poverty and desperation meant many walked hundreds of miles unable to afford train tickets.

The arrival of these rough and ready 'foreigners' initially horrified the locals especially as all the collieries were located in rural areas near sleepy villages and hamlets. Towns like Deal, where many Betteshanger miners lived, were shocked to find huge gangs of blackened labourers in hobnailed boots marching to and from work through the streets. Signs saying 'No Miners' soon appeared in shops and pubs. To try and reduce the hostility Kent pits were among the first to have pithead baths so miners could go home clean.

Pit villages were developed at Elvington (Tilmanstone), Hersden (Chislet), Aylesham (Snowdown) and Mill Hill (Betteshanger) to house around 6000 miners now working in East Kent.

The Tilmanstone Miners Dwellings Syndicate was formed to build a colliery village of 230 houses at Elvington. Snowdown miners did largely live in Dover until Aylesham was started in 1926. This was an ambitious model town of 3000 houses meant to serve Snowdown and a new pit at Adisham. The Adisham pit never materialised and Aylesham was only partly finished providing 650 houses. Because it was built in the middle of farm land Aylesham was very isolated and so every attempt was made to make it self-sufficient, ensuring it had its own shops, social clubs, schools, churches, sports facilities etc.

Chislet colliery too was isolated and most of its miners had to live in Ramsgate and travel in by train. A 1000 house village, later named Hersden, was planned for a site opposite the colliery but only 165 houses were built.

Betteshanger miners initially lived in Deal but got a very poor reception from the locals. Betteshanger colliery village was built to provide housing for the mining officials. In 1929 Mill Hill was purchased by the Snowdown and Betteshanger Tenants Ltd

for 950 houses plus social and sports facilities. Originally isolated farmland on the outskirts of Deal, it has now become well absorbed into the town boundaries.

In 1925, government plans predicted 18 pits in East Kent and a requirement for an additional 55,600 houses for miners. These were to be provided by a range of new towns such as New Wingham (20,000 residents), New Woodensborough (12,000 residents) and a redevelopment of the tiny hamlet of Ham into a massive town of 31,000.

Due to the initial isolation of these mining villages they developed a very strong identity and a self-sufficient close-knit sense of community.

Kent coal was some of the most difficult to extract and hence some of the most expensive in Britain. The whole industry was always close to failing for the first 50 years of its life. In 1947 the entire industry was nationalised but the National Coal Board made plans to start closing the Kent collieries as early as 1960.

Chislet colliery's biggest market was British Rail and when steam locomotives disappeared between 1966 and 1968 the colliery could no longer survive. It closed in 1969 and most of its men were transferred to the three other Kent pits.

By 1975 there were just 3000 miners at Betteshanger, Snowdown and Tilmanstone producing 1 million tons of coal per year. By now virtually all Kent coal was used solely as a coking blend for the steel industry.

By the 1980's both the government and the National Coal Board were determined to make the coal industry viable by closing uneconomic pits whilst the miners and the National Union Of Mineworkers were convinced poor management and investment were holding the industry back. Things came to a head in 1984 when the NUM called a national strike.

The 1984 strike was to last for almost a year and became one of the most controversial and bitter disputes since the General Strike of 1926. When it was over, neither the NCB or the NUM fully recovered. The NCB was reorganised as British Coal in 1987, the year that Snowdown and Tilmanstone collieries closed with little opposition. Betteshanger was the last colliery in Kent, closing in 1989 just one year short of the centenary of the discovery of coal in Kent.

When the Kent coalfield closed it left behind it acres of land ravaged by tips, industrial sprawl and poverty and deprivation in the mining communities. Not only had most of the men in the colliery villages lost their livelihoods, they had also lost the finance for the social clubs and sports facilities which had been paid for by a levy on miner's wages and by British coal.

Various government agencies and charitable trusts have been established with funds for redeveloping former coalfields.

Projects include developing new skills, training and education, creating new jobs and opportunities; and maintaining and improving retail, leisure and sporting facilities within the mining communities. These new bodies include the Coalfield Regeneration Trust, established in 1999 and SEEDA (South East England Development Agency). To help support social and recreational facilities in mining communities CISWO (Coal Industry Social Welfare Organisation).

Some of the major projects in Kent to benefit from these funds include the Aylesham Community Centre, the Betteshanger Social Welfare Sports Club and the redevelopment of the Tilmanstone and Betteshanger Colliery sites. At Tilmanstone SEEDA have landscaped the site and started the Pike Road Industrial Estate. One of the residents of which is Kent Salads whose factory employs over 500 people. SEEDA is also developing the Betteshanger colliery site, the colliery being redeveloped as a mixed industrial and leisure site whilst the massive tip is being landscaped as a nature park and open space. At Aylesham the Aylesham community project have developed the old school into a community centre with conference and training facilities, small business workshops and a library. At Mill Hill in Deal the sports ground has been redeveloped with new facilities. Smaller projects have varied from new kit for local football teams to improving village halls in coalfield parishes.

If the regeneration of the coalfield and the improvements to the old mining communities are successful, there will almost be no indication that there ever was a coal industry in Kent.



MAP OF THE KENT COALFIELD

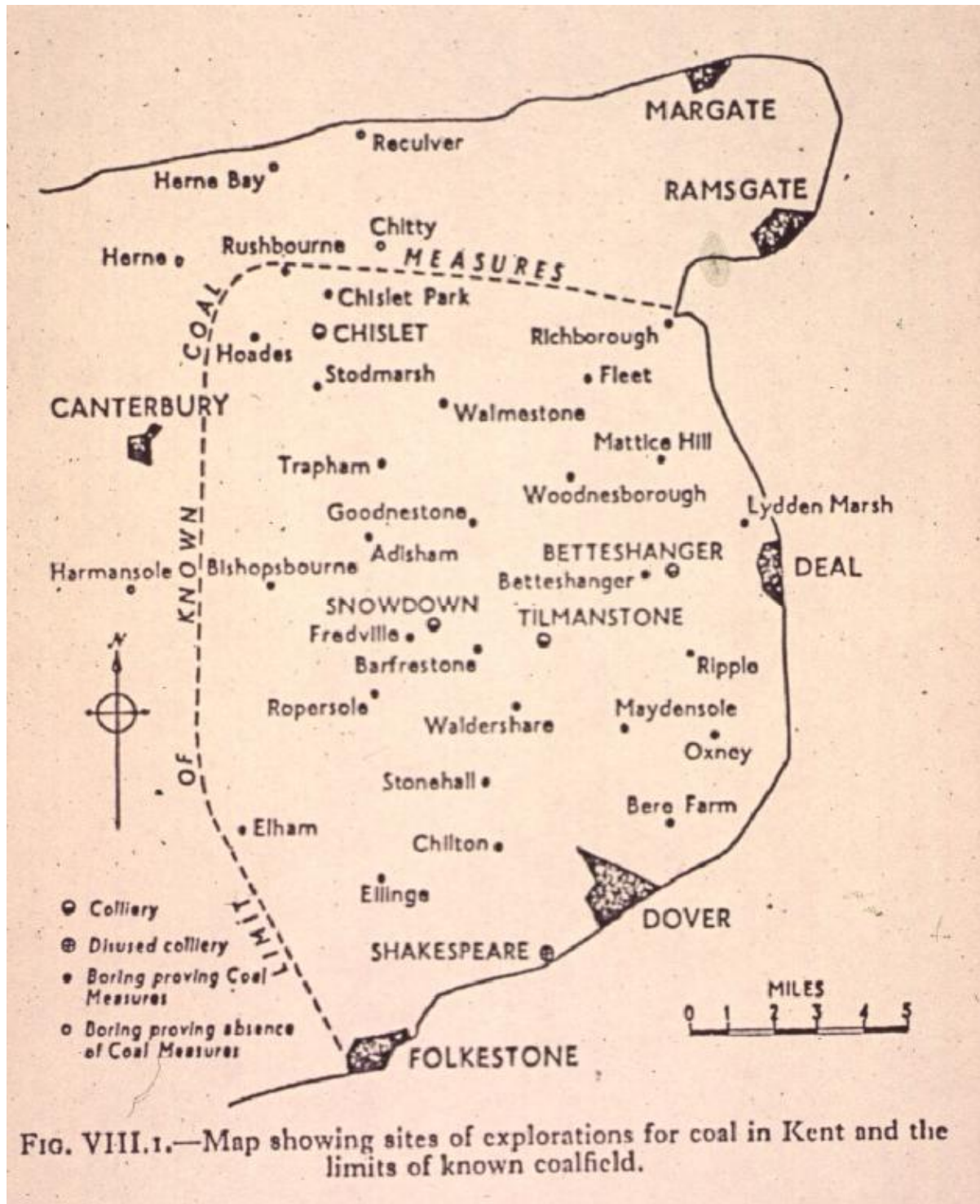


FIG. VIII.1.—Map showing sites of explorations for coal in Kent and the limits of known coalfield.

THE FAILED COLLIERIES

There were initial predictions of at least twenty pits in Kent but the claims for the Kent coalfield turned out to be over-ambitious and over inflated. Four collieries were finally established but another five were attempted.

Guilford Colliery

Guilford Colliery was also known as Waldershare Colliery. It was started by Arthur Burr's Foncage Syndicate in 1906. Due to its location in an isolated rural spot all equipment and materials had to be hauled over farm fields or down muddy tracks, an impossibility in winter. Three shafts were sunk but water was discovered at 1346 feet and work stopped in 1910. It was sold together with Stonehall Colliery to a French company in 1919 who tried to use cementation to seal the shafts from water. This failed and the colliery was abandoned in 1921.

Maydensole Colliery

Maydensole Colliery was commenced near West Langdon in 1910 by Arthur Burr's Intermediate Equipments Ltd. Some surface buildings were erected and boreholes drilled but no shafts seem to have been started before it was abandoned.

Stonehall Colliery

Stonehall Colliery was started in 1913 by two French brothers, a range of surface buildings had been erected by the time WW1 broke out in 1914 and the owners returned to France. Left derelict, it was purchased by the French company that took over Guildford Colliery in 1919. It was abandoned again in 1921 and partly demolished.

Wingham Colliery

Wingham Colliery was commenced in 1910 by another Arthur Burr company the Wingham and Stour Valley Collieries Ltd. A wide range of surface buildings were erected and 2 shafts dug, but when these hit water there was not enough resources to buy and install pumps. It was mothballed until being sold to a grain miller in 1924.

Woodnesborough Colliery

Woodnesborough Colliery was also known as Hammil Colliery. Two shafts were commenced in 1910 by Arthur Burr's Goodenstone and Woodnesborough Colliery Ltd and an extensive range of surface buildings erected. It was mothballed in 1914 and apart from the wooden headgear erected over one shaft was still complete in 1923 when it was sold to Pearson and Dorman Long. They kept the mineral rights and sold the colliery to the Hammill Brick Company.

BETTESHANGER COLLIERY

Betteshanger Colliery was the last of the Kent collieries to open in 1924. It was owned by Pearson and Dorman Long who also purchased Snowdown Colliery and the old colliery workings at Wingham and Woodnesborough at the same time.

Betteshanger Colliery was the biggest Kent mine, with shafts of 24 feet in diameter. It flooded twice during sinking but by using the cementation process to seal the shaft sides through the water bearing rocks, the pit progressed quickly and coal was reached in 1927.

1500 miners and their families came down to Deal almost overnight. Deal was then a genteel seaside resort and the arrival of these rough and dirty men with unintelligible accents, horrified many of the residents. Lodging houses, cafes and pubs soon had signs up saying 'no miners', while butchers and grocers sold the worst quality goods as cheap miner's specials.

Deputies houses were built close by the pit but it was not until 1929 that the farmlands of Mill Hill on the outskirts of Deal were acquired for a colliery estate.

Opening in the 1920's, Betteshanger attracted a lot of the hard-line union men blacklisted in their home areas after the 1926 General Strike. Consequently, the Betteshanger miner's were often regarded as the most militant in Kent. Betteshanger was the only pit to strike during World War Two, which resulted in three union officials being imprisoned and over 1000 men being given the option of a fine or hard labour. All but nine refused to pay the fine and in the face of having to find prison spaces for 1000 men, the government decided to take no action and also to release the three imprisoned men.

Betteshanger was the last of the Kent collieries to close in 1989.



CHISLET COLLIERY

Chislet Colliery was begun in 1913 by the joint English-German company Anglo-Westphalian Kent Coalfield Ltd. Chislet encountered few of the usual Kent problems in sinking shafts, using cementation to seal the shaft walls against water. It reached coal at 411 metres (1350 feet) in 1919.

The company was reorganised in 1914 as the North Kent Coalfield Ltd after German interests were removed because of the war. It later changed its name to the Chislet Colliery Ltd.

Many Chislet miners were Welsh, as Welsh colliery companies held shares in the Chislet company and developed a close working relationship. The majority of the miners lived in Ramsgate until 1924. That year the Chislet Colliery Housing Society was formed to build a small colliery village of 300 houses at Chislet. This was later renamed Hersden to distinguish it from the original village of Chislet up the road.

Chislet Colliery was the first pit in Kent to open pithead baths in 1924. They were among the first in the country, allowing miners to clean up at work rather than at home as was traditional.

The company always struggled, as it was never financially sound. After nationalisation in 1947 the colliery was extensively modernised but the end of steam trains in 1968 took away what was most of its market. The colliery closed in 1969 and 1550 men transferred to the other three pits.

The colliery was demolished and a small industrial estate now occupies part of the site. Located on the marshes of the River Stour, the tip is now a nature reserve.



SNOWDOWN COLLIERY

Snowdown Colliery was begun by Arthur Burr's Foncage Syndicate in 1907. The first shaft hit water at 260 feet and flooded. It was then taken over by another of Arthur Burr's companies, the Snowdown Colliery Company. There were few sinking problems after this and Snowdown became the first commercial pit in Kent, producing coal from 1912.

In 1921 miners at Snowdown went on strike over reduced pay, The company went into receivership and closed the colliery in 1922 maintaining pumping operations so it could be sold as a working mine. It was mothballed for almost two years before it was purchased in 1924 by Pearson and Dorman Long who had started a new colliery at Betteshanger.

Pearson and Dorman Long completely modernised the colliery and built Aylesham village nearby to house 650 families. Prior to this most of the Snowdown miners had lived in Dover.

Snowdown was the deepest colliery in Kent reaching well over 915 metres (3000 feet). It was also the hottest pit in Kent and was given the name 'Dante's Inferno' by the miners. Regarded by many as the worst pit to work in in Britain. Most Snowdown miners worked naked because clothes became too uncomfortable and they could consume around 24 pints of water a shift. There were frequent cases of heat stroke.

Snowdown Colliery closed in 1987. Snowdown is the best preserved of the Kent collieries. Unusually, the lease was not converted to the National Coal Board Freehold after nationalisation in 1947. Negotiations with the landowner had prevented its redevelopment since its closure. Snowdown has now been purchased and the old mining buildings, which remain, are to be demolished.



TILMANSTONE COLLIERY

Tilmanstone Colliery was also known as the East Kent Colliery. Tilmanstone was begun near the village of Eythorne in 1906 by Arthur Burr's Foncage Syndicate and then managed by his East Kent Colliery Company Ltd. Like all the Kent collieries it suffered from bad geology and poor investment. In 1909 a hoppit fell down the shaft killing three men and destroying the pump pipes. A 1000 gallons of water a minute poured into the pit and work was abandoned for 9 months.

Work on sinking the shaft started again in 1910 but it kept hitting water which brought with it tons of sand. Sinking continued to be a struggle until electric pumps were installed in 1912.

The coal seams were reached in 1912 and in March 1913 the rich Beresford seam was reached at a depth of 476 metres (1560 feet) and commercial production of coal commenced. Despite this the company was in serious financial trouble and went into receivership in 1914. Arthur Burr was dismissed and the shareholders rescued the company and took over the management.

The colliery still struggled, losing money every year, and in 1926 it was again in receivership and was sold to Richard Tilden Smith and his Tilmanstone (Kent) Colliery Ltd. The rich Milyard seam was hit in May 1930 at a depth of 925 metres (3035 feet).

Tilmanstone was extensively modernised after nationalisation in 1947 but was always considered uneconomic by the National Coal Board. It was planned to close as early as 1967 but survived until 1987



THE MINER'S WAY TRAIL

The Miner's Way is a new walking and cycling trail exploring the rich heritage and landscape of the former East Kent Coalfield. The route will use existing footpaths and bridleways to link together the former mining communities, colliery sites and stretches of the East Kent Light Railway.

The Miner's way Trail can be enjoyed at any time of year. The woodlands look their best in late spring and the hedges are loaded with berries during the spring and look amazing as the berries turn during the autumn.

Much of this arable landscape, profuse with hedges and woodlands has not changed since Saxon times and the names of the villages and hamlets you pass on the route are firmly lodged in their Old English origins.

The landscape of the coalfield area with its mix of soil types and land use supports a range of important habitats and wildlife. Remnant areas of herb rich-chalk grassland are still visible in areas, grazing marsh and calcareous fenlands overlay areas of alluvial soils and even the former colliery spoil heaps support their own mix of interesting and tenacious wildlife.

The planned growth of the East Kent coalfield during the early Twentieth century would have transformed this area into a hive of industrial activity. Today the remains of the collieries, colliery villages and the East Kent Railway built to service them, still stand as monuments to the vision of the late Victorian businessmen and the thousands of miners who walked the length of the country to find employment in the fledgling coalfield.

The trail is approximately 28 miles in length, exploring the picturesque countryside of East Kent, linking together pretty villages, small farmsteads, grand country estates and remains of the areas industrial and mining heritage. There is also a link route creating two shorter walks of around 14 miles each. There are also a series of nine self guided walks exploring parts of the Miner's way Trail. A pack detailing these walks A Rich Seam can be obtained from the White Cliffs Countryside Project.

Development of the Miner's Way Trail has been carried out by the White Cliffs Countryside Project in partnership with Dover Museum as part of the wider Coalfield Heritage Initiative in Kent (CHIK). The trail uses existing public rights of way (PROWs) and has been prepared in consultation with local people and the Kent County Council PROW team.

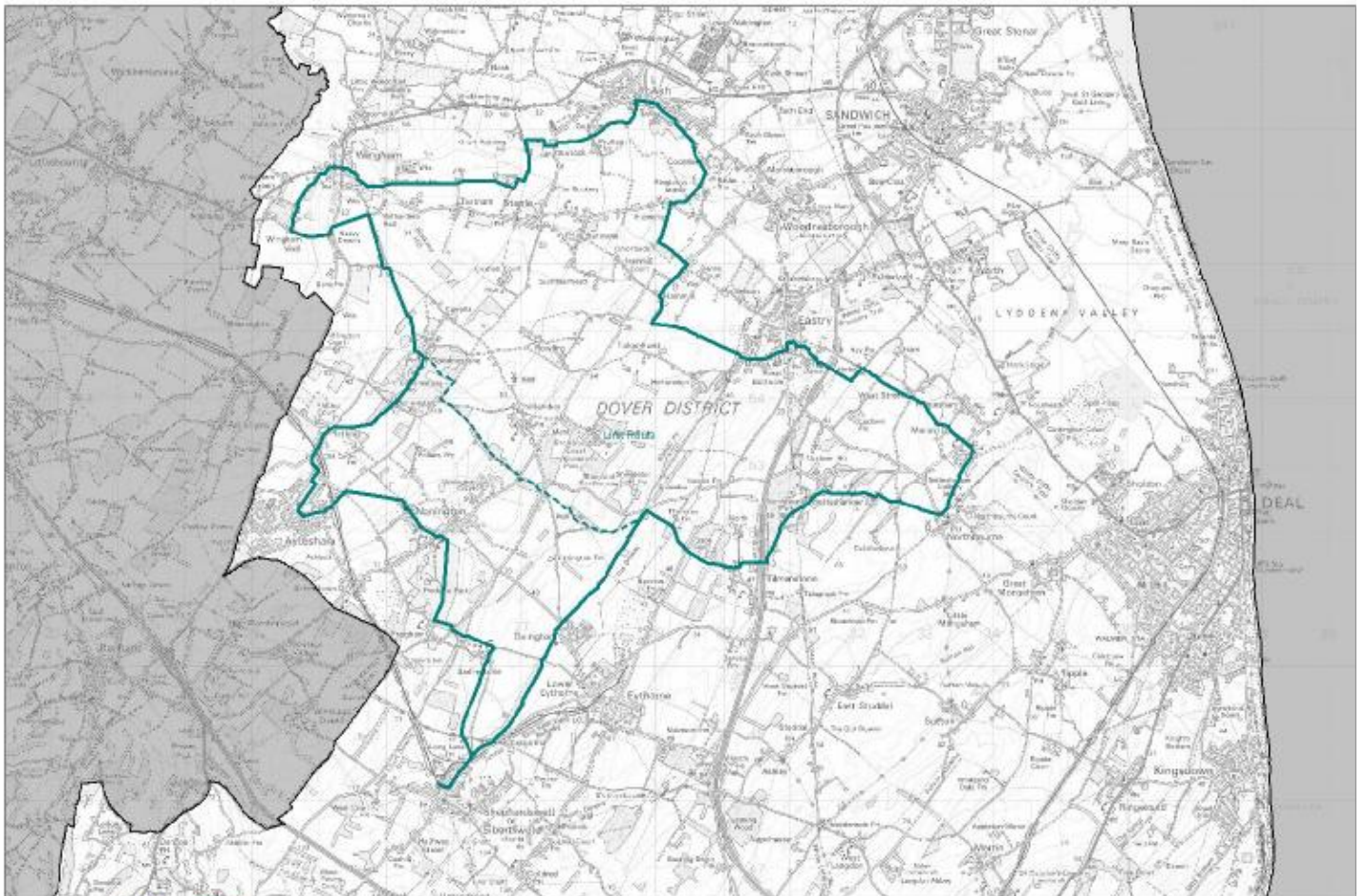
The White Cliffs Countryside Project was established in 1989 to help landowners protect and care for the special coast and countryside around Folkestone and Dover and to make it accessible TO everyone. The project organises a programme of

events including guided walks, cycle rides, family events and practical conservation days. It is a unique collaboration between the local authorities, conservation groups, Eurotunnel and other local businesses.

For more information on the White Cliffs Countryside Project or the Miner's Way can be obtained from 01304 241806 or www.whitecliffscountryside.org.uk



MAP OF THE MINER'S WAY TRAIL



MAIN ROUTE
 LINK ROUTE

WHITE CLIFFS COUNTRYSIDE PROJECT MINERS WAY TRAIL

P1001 1001 P1001
 Drawn By: T.A.W.
 Date: 15 January 2005
 Scale: 1:50,000



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GUILFORD COLLIERY

1900's



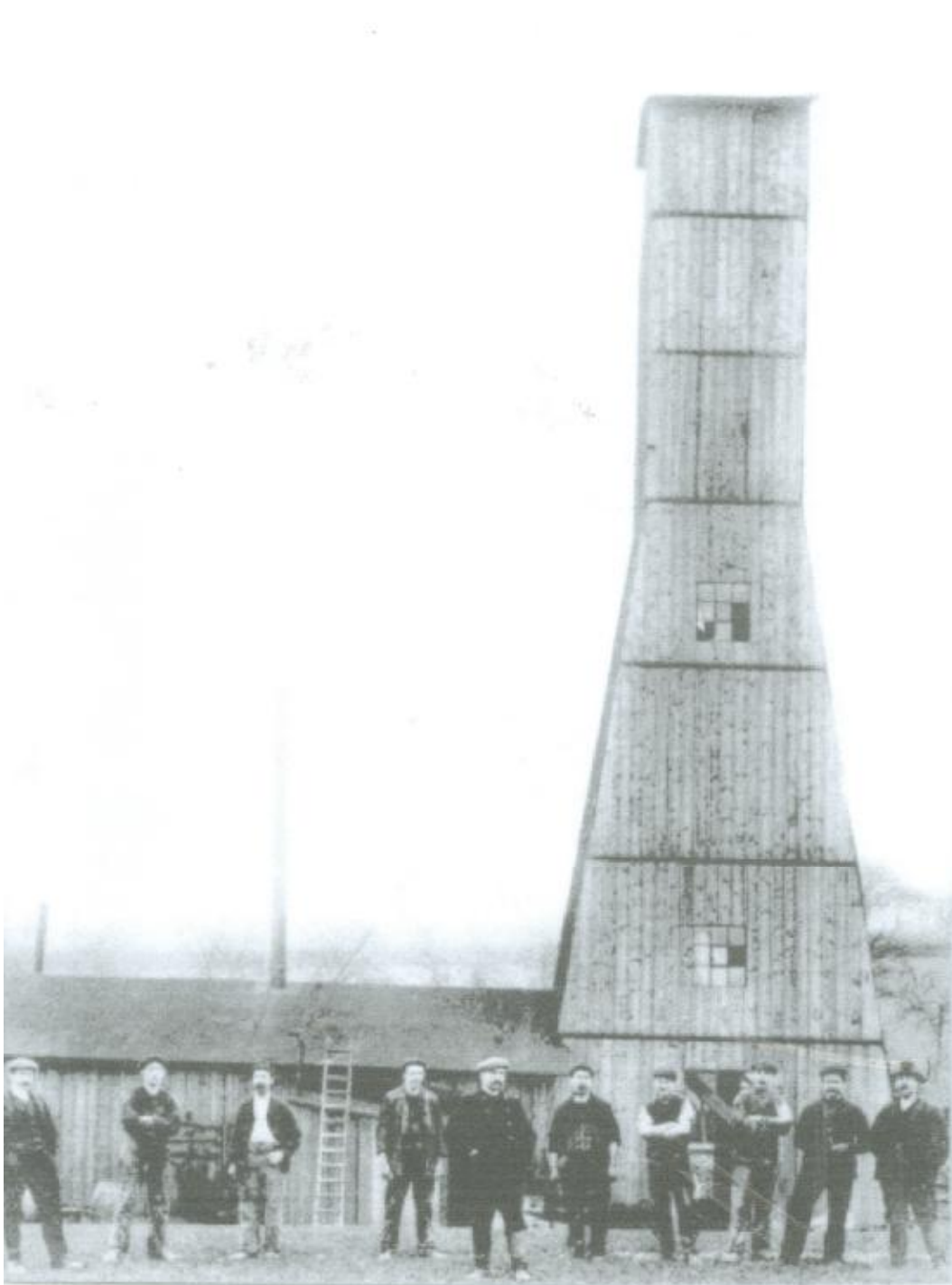
GUILFORD COLLIERY

A HOPPIT FULL OF MINERS 1910



RUSHBOURNE

BORING AT RUSHBOURNE NEAR HOATH, 1900



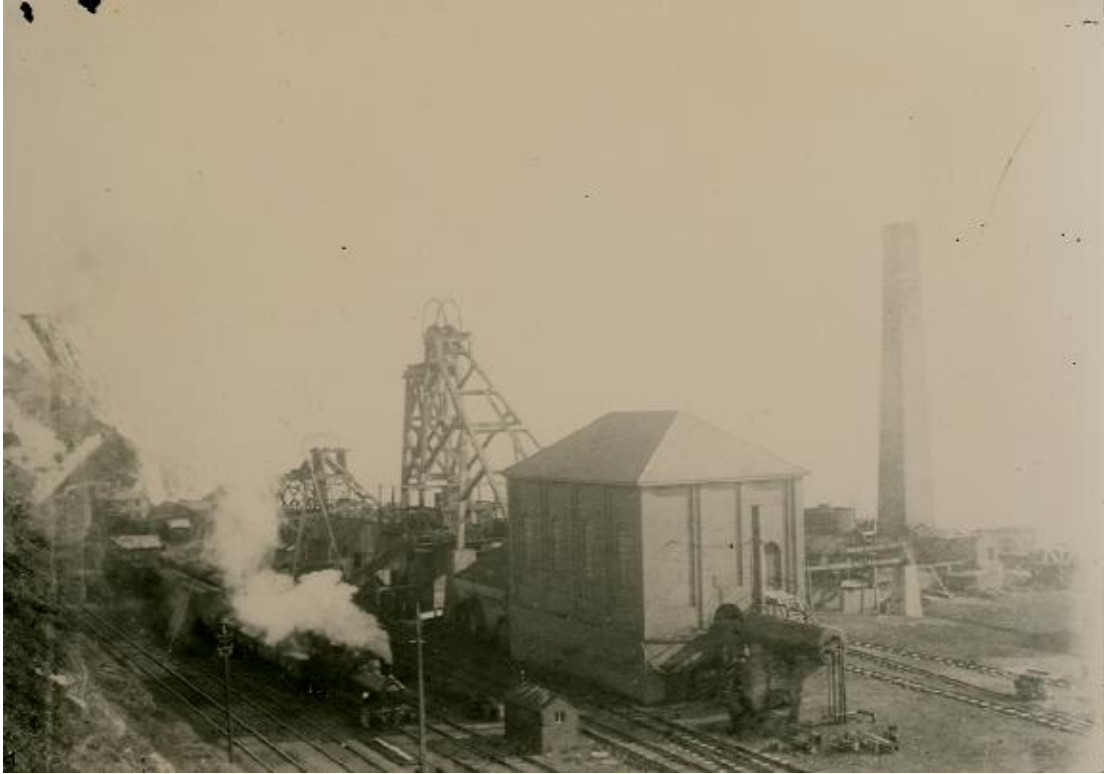
SHAKESPEARE COLLIERY

VIEW OF HEADGEAR, 1908



SHAKESPEARE COLLIERY

VIEW OF COLLIERY BUILDINGS, 1912



STONEHALL COLLIERY
SURVIVING BUILDINGS



STONEHALL COLLIERY

SURVIVING BUILDINGS



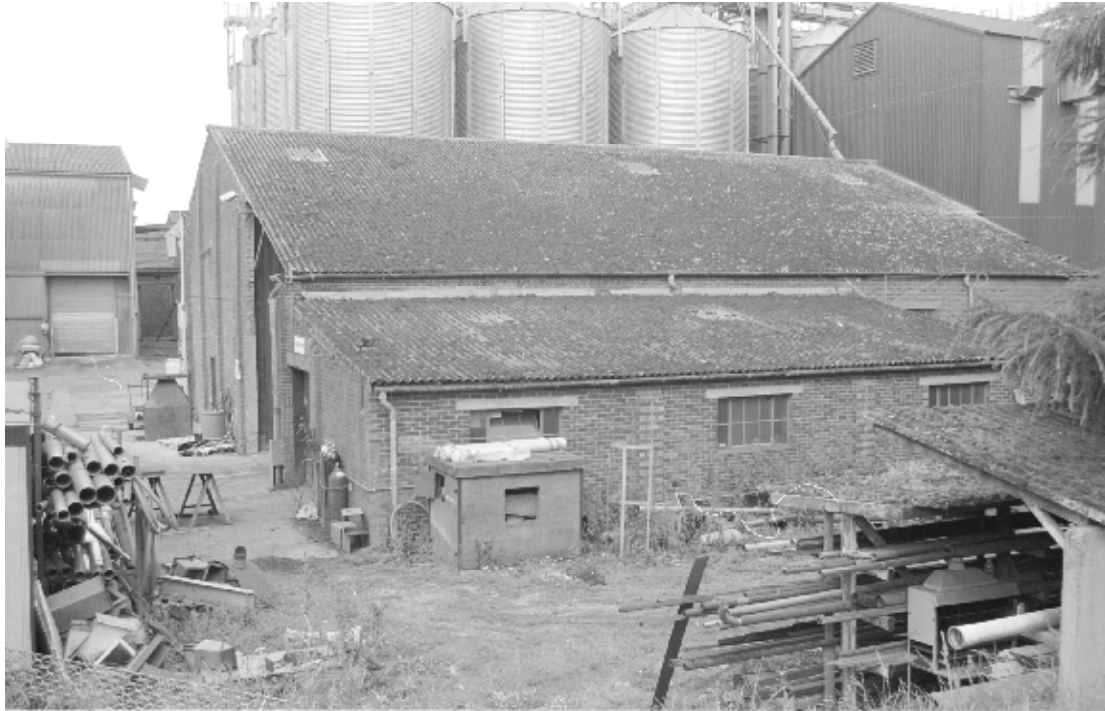
WINGHAM COLLIERY

VIEW OF THE COLLIERY, 1913



WINGHAM COLLIERY

SURVIVING BUILDINGS



WOODENSBOROUGH / HAMMIL COLLIERY

SURVIVING BUILDINGS



WOODENSBOROUGH / HAMMIL COLLIERY

SURVIVING BUILDINGS



BETTESHANGER COLLIERY

AERIAL VIEW, 1920's



BETTESHANGER COLLIERY

BETTESHANGER IN THE LANDSCAPE, 1950's



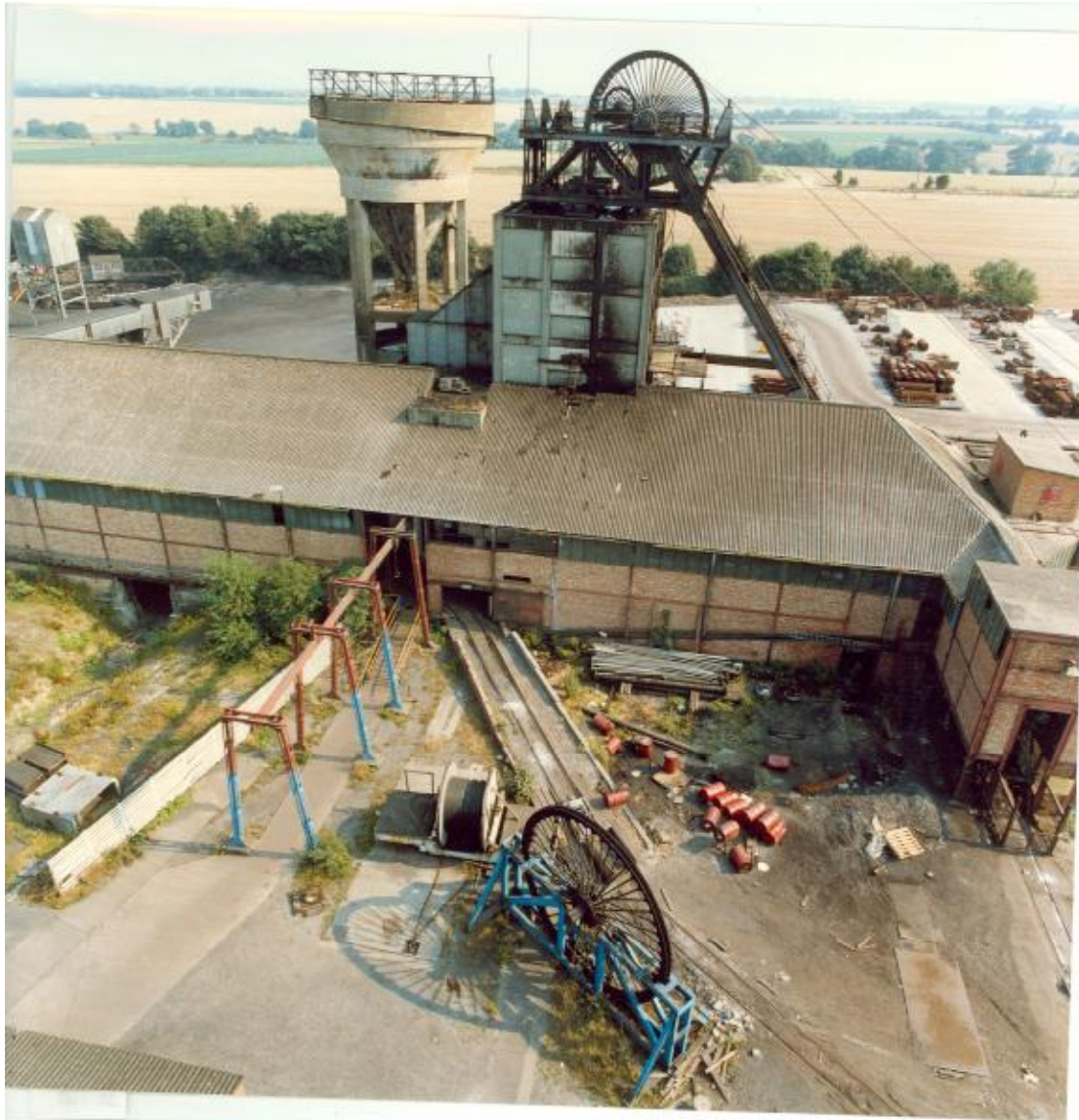
BETTESHANGER COLLIERY

MINER USING A JIGGER PICK, 1970's



BETTESHANGER COLLIERY

NUMBER TWO PITHEAD, 1980's



CHISLET COLLIERY

VIEW OF PIT FROM THE EAST, 1920's



CHISLET COLLIERY

AERIAL VIEW, 1930's



CHISLET COLLIERY

NORTH PIT HEAD



CHISLET COLLIERY

UNDERGROUND PLAN OF COLLIERY



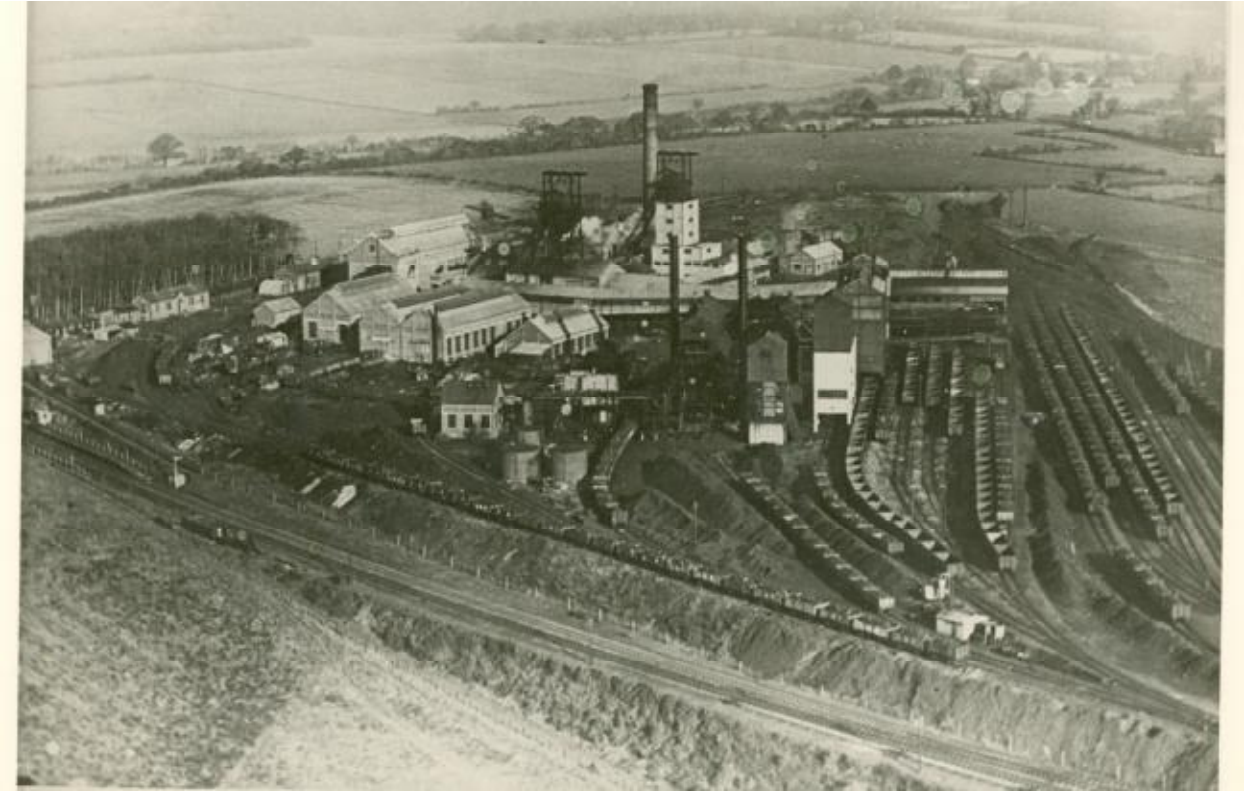
SNOWDOWN COLLIERY

HEAD GEAR BEING ERECTED, 1907



SNOWDOWN COLLIERY

AERIAL VIEW, 1930's



SNOWDOWN COLLIERY

PITHEAD, 1970's



SNOWDOWN COLLIERY

END OF SHIFT, 1972



TILMANSTONE COLLIERY

SINKING OF NUMBER ONE SHAFT, 1910



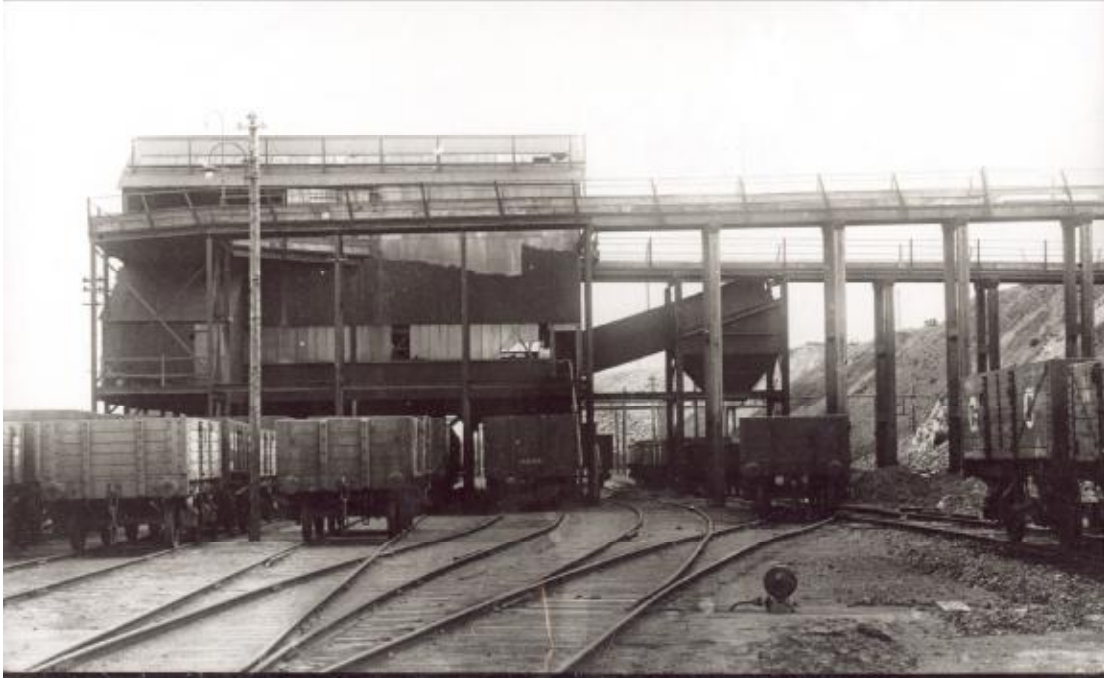
TILMANSTONE COLLIERY

AERIAL VIEW 1950's



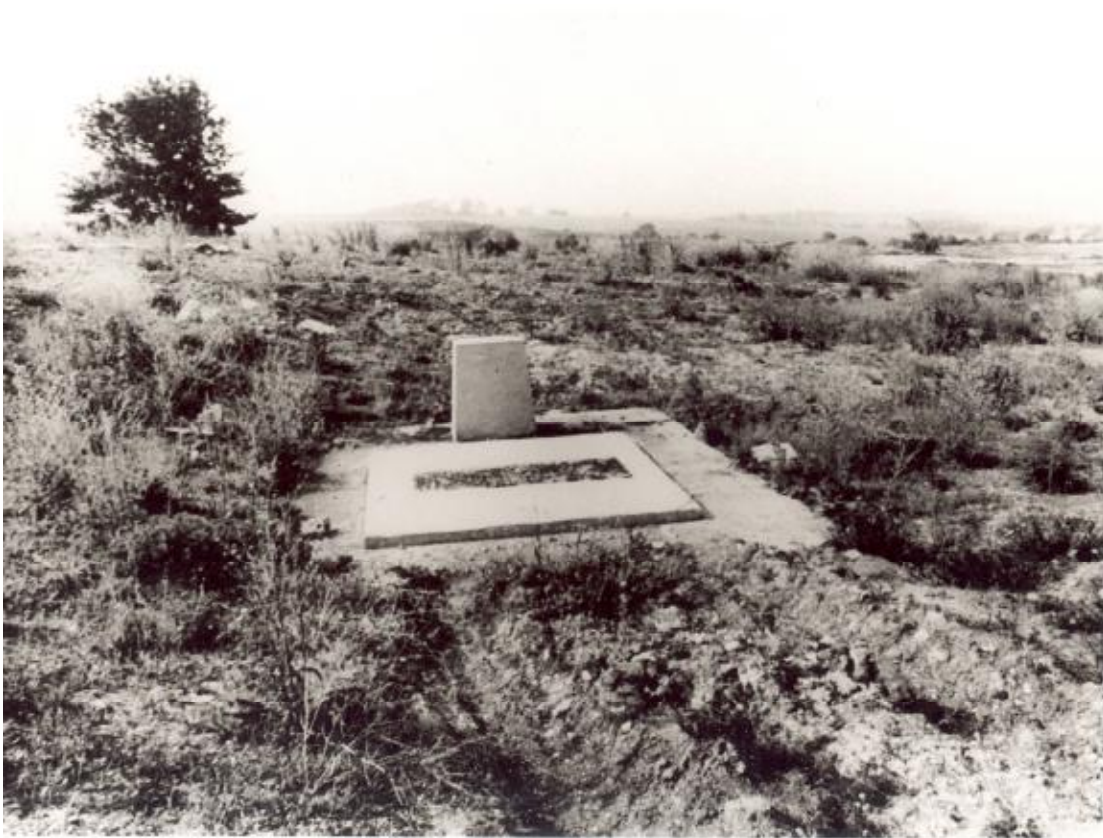
TILMANSTONE COLLIERY

LOADING BAY FOR WASHED AND SIZED COAL, 1960's



TILMANSTONE COLLIERY

ALL THAT REMAINS OF THE COLLIERY, 1980's



AYLESHAM WOMEN ON WASH DAY, 1920's



**TILMANSTONE COLLIERY WELFARE CRICKET TEAM,
1940's**



BETTESHANGER CHILDREN'S SPORTS DAY, 1950's



**CHISLET COLLIERY WELFARE WOMEN'S SECTION
ON TRIP TO SOUTHEND, 1950's**



**CHISLET COLLIERY SILVER BAND IN THE CAR PARK OF
THE BLACK HORSE IN HERSDEN, 1950's**



AYLESHAM FIRST BASEBALL GAME, APRIL 13th 1952



BETTESHANGER COLLIERY BAND, 1960



**MILL HILL WELFARE CLUB COMMITTEE IN MILL HILL,
1960's**



MINERS DURING STRIKE IN MILL HILL IN 1984

