



NKC Geotech Ltd

engineering geologist specialising in the investigation and treatment of disused mineworkings

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Coal Mining Investigation Report



Plot 6, Coppi Industrial Estate, Rhos

E Jones & Sons
Unit 6
Coppi Industrial Estate
Rhosllanerchrugog
Wrexham, LL11 1TG

2105
27 September 2021



NKC Geotech Ltd

Site

A proposed industrial unit in the yard of E Jones & Sons on the Coppi Industrial Estate, Rhos.

Report, Nkc Geotech investigation and site work by

Neil Catlow B.Sc F.G.S Engineering geologist

Records inspected

Coal Authority at Mansfield

Coal Authority Report 51002347219001 dated 19 January 2021

Denbighshire Records Office, Ruthin

Geological Survey 1875

Ordnance Survey 1875, 1899 and 1912

CIRIA Special Publication 32 'Construction over Abandoned Mineworkings'

My previous investigations in this vicinity:

0576 dated July 1976 for Wrexham Maelor Borough Council

9601 dated May 1996 for E Jones & Sons at Unit 6, Coppi Plot 6

0514 dated July 2005 for E Jones & Sons at Coppi Plot 6

Geology

The site lies on Carboniferous Westphalian rocks that form the Denbighshire Coalfield, dipping to the east at 1 in 8. These rocks are predominantly shales and sandstones containing seams of coal upto 3.0m in thickness at vertical intervals typically varying from 4.0m to 20.0m. The coal seams are of economic importance and given an identity when they are of sufficient quality and thickness to justify extraction by mining from the surface or at depth from mineshafts. The local coal seams under the site are:

Nant Coal, of poor quality not usually mined locally in Rhos, at depths from 6.1m to 8.2m.

Yard Coal, 0.9m thick at depths of 13.6m to 15.0m and extensively mined locally.

Wall & Bench Coal, two high quality coal seams separated by a layer of shale 300mm thick and consequently extensively worked as an upper 'wall' and lower 'bench' at a depth of over 30m.

Llwyneinion Half Yard Coal, only 400mm thick but mined principally for the underlying fireclays. This is the lowest coal seam to be mined in the region and was last worked under the site at a depth according to the Coal Authority of 37m in 1890.

A fault zone with a 10m downthrow east was proved in my 1976 investigation.

Site mining history

Coal mining in Rhos was recorded in 1547 in the Main Coal, but the greatest extraction within 90m of the surface took place in the period 1750 to 1850.

The Coppi Industrial Estate is built over the former Coppi Brickworks which opened in 1872, closed in 1963 and demolished in 1976. The brickworks mined the fireclay under the Llwyneinion Half Yard Coal from shafts within the brickworks until 1931. After 1929 an adit in the fields 500m north of the site was used for fireclay extraction although the former mineshafts remained open and flooded until 1977.

Shaft 328346-041

This is Coppi No.3 Upcast Pit, proved to be 20m west of the site and located and capped by myself for Wrexham Maelor Borough Council in 1977. The shaft was proved by drilling to be 46m deep to the Llwyneinion Half Yard Coal. A wooden horse gin last used in 1936 was still in place in the undergrowth over the shaft in 1976 and subsequently moved to Bersham Industrial Museum for preservation.



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Intrusive investigation

The current intrusive investigation comprised 6 holes to 30m depth over the area of the proposed building.

Weathered brown and grey shale rockhead was encountered at a depth of 3.0m and is overlain by firm brown sandy clays. There is a thin grey shale fill layer overlying the clay.

Solid unworked coal at both the Nant Coal near outcrop and in the Yard Coal 7m below the Nant Coal was proved in all the holes and the small depth variations between the 6 holes may indicate the proximity of the 10m displacement fault zone proved to be present in 1976.

Conclusions

The site is underlain by solid coal in both the Nant Coal and the Yard Coal and no voids or evidence of past mining activity was encountered.

Mineshaft 328346-041 was treated to the contemporary NCB specification and proved to lie 20m west of the site in 1976.

For Nkc Geotech Ltd

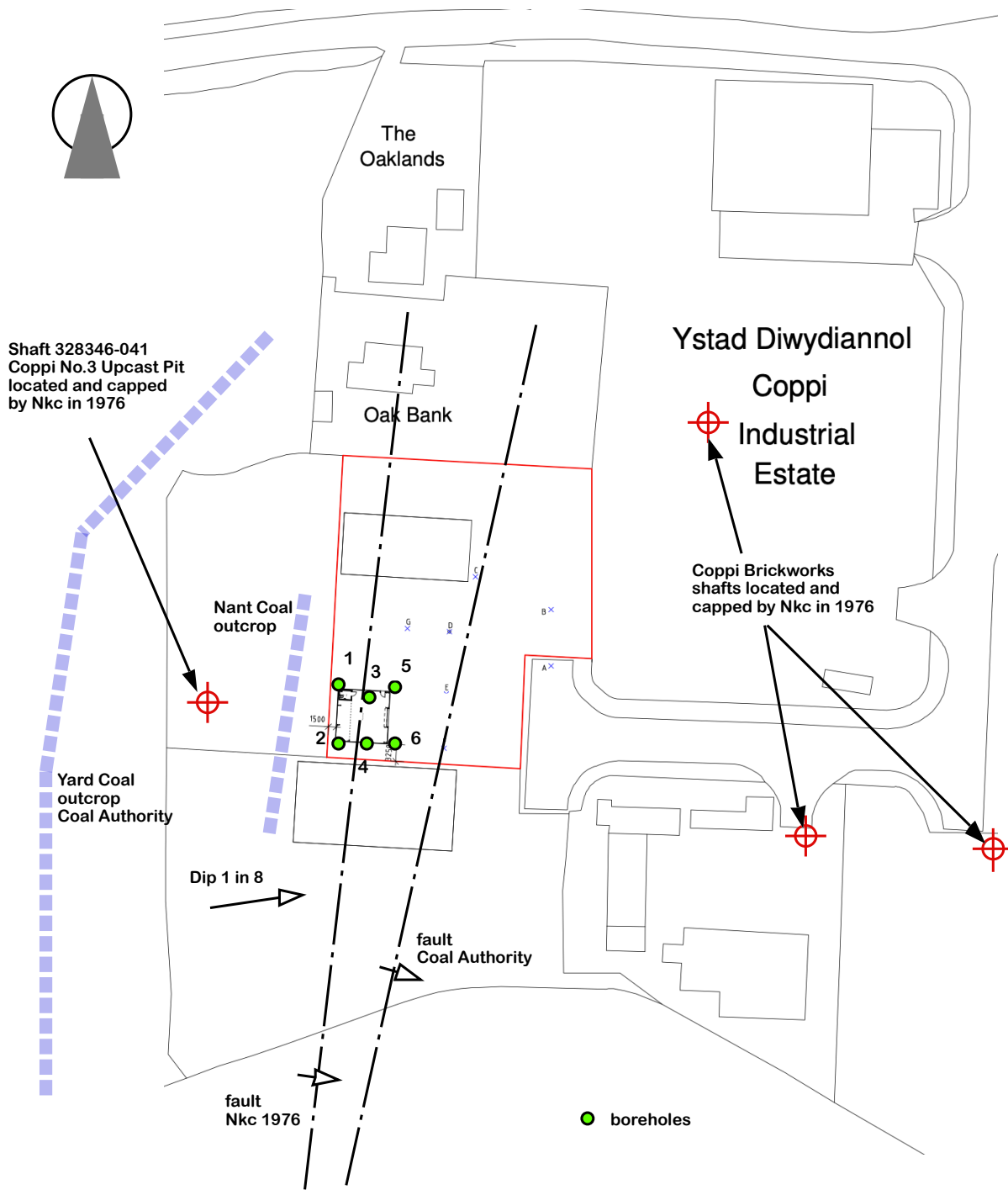


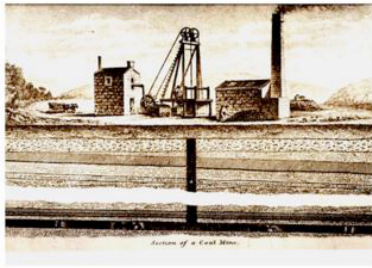
Neil Catlow, B.Sc, F.G.S



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Site plan 1:1250 @ A4





REF 2105
Bh 1

SITE
CLIENT

Plot 6, Coppi Industrial Estate, Rhos
E Jones & Sons Ltd

PRINTOUT
SCALE

22 Sept 2021
1:200

TITLE

ORIGIN

printout direct from rig on site
drilled & logged by Neil Catlow

RIG

Montabert Hydrofore

ORIENTATION

vertical

FLUSH

mains water supply

BIT

75mm T/C

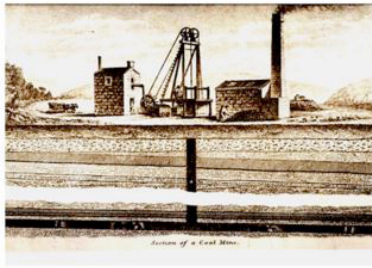
DEPTH	STRATA	GRAPHIC	DESCRIPTION	SPT N value	INTERPRETATION
0.0	0.0	fill	grey shale	not taken	ground level
0.5	0.6	clay	brown, sandy, soft		
1.0					
1.5					
2.0					
2.5					
3.0	3.1	shale	brown, weathered, firm drilling		rockhead
3.5					
4.0					
4.5					
5.0					
5.5					
6.0	6.1	coal	black, firm drilling		Nant Coal
6.5					
7.0	6.8	shale	grey, firm drilling		
7.5					
8.0					
8.5					
9.0					
9.5					
10.0	9.6	mudstone	grey, firm drilling		
10.5					
11.0					
11.5					
12.0					
12.5					
13.0					
13.5	13.6	coal	black, firm drilling		Yard Coal
14.0					
14.5	14.4	shale	grey, firm drilling thin sandstone layers		
15.0					
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27.5					
28.0					
28.5					
29.0					
29.5					
30.0	30.0		bottom of hole		

drilled and logged by
Neil Catlow B.Sc FGS

IN HOLE GAS TESTING

% O2	20.6
% CH4	0.0
% CO2	0.0
% LEL	0.0
ppm H2S	0.0
ppm CO	0.0

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FLUSH

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BIT

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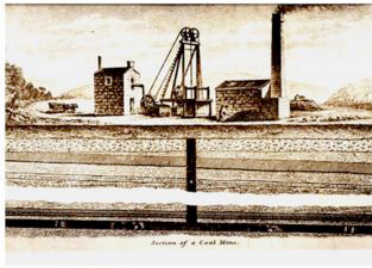
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1.0					
1.5					
2.0					
2.5					
3.0	3.0	shale	brown, weathered, firm drilling		rockhead
3.5					
4.0					
4.5					
5.0					
5.5					
6.0	6.1	coal	black, soft drilling		Nant Coal
6.5					
7.0	6.8	shale	grey, firm drilling		
7.5			mudstone layers		
8.0					
8.5					
9.0					
9.5					
10.0					
10.5					
11.0					
11.5					
12.0					
12.5					
13.0					
13.5					
14.0	14.2	coal	black, firm drilling		Yard Coal
14.5					
15.0	15.2	shale	grey, firm drilling		
15.5			thin sandstone layers		
16.0					
16.5					
17.0					
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27.5					
28.0					
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RIG

Montabert Hydrofore

ORIENTATION

vertical

FLUSH

mains water supply

BIT

75mm T/C

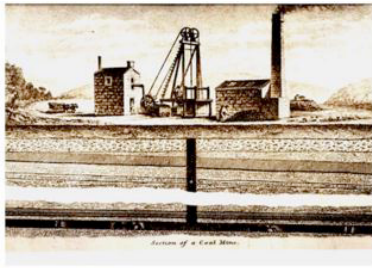
DEPTH	STRATA	GRAPHIC	DESCRIPTION	SPT N value	INTERPRETATION
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0.5	0.6	clay	brown, sandy, soft		
1.0					
1.5					
2.0					
2.5					
3.0	3.0	shale	brown, weathered, firm drilling		rockhead
3.5					
4.0					
4.5					
5.0					
5.5					
6.0					
6.5					
7.0					
7.5	7.6	coal	black, soft drilling		Nant Coal
8.0					
8.5	8.2	shale	grey, firm drilling mudstone layers		
9.0					
9.5					
10.0					
10.5					
11.0					
11.5					
12.0					
12.5					
13.0					
13.5					
14.0	14.1	coal	black, firm drilling		Yard Coal
14.5					
15.0	15.2	shale	grey, firm drilling thin sandstone layers		
15.5					
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29.5					
30.0	30.0		bottom of hole		

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GL AOD

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FLUSH

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Montabert Hydrofore
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75mm T/C

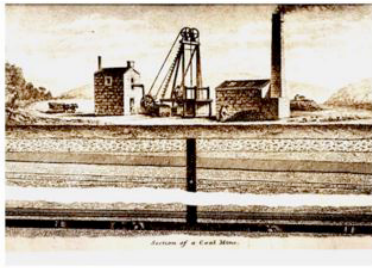
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1.0					
1.5					
2.0					
2.5					
3.0	3.0		brown, weathered, firm drilling		rockhead
3.5					
4.0					
4.5					
5.0					
5.5					
6.0					
6.5					
7.0	7.0		black, firm drilling		Nant Coal
7.5					
8.0	7.7		grey, firm drilling		
8.5			mudstone layers		
9.0					
9.5					
10.0					
10.5					
11.0					
11.5					
12.0					
12.5					
13.0					
13.5					
14.0	14.2		black, firm drilling		Yard Coal
14.5					
15.0	15.2		grey, firm drilling		
15.5			thin sandstone layers		
16.0					
16.5					
17.0					
17.5					
18.0					
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RIG

Montabert Hydrofore

ORIENTATION

vertical

FLUSH

mains water supply

BIT

75mm T/C

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5.0					
5.5					
6.0					
6.5					
7.0					
7.5					
8.0	8.0	coal	black, soft drilling		Nant Coal
8.5					
9.0	8.6	shale	grey, firm drilling		
9.5			mudstone layers		
10.0					
10.5					
11.0					
11.5					
12.0					
12.5					
13.0					
13.5					
14.0					
14.5					
15.0	15.1	coal	black, firm drilling		Yard Coal
15.5					
16.0	16.0	shale	grey, firm drilling		
16.5			thin sandstone layers		
17.0					
17.5					
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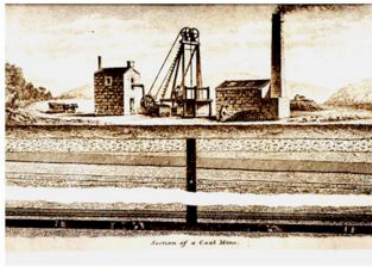


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5.5					
6.0					
6.5					
7.0					
7.5					
8.0	8.2	coal	black, soft drilling		Nant Coal
8.5					
9.0	8.8	shale	grey, firm drilling		
9.5			mudstone layers		
10.0					
10.5					
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14.5					
15.0	15.0	coal	black, firm drilling		Yard Coal
15.5					
16.0	16.1	shale	grey, firm drilling		
16.5					
17.0					
17.5					
18.0					
18.5					
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