CW/P/12

NATIONAL COAL BOARD

WESTERN AREA

CHATTERLEY WHITFIELD COLLIERY

A REVIEW OF CURRENT PROPOSALS

NATIONAL COAL BOARD — WESTERN AREA

A REVIEW OF CURRENT PROPOSALS AT CHATTERLEY WHITFIELD COLLIERY

1.0 HARDMINE SEAM

1.1 Hardmine No.5 North face is currently being worked. Phased at 20 shears per week, the face will finish in October, 1976.

1.2 Previous plans were to replace No.5 North with Hardmine No.3 South face (off the Wolstanton Connection).

1.3 The Hardmine Seam in the South area has been known for some time to have a high ash content. No.3 South face has been estimated at 12% ash.

1.4 Because of Marketing resistance to working this face, it was decided, during May, 1976, to abandon the development and substitute the Holly Lane Seam in the same area, designated Holly Lane No.3 South.

2.0 HOLLY LANE SEAM

2.1 Access to the Holly Lane Seam is from the existing Hardmine Seam Roadways. The seam is approx. 90 ft. above the Hardmine.

2.2 The development teams have already switched from the Hardmine Seam Development to the Holly Lane Seam Development.

2.3 Phased at 15 yds. a week in the cruts and 20 and 30 yds. a week on the face, production should start late December, 1976. This gives a gap in production between Hardmine Seam and Holly Lane Seam.

It is expected that this gap will be reduced.

2.4 At a planned 20 shears a week, Hardmine No.5 North will finish in October, 1976. Discussions have been held with N.A.C.O.D.S. and N.U.M. and they were told that advances of 20 yds. a week are required in the cruts to guarantee continuous production.

2.5 Holly Lane No.3 South is 258 yds. long, the working section is expected to be 38 inches. At 4 shears per day, the output will be 780 tons.

2.6 The life of Holly Lane No.3 South cannot accurately be forecast.

Faulting was proved over a very short line in Hardmine No.2 North Face and there are difficulties in projecting this into the Holly Lane No.3 South area.

It is assumed in this exercise that the face will finish in June, 1978.

3.0 FUTURE PROPOSALS

3.1 The only areas available for direct replacement of No.3 South Holly Lane are:-

(a) The Hams Seam to the North of Wolstanton Connection.

(b) Two short panels in the Holly Lane Seam, to the South of the Wolstanton Connection.

(c) The Ten Feet Seam to the rise of the area now being worked to Wolstanton Colliery.

3.2 It is assumed that the remainder of the Hardmine Seam is not to be worked, unless the Coal Preparation Plant facilities can be made available.

4.0 TEN FEET SEAM

4.1 Any plans to develop the Ten Feet Seam from existing Chatterley Whitfield roadway contain great lengths of crutting, (the Hardmine seam is 100 yds. below the Ten Feet Seam), which could result in the pit having possible water problems (see Surveyor's Report). The Ten Feet area overlies the first Cockshead Face to be worked to Wolstanton.

If it were possible to develop the Ten Feet Seam for July, 1978, there could be interaction from the Cockshead Seam.

Any development of the Ten Feet Seam from Wolstanton Ten Feet roadways would entail the maintenance of the existing Ten Feet dips, which are in very poor condition, but it may be feasible to drive scourings and thus make new roadways in 51s area.

In any event, development of face room by July, 1978, is not feasible.

5.0 HOLLY LANE SEAM

5.1 The South Holly Lane Seam is only expected to be around 36 inches thick but of acceptable quality in the two short life panels.

5.2 They could be developed in time to replace Holly Lane No.3 South but there will be interaction with Wolstanton Bowling Alley. Access would be from the Wolstanton/Chatterley Whitfield connecting roadway and from the Northern Area Intake Crut.

5.3 We would not have had experience of working this seam at the time it would be necessary to start the development.

6.0 HAMS SEAM

6.1 From mining considerations the Hams would appear to be the better long term prospect but there are serious difficulties regarding quality.

The Hams Seam is well proven in the area to the North of the Chell Heath Fault (the area worked to Victoria Colliery).

In the area under consideration, South of the Chell Heath Fault there is only one proving, No.9 Borehole from Wolstanton Ten Feet.

6.2 Consideration has been given to accessing from Wolstanton or Chatterley Whitfield but drivage from Chatterley Whitfield roadways, which are 100 yds. below Wolstanton, would be longer.

6.3 Alternative (1) Plan 1 Using Chatterley Whitfield roadways as a return, the crut would be 450 yds. at 1 in 3. The intake crut would be to the

Wolstanton roadways, 250 yds. at 1 in 3.

The access for the men would be steeper than planned from Wolstanton.

The quality problem is as stated in Ref. 7.1-4.

The water problem is as stated in Surveyor's Report.

For the above reasons this does not appear to be a feasible alternative.

6.4 Alternative (2) Plan 2 Accessing the Hams via the Wolstanton Roadways - Drivages - Proposed Scheme - drivages for the first face consists of:

Intake Crut	520 yds. at 1 in 4
Main Gate	50 yds. in Seam
Return Crut	260 yds. at 1 in 2¾
Return Gate	50 yds. in Seam
Face Line	250 yds.

The roadways can be driven by the existing Chatterley Whitfield development teams, starting in January, 1977, or earlier if Holly Lane No.3 South Face starts before December, 1976, but working via Wolstanton.

The quality problem is as stated in Ref. 7.1-4.

6.5 Alternative (3) Plan 3 Accessing the Hams from the Chatterley Whitfield Hardmine. Involves driving 2,500 yd. cruts and a large amount of inseam drivage.

This plan has been discarded for the following reasons:-

Disadvantages

(1) Drivage cannot be achieved in time.

(2) Coal transport route not acceptable.

(3) Method does not enable Ten Feet Seam to be accessed.

Advantages

(1) It would enable the better quality Hams coal to be worked first.

6.6 Alternative (4) Plan 4 Accessing the coal off the old 8300 crut and from 52s Main Gate at Wolstanton. Involves 365 yds. of crutting and 1030 yds. of heading to establish a ventilation circuit.

A simple study of this plan shows its impracticability.

The water problem is as stated in the Surveyor's Report.

The quality problem is as stated in Ref. 7.1-4.

6.7 During development and production periods there will be additional duty on Wolstanton services with all the alternative schemes.

7.0 MARKETING/QUALITY

7.1 No.9 Borehole - Hams Seam

40" coal	7·3% ash
12" inferior coal	24·4% ash
4" dirt	
5" coal	7·2% ash

7.2 The seam is expected to increase in thickness and quality in the northward direction.

At best, in the Victoria Colliery area, there is 72 inches of clean coal.

7.3 The geological assessment in the proposed area is for a Washed Smalls quality as follows:-

Start line for the faces:

Thickness 54 inches 12% ash 1·0% sulphur 501 Rank

700 yds. North of the start line for the faces:

Thickness 66 inches 5% ash 1·2% sulphur 501 Rank

7.4 The Washed Smalls produced from the coal on the face start line will be by themselves too high in inherent ash to be defined as a coking coal. They will of course be blended in with smalls made from other seams, but unfortunately the result will be to push the average ash of the total blend made via the Wolstanton plant beyond a point where they will be saleable. Therefore the presence of the Hams component in the mixture will jeopardise sales of the whole of the Wolstanton output of smalls i.e. the same consequences as the inclusion of the South Hardmine coal.

7.5 The Hams face coal cannot be wound separately.

7.6 We do not know with any precision where the improvement in quality takes place. Before any access and layout can be planned our knowledge of this change in quality must be improved.

8.0 SUMMARY OF ALTERNATIVES

8.1 It is proposed, therefore, that if the Hams Seam is to be worked, the problems to be resolved are:-

(a) Quality

(b) Access

(c) Water

9.0 VENTILATION

9.1 Ventilation Branch are currently considering the long term requirements in the Wolstanton Northern Area taking into account the various alternative proposals.

10.0 SUBSIDENCE

10.1 The area to be worked in the Hams, Ten Feet, Bowling Alley and Cockshead Seams is under the developed area of Central and North Tunstall.

Within the affected surface area are a number of pottery works of various sizes along with industrial and commercial premises. There are also a large number of domestic dwellings with associated schools, churches and other social purpose buildings.

It is considered that many of the surface properties will be damaged by the workings, but in general, the damage will only be of "slight" intensity.

It is likely that many of the tunnel kilns will be affected by tilting action resulting from the development of subsidence basins produced by the various faces.

Future workings must depend on actual subsidence encountered.

11.0 TRAVELLING TIME

11.1 Travelling time has to be considered and there are clear advantages from using Wolstanton entrance.

12.0 SUMMARY

12.1 The mining evidence indicates that when the South Holly Lane face (3s) finishes, the access to other reserves, Hams, Ten Feet or South Holly Lane, should be from the Wolstanton side.

12.2 Regarding the Hams Seam, the current information on quality is insufficient for a firm commitment to work this seam to be made.

12.3 However, in order to give time for this information to be obtained, it may be possible to work the limited South Holly Lane reserves before firm plans can be made.

NATIONAL COAL BOARD

STAFFORDSHIRE AREA

CHATTERLEY WHITFIELD COLLIERY

The Potential Water Hazard from the Middle Pit Holly Lane Workings.

Since 1967 the Survey Branch and the Planning Branch have considered that water lying in the Middle Pit Holly Lane goaf constitutes a potential hazard and have submitted reports in 1967, 1971, and 1973, detailing the facts. This report is a summary of events to date together with an outline of possible methods of containing the hazard.

Background:

Prior to 1963 pumps were sited in the Holly Lane Main Dip in the Middle Pit at No.s. 4, 5, and 6 levels. (See Plan). The water was pumped in stages to No.4. level from whence it was pumped to the Middle Pit Bottom. Some water found its way to the Hesketh and Banbury Moss Cruts which are at the same level as each other.

In 1963 pumping was discontinued at No.s. 5, and 6 levels and the water rose to No.4. level where pumping continued until about 1967 when this pump was withdrawn. At the time pumping ceased at No.s. 5 and 6 levels, lodges were driven in the Banbury Moss Crut at the Holly Lane and Hardmine contacts into the goaf so that water could find its way to these lodges and be dealt with. After the withdrawal of the pumps the lodges remained dry for a considerable period. Water appeared at the Hardmine lodge but the Holly Lane remained almost dry until 12 months ago, when a small quantity of water began to appear.

After 1967, nothing was known of the water build up in Holly Lane Dips and reports were submitted by Mr. Harrison, Senior Surveyor in 1967 and 1971 and by Messrs. Harrison, Leeming and Murfin in 1973, pointing out the hazard.

Following these reports, meeting have been held by Mr.Monks, Production Manager, to try to resolve the problem. As a result it was decided to recover the Holly Lane Return Dip in late 1973, to ascertain the water level. This was eventually found in Oct. 1974 at the 9250 contour or 550 vertical feet above Hesketh Crut level. In the space of a few weeks water rose up the dip to the 9375 contour or 675 feet above Hesketh level, maintained its level for a few weeks and then began to fluctuate.

There were indications during recovery operations that the water had been considerably higher than the 9375 contour. To date the precise level of the water is not known because the dip has become untravellable from 70 yards below the 9375 contour.

The Hazard:

Water is known to be continually made in the Holly Lane Dips and is known to have risen as high as 675 feet above Hesketh Crut Level, with indications that it has been higher still. This water level is also known to fluctuate.

Despite the direct access made to Holly Lane Goaf from the Banbury Moss Crut at Hesketh Level, no water was encountered until 12 months ago

cont.....

Samples

Present evidence shows an increased amount of roof water at various points on Banbury Moss Crut and this is still increasing. Even so this cannot account for the considerable fluctuations in water level in the Holly Lane Dips.

Apart from seasonal changes it is thought that these fluctuations are caused by obstructions in the old workings being overcome by increased water pressure, allowing voids beyond the obstructions to be filled. It is considered that the possibility of an inrush into the Banbury Moss/Hesketh Cruts cannot be ignored from the Holly Lane or Hardmine goafs with which they are in contact. There is certainly more water about in this region of the cruts which have deteriorated quite markedly of late. Close to this Holly Lane Lodge there is a crut and staple shaft which connect directly to the deepside Holly Lane workings and a little further North two other cruts which cross the High Lane fault to the deepside Holly Lane. There is a possibility that water could break through these points which are situated on a plane of weakness, and inrush through this Holly Lane goaf which is directly connected to present Hardmine workings, therefore no further connection should be made between Wolstanton and Chatterley-Whitfield Collieries.

Possible Methods of Dealing with the Hazard:

The following points were discussed at Mr.Monks meetings:

Although difficult, it should be possible to bore from the 8300 feet horizon to the overlying Middle Pit Holly Lane workings. However these workings are 450 feet vertically above the horizon and the minimum water level is 950 feet above the 8300 feet horizon, so that a water pressure of 412 lbs. per sq.inch would result at the base of the borehole. Furthermore the hole would have to contact an old roadway which in turn would have to be open to allow the water to be drained and pumped to the pit bottom. The nearest services and rails are 800 yards from the borehole site (see plan). It is felt that this solution would not be satisfactory.

The plan should be to contain the water by water dams, one in each of the Hesketh Main Crut, the Hesketh Back Crut and the Banbury Moss Crut, all outbye of the zone where an inrush could occur. Facilities would be provided for pumping water from behind the dams. Provided that these dams were properly designed and constructed they would contain any inrush which might occur onto the cruts.

Water which could pass to the lower side of the High Lane fault and which could cause danger to current workings below, could be contained by four further dams shown on the accompanying plan.

J. ROBERTS.
Colliery Surveyor.

CHATTERLEY WHITFIELD COLLIERY

HAMS SEAM

SCALE: 1/2500

90' Hams
Ten Feet
190' 51' Bowling Alley
19' Holly Lane
30' Hardmine

50' START JAN 77

H.L 450 yds CRUT

RETURN DIP 1 in 3

T.F

1 in 3

NADIR DIP

THIRL MAY 78

130'

START JAN 77

210 yds

250 yds

250'

1 in 4

90' SEAM

250' CRUT

First face in Hams
Start 2 cruts in Jan '77
1 in 3 . 10 yds wk
Seam- Roadways 15 yds wk
Face 20 yds wk
Crut 650 yds 1 in 3
50 yds 1 in 4
Seam 280 yds roadway
250 yds face

Development completed May 78
1 team from C/W
1 team from Wolstanton
using C/W crutters

Hams Seam
Developed off Connection & 52s Tan Fast
Plan No 1


Hams 4
Ten Feet North
Ten Feet South
Hams 3
Ten Feet 57
Hardmine 2N
Hams 2
Holly Lane 35
Hams 1
Bowling Alley 158
Hams - Coal 66
Ash 5%
Coal 54
Ash 12%
S 1.2%
Hams Seam - Inferior Coal Developed in Lower Part of Seam
CHELL HEATH FAULT
RH 20 Op
Holly Lane Cut
Cockshead Cuts
Cockshead Cut
Hams to Ten Feet Intake
Hams to Ten Feet Return
Hams Return
No 1 Lateral 7500 Horizon
No 9 B.H.
Intake to Hams
8300 Cut
386,500
386000
385.500
352,000
351,500
351,000
Reference
Proposed HAMS
Proposed & Existing TEN FEET
" " " BOWLING ALLEY
" " " HOLLY LANE
" " " HARDMINE
" COCKSHEAD
Vertical Interval yds
83
51
19
30
135
Existing Workings shewn
Proposed Workings shewn
Wolstanton & Chatterley Whitfield Collieries
Projected Workings in Northern Area
Scale 1/2500
Plan No 2
June 1976

Chatterley Whitfield Colliery

Hams Seam

Scale – 1/2500

- 90° Hams
- Tan Face
- 190° 51° Bowling Alley
- 19° Holly Lane
- 30° Hardmine

START AUG 76

First Face in Hams

Start 2 Cruts Aug 76

1 lin 3 10yds wk 500yds
2 lin 3 10yds wk 500yds

In Seam Drivage

200' dip at 15° wk
50' Return Level 15° wk
300' dip at 15° wk
150' Main Level 15° wk

Dev complete by April 78

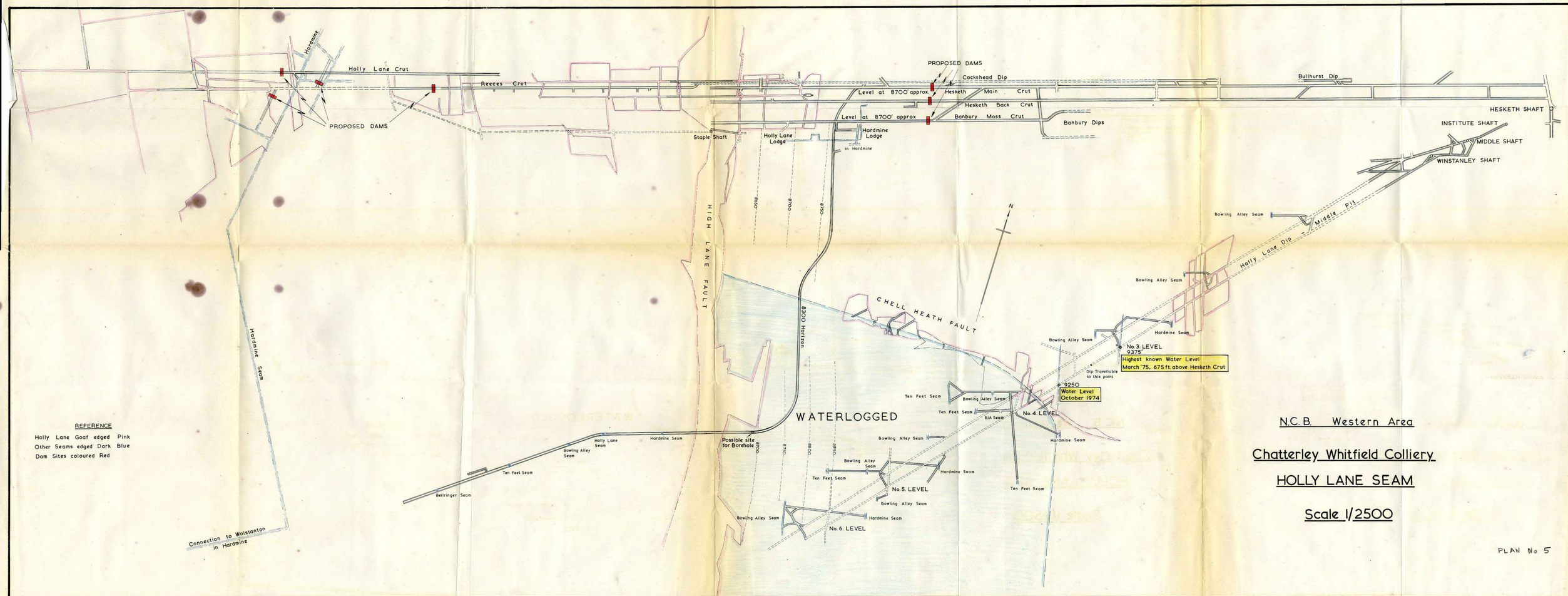
2 Extra Drivage Teams req'd

500' lin 3
500' lin 3
200'
300'
50'
150'
200' July 78
Face Head Thrl April 78

Hams Seam
Developed off RH 20 Dip & 1s South Return

Plan No 3


Chatterley Whitfield Colliery
Hams Seam
Scale 1/2500
Hams
90x
Ten Feet
51x
Bowling Alley
19x
Holly Lane
30x
Hardmine
190x
End
150 yds
No 1 South Hardmine
No 2 North Hardmine
Nov 1977
Mar 1977
Apr 1976
950 yds
213 yds
80 yds
Hams Seam
Developed off 8300' Horizon &
52's Ten Feet
Plan No 4



REFERENCE

Holly Lane Goaf edged Pink
Other Seams edged Dark Blue
Dam Sites coloured Red

N.C.B. Western Area

Chatterley Whitfield Colliery

HOLLY LANE SEAM

Scale 1/2500

PLAN No 5