

Blaenavon Mine Water Treatment Scheme groundwater abstraction

1. Purpose of this document

This report:

- explains how the application for a transitional transfer licence (also known as 'New Authorisation' licence) has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account
- justifies the use of specific bespoke conditions within the licence.

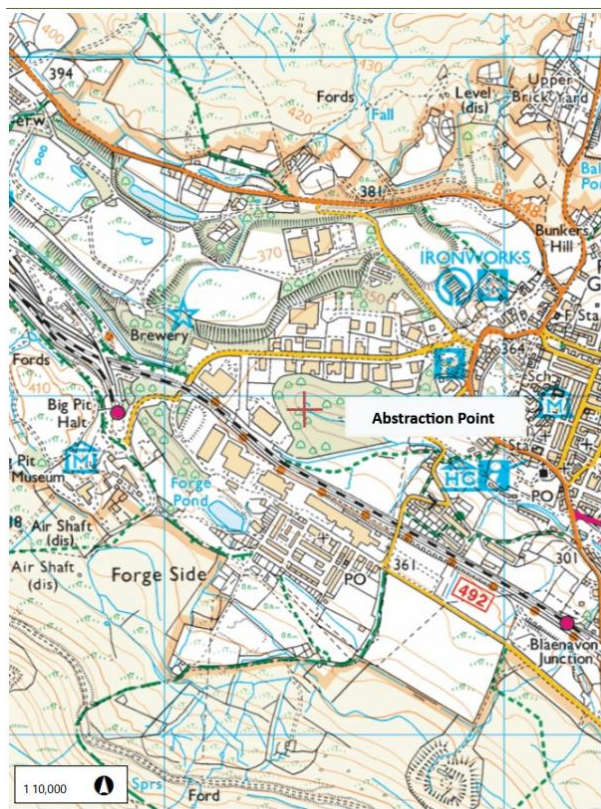
In determining this application, NRW has exercised its duties and powers under The Water Abstraction (Transitional Provisions) Regulations 2017.

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3. Summary of the application

The purpose of the activity is transferring groundwater for pollution remediation. At Blaenavon Colliery the cessation of the mining and associated dewatering had resulted in the water table rebounding and contaminated groundwater discharging, via the River Arch adit and a minor run-off, into the culverted Afon Lwyd. To remediate the pollution, since 2001, the water has been diverted to a treatment scheme, via a pipe running from approximately 100 metres inside the River Arch adit, comprising of three reed beds, before being discharged into the river with a now acceptable iron concentration (authorised by discharge permit AN0310401). Gravity is used to move the water over to the treatment site; as no pumping is involved, the volume of water being abstracted has been estimated as the same as the amount discharged from the treatment scheme. The flow rate of the mine water is rainfall related.



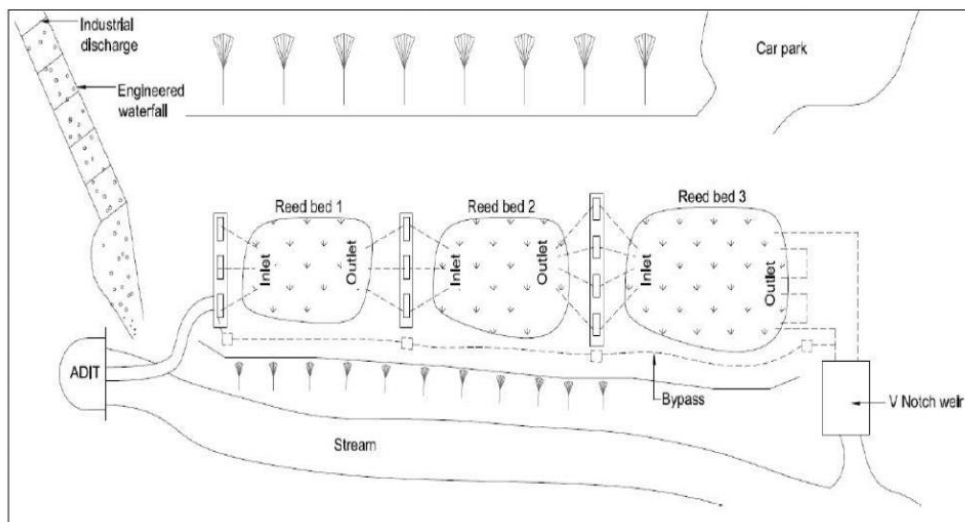


Figure C1: Drawings showing the water diversion from the adit to the reed beds and the location of the flow monitoring weir.

We have decided to issue the licence on 30/04/2021

4. Application and licence determination details

Application details	
Applicant name and address	The Coal Authority, 200 Lichfield Lane, Mansfield, Nottingham NG18 4RG
Application contact details	Miss Cara Callingham, 01623 6337422 caracallingham@coal.gov.uk
Application reference number	PAN-007410
New licence number	WA/56/0012/0003
WFD Waterbody number & name	GB40902G201900 South East Valleys Carboniferous Coal Measures
Abstraction Licensing Strategy (ALS)	South East Valleys
Catchment and sub-catchment	Rhymney and Ebbw River Lwyd
NRW Area	South East

Determination process details	
Date application received	08/10/2019
Date technical checks undertaken	19/12/2019
Date any final further information received and application validated	Email dated 12/11/2019 Additional flow data on weir – 28/11/2019 Validated – 19/12/2019

Reason abstraction was previously exempt	Abstraction is for dewatering as part of mining operations, this activity was previously exempt from licensing under the Water Resources Act 1991.
Non- statutory determination date	31/03/2021
Application publication	This advertising decision was agreed by the NA Panel on 14th January 2021 and recorded in the NA Screening spreadsheet. It is NRW's opinion that there is no appreciable adverse effect upon the environment caused by the abstraction, therefore the need for advertisement can be dispensed with in accordance with the regulations.
National Park notification	Not relevant as abstraction not located within a National Park.
External Consultation	None undertaken in accordance with current policies and guidance.
Environmental Impact Assessment Regulations (EIA) requirements	The proposal is not relevant under these regulations; therefore no environmental statement is required.
Application score	Low

Abstraction details	Licence details
Location of abstraction	Blaenavon Mine Water Treatment Scheme, Blaenavon, Pontypool NP4 9RL
Source of supply	South East Valleys Carboniferous Coal Measures
Point of abstraction (NGR)	SO 24414 08960
Purpose of abstraction	Transfer of water to Afon Lwyd at National Grid Reference SO 24693 08884 in the course of mine water remediation.
Period of abstraction	All year
<u>Quantities and rates:</u>	Not applicable as no quantities included within this transfer licence.
cubic metres per hour	N/a
cubic metres per day	N/a
cubic metres per year	N/a
litres per second	N/a
Means of abstraction	Gravity feed pipe
Measurement of abstraction	Not required for a transfer licence
Frequency of measurement	N/A – see above
Frequency of recording/reporting	N/A – see above
Annual returns requirement	No – see above
Licence end date	31/03/2029 in accordance with South East Valleys ALS
Minimum value condition (Y/N)	N
Issue date	30/04/2021
Effective date	30/04/2021

5. Advertisement of application

Not applicable to this application – see section 4 above.

6. Location of abstraction and discharge

See section 4 above for details.

7. Rights of Access

The map provided includes an outline of the landownership of the applicant and demonstrates that the abstraction point lies within their landownership.

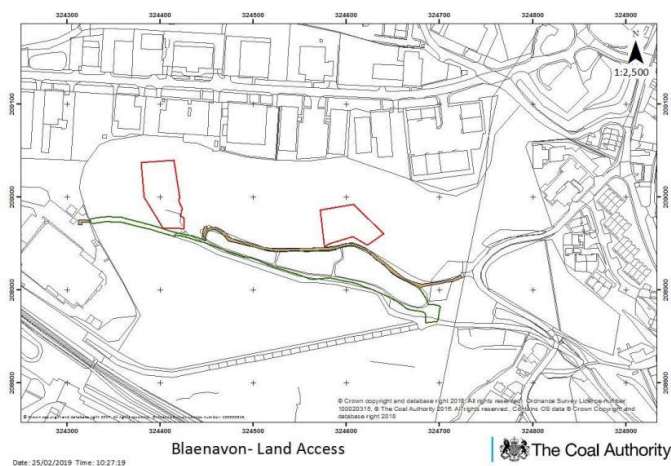


Figure A3: Property outline for Blaenavon; areas outlined in red indicate property owned by the Coal Authority, areas in green indicate land leased by the Coal Authority and brown areas indicate permitted access.

8. Historical Evidence of abstraction and volumes

As part of the transitional licence application, applicants were required to submit evidence to demonstrate the quantities of water abstracted and when the abstraction took place during the seven year ‘qualifying period’ (January 2011 – 31st December 2017).

The applicant explained, in the document [Blaenavon Mine Water Treatment Scheme ... Additional information](#), that water from the mine rises to the surface passively so no pump meter readings are available to provide historical evidence of abstraction and volumes. The applicant has suggested that the discharge of treated water to the river be used as a proxy for the amount of water being abstracted. NRW accepted the [discharge permit](#) (number AN0310401) as supporting evidence for the discharge and hence abstraction. The discharge flow is measured at a 60° v-notch thin plate weir. The applicant provided supporting data (see “[Additional weirs information...](#)”), to clarify how the flow was calculated for each type of weir and assessment of weir accuracy. The weir at this site is considered to be of medium accuracy with $\pm 15\text{-}25\%$ error. The maximum quantities abstracted in each qualifying year were estimated using the largest flow rate recorded in that year (peak instantaneous flow rate l/s).

In addition, the applicant has provided (aerial) photographs and pictures of the treatment scheme in situ, which are dated within the qualifying period.

NRW considers the volumes applied for acceptable. The evidence submitted supports the application and demonstrates that the abstraction has occurred during the qualifying period.

9. Technical assessment of the proposal

The application has been screened according to the New Authorisations (NA) screening process and the results are recorded within the NA screening spreadsheet. Following this the application has been assigned a low risk and complexity score. This score was agreed by the NA Panel on 14th January 2021.

9.1 Water Framework Directive

The abstraction is located within GB40902G201900 South East Valleys Carboniferous Coal Measures groundwater waterbody.

In line with the approach set out in Annex D of OGN 72 for green activities, the application has been screened out from further assessment under the WFD Regulations 2017 for the following reasons:

- The status of this waterbody is at Good quantitative status.
- The abstraction is not in connectivity with surface water bodies at high overall status or high status for morphology / hydromorphology.
- The abstraction is from groundwater and it is considered unlikely that there is direct connectivity with surface water flows.
- Surface water flows do not support Good Ecological Status (GES) but screening consultation has confirmed abstraction unlikely to be contributing to flow failure. The purpose of the abstraction is to remediate contaminated water which is subsequently discharged into the nearby watercourse.
- The abstraction has been ongoing for many years with no reported impacts to the WFD status of the waterbody, therefore we are satisfied that there are no anticipated cumulative / in-combination impacts. The abstraction is to improve local watercourse quality.
- No WFD-related concerns have been raised through the screening consultation, therefore there is no need for "local expert override".
- The abstraction will be licensed based on historic operation so there will be no change in groundwater levels / river flows or quantitative status / ecological status / ecological potential of the waterbody as a result of this abstraction.

The 75% of Qn99 HoF recommended in the response to protect lowest (drought) flows is not considered appropriate for the reasons outlined in section 9.2.

Licensing this abstraction is considered a first step to move towards sustainable abstraction and it will continue to be reviewed through future sustainability review processes.

9.2 Hydrogeology/Hydrology and low flows protection

The abstraction is located in the South East Valleys Carboniferous Coal Measures underground strata and is sited adjacent to a culverted section of the Afon Lwyd.

The abstraction has been occurring lawfully for many years, and in recognition of this the 2017 Government response allows NRW as the regulator to have some discretion about the application HoFs to transitional licences. It is recognised that the HoF condition may not be in line with the recommended HoFs detailed in the Abstraction Licensing Strategy (ALS) for South East Valleys, but considers licensing the abstraction will allow the catchment to move towards sustainable management in the future, through future sustainability review processes.

For abstractions that are located within WFD waterbodies where flows are 'supporting good ecological status', the 2017 Government response suggests the application of a 75% of Qn99 HoF condition. However, in line with our regulatory discretion, NRW consider this HoF is not required for the following reasons:

- The abstraction is from groundwater. The status of this waterbody is at Good quantitative status and the abstraction is not considered to be impacting surface water flows.
- There is insufficient evidence in Wales that a prescribed flow of 75% of Qn99 would provide any environmental benefit / be likely to result in any improvement to WFD status.
- Flow gauges are not generally considered to operate reliably at such low flows, and therefore any condition applying this HoF would not be considered legally enforceable.
- Finally, the abstraction is to remediate groundwater before being discharged to the local watercourse in order to improve local watercourse quality. Restriction at low flows would not be beneficial to the environment.

9.3 Impact on fisheries

Not applicable to this application as a groundwater abstraction and considered unlikely to have any impacts to local surface waters.

9.4 Impact on water quality

Four discharges have been identified in the vicinity of the abstraction. As the abstraction has been occurring for considerable time and there have been no reported impacts to local water quality, NRW are satisfied that any risk to water quality is insignificant. The abstraction is to remediate pollution, and is therefore beneficial to the local water quality environment.

As part of the activity all of the water abstracted is discharged to the Afon Lwyd once it has been through the mine water treatment system. A condition is included within the licence to ensure that all water abstracted is discharged to the nearby watercourse

ensuring that the abstraction is non-consumptive. The discharge is permitted under permit ref. AN0310401.

9.5 Protected rights and lawful users

Following MyMap screening and consultation screening three lawful users have been identified in the vicinity of the abstraction. NRW acknowledges that the existing abstraction has been operating lawfully for many years under an exemption, without any concerns about impact to other water users/abstractors being raised. NRW considers the abstraction poses no risk to existing water users and should be licensed.

9.6 Habitats Directive, CROW Act, Conservation, heritage and landscape impacts

The following sites have been identified as a result of screening the application using MyMap. See [MyMap Screening Report](#) for full details.

Designation Type	Name of Site	Potential Impact	Distance & Direction from abstraction
SAC	N/A	N/A	N/A
SPA	N/A	N/A	N/A
RAMSAR	N/A	N/A	N/A
SSSI	Blorenges	No, see below	1.4 km north-east
AONB	N/A	N/A	N/A
Protected habitat	Lowland dry acid grassland and Lowland calcareous grassland	No, the abstraction has been occurring lawfully with no reported impacts, and in accordance with Government policy a 'light touch risk-based approach' to licensing needs to be applied. The abstraction allows for groundwater remediation to improve the local water environment quality.	The abstraction and discharge points are sited within an area of protected habitat.
Source Protection zone	Northern Limestone Outcrop	No, the abstraction has been occurring lawfully with no reported impacts, and in accordance with Government policy a 'light touch risk-based approach' to licensing needs to be applied. The abstraction allows for groundwater remediation to improve	The abstraction and discharge points are sited within the SPZ

		the local water environment quality.	
National Park	N/A	N/A	

The abstraction is located approximately 1.4 km from a SSSI (Blorenges). However, the transfer activity and subsequent pollution remediation are unlikely to be impacting on the SSSI as no problems have been observed since the remediation started, probably due to the feature being at a higher elevation (100-180 m) than the abstraction site. An Appendix 4 and HRA are not required because there is no conceivable impact pathway to any Natura 2000/Ramsar site/SSSI.

The abstraction is sited within a World Heritage Site (Blaenavon Industrial Landscape) and immediately adjacent to a Scheduled Ancient Monument (Engine Pit, Blaenavon). The abstraction transfer activity and subsequent pollution remediation are unlikely to be impacting on the Site or SAM as no problems have been observed over the twenty years since the remediation started.

9.7 Serious Damage

Not applicable to this application.

9.8 Cumulative Impacts

The abstraction has been ongoing for many years with no reported impacts; therefore we are satisfied that there are no anticipated cumulative / in-combination impacts.

9.9 Subsidence and Desiccation

The abstraction has been ongoing for many years with no reported impacts; therefore we are satisfied that there are no anticipated impacts relating to Subsidence and Desiccation.

9.10 Existing legislation and permissions

Not applicable to this application.

10. Means of measurement of abstraction

As this application is for a transfer licence and no quantities are specified within the licence conditions, no conditions are required relating to the measurement or assessment of the actual volume of water abstracted.

11. Considerations of SMNR – Compliance with our General Purpose

We are satisfied that this decision is compatible with our general purpose of pursuing the sustainable management of natural resources in relation to Wales and applying the principles of sustainable management of natural resources.

12. Criticality, PALS purposes and abstraction annual charges

Criticality Class

Less Critical

PALS Purposes

Primary Code	Secondary Code	Use/Loss Level code
E (Environmental)	OTE (other environmental improvement)	320 (pollution remediation)

Abstraction annual charges

Annual charges are not applicable in accordance with our abstraction charges scheme; the application is for a transfer licence.