

CRoW Act 2000: Natural Resources Wales application for permission - Formal Notice

Natural Resources Wales Formal Notice.

Requirements of Section 28I of the Wildlife & Countryside Act 1981 as amended by the Countryside and Rights of Way Act (CRoW) 2000.

Duty in relation to granting any consent, licence or permit for activities likely to damage Sites of Special Scientific Interest (SSSI).

Guide to filling in this form for Natural Resources Wales staff:

To be completed by Permitting Officers for any applications for a permission which the Natural Resources Wales has considered under S28G duties to protect and enhance SSSIs. This applies to all proposed permissions within a SSSI, and to operations outside the SSSI boundary which are likely to damage its special features.

Refer to OI 140_10 'Applying the Countryside and Rights of Way (CRoW) Act 2000 to applications for permits with potential for impact on Sites of Special Scientific Interest (SSSI)', including the flowchart in Appendix 2.

Pink italic text – drafting notes, to be deleted before completion/consultation.

Blue text – examples, to be replaced with permission-specific information.

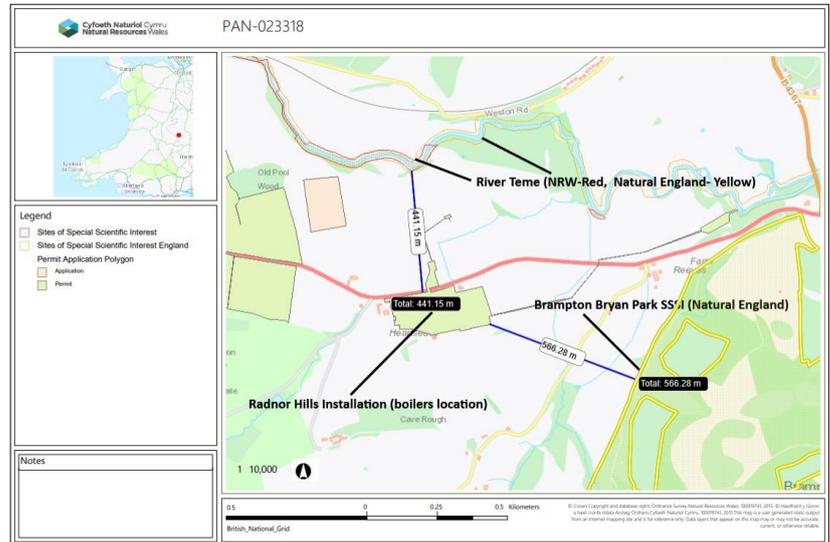
Ensure you have completed all sections.

1. Natural Resources Wales area/region/NPS hub:	NRW: Powys Natural England
2. Name of SSSI:	River Teme (Natural Resources Wales and Natural England) Brampton Bryan Park (Natural England) SITE REF: 15WNT
3. Type of permission:	Environmental Permit
4. Date for Natural Resources Wales permit determination:	22/03/2024
5. Predicted 28 day date for response from NRW conservation/ecology (under S28 I(4)):	15/04/2024
6. Natural Resources Wales reference no:	PAN-023318 (ERP/AB3697CN/V003)
7. National grid reference:	SO 34383 72493 (location of the new MCP)
8. Description of proposal:	<p>Radnor Hills Mineral water company limited have applied to add a new boiler 4.11MWth (classified as a medium combustion plant (MCP)) to their Installation. The operator currently has 5 boilers on site (listed as emission points A1-A5 on the permit). The new boiler (A6) when commissioned will replace three of the existing boilers (A2-A4) which would become standby boilers.</p> <p>As the new boiler is commissioned after 20/12/2018, it is subject to the emission limits set out in the medium combustion plant directive.</p> <p>As the boiler is the only addition to the permit for this variation the only mechanism of damage to the designated sites is through emissions to air of NOx and SO₂.</p> <p>There are no other changes to the permit as part of this variation.</p> <p>The details of this application can be found on the public register here (application reference PAN-023318).</p>

9. Is the proposed activity within (wholly or partially) the SSSI boundary?

No
River Teme (NRW and Natural England) – Located approximately 450 meters north of the main installation site where the boilers are located

Brampton Bryan Park (Natural England) – Located approximately 560 meters east and south east of the main installation site where the boilers are located



10. Has there been any pre-application discussion or correspondence with NRW conservation/ecology

No

11. What aspect(s) of the proposed permission may damage the features which are of special interest for the SSSI?

The following 'Operations Requiring Consent' (or other activities associated with the permission) that may cause damage) are relevant to the proposed permission.

[Brampton Bryan Park \(naturalengland.org.uk\)](http://Brampton Bryan Park (naturalengland.org.uk))

Based on the operations that may cause damage [Microsoft Word - OLD1001473.doc \(naturalengland.org.uk\)](http://Microsoft Word - OLD1001473.doc (naturalengland.org.uk)), the closet category to this proposal would be;

7-Dumping, spreading or discharge of any materials.

For both sites the main mechanism of impact would be from emissions to air of oxides of nitrogen (referred to as NO_x formed of NO, N₂O and NO₂) and sulphur dioxide. The emissions could result in increase concentration of NO_x and SO₂ as increase in deposition of atmospheric nitrogen onto the surface of vegetation and acidification as a result of deposition of atmospheric NO_x and SO₂.

The applicant has supplied air quality modelling report to work out the predicted worst case scenario. The model shows the emissions for the site which included all the emissions for existing and future scenarios (the future scenarios including existing emission point A1 and A5 as well as the new boiler A6). The worst-case scenario presented below is for the future when only boilers A1, A5 and A6 are running with boilers A2-A4 being on standby and will only operate if any of the other boilers are down for maintenance or repairs.

For terminology used in this document please see Critical Loads and Critical Levels - a guide to the data provided in APIS | Air Pollution Information System and [Air emissions risk assessment for your environmental permit - GOV.UK \(www.gov.uk\)](http://Air emissions risk assessment for your environmental permit - GOV.UK (www.gov.uk)).

Screening for impacts was done in accordance with [Air emissions risk assessment for your environmental permit - GOV.UK \(www.gov.uk\)](http://Air emissions risk assessment for your environmental permit - GOV.UK (www.gov.uk)).

The following SSSI features and mechanisms of impact have been considered to assess the likelihood of damage:

Brampton Bryan Park (Natural England) SITE REF: 15WNT

The features of the SSSI designation as outlined in the following document [Brampton Bryan Park \(naturalengland.org.uk\)](http://naturalengland.org.uk) are as follows:

- The site has been listed due to its national importance as a wood pasture along with lichens and invertebrates that are associated with the site.
- The site consists of various trees including oaks (*Quercus robur*, *Q. petraea*) beech (*Fagus sylvatica*), ash (*Fraxinus excelsior*) and small-leaved lime (*Tilia cordata*)
- The site is noted as having over 130 lichen species (with lichens being susceptible to air quality) including two rare species (*obaria pulmonaria* and *L. amplissima*) among other unusually lichens. There is a potential mechanism of impact from the proposal both atmospheric concentrations of NO_x and SO₂ as well as nitrogen and acid deposition from atmospheric NO_x and SO₂. As lichens are present the lower critical level for SO₂ of 10 µg/m³ has been applied.
- It also mentions that there are some ponds in the east of the site. The worst-case scenario submitted by the applicant occurs on the western edge of the site and given the outcome of the modelling is either insignificant or marginally above the screening threshold at the western edge (see below for more details) it is unlikely that the eastern section is going to be impacted by the emissions.
- Acidic dwarf-shrub heath habitat has been noted to be located in the southern region. Like the ponds, the highest impact (in the northwestern edge of the site) is some distance from the area that this feature is located in.

The main features that would be impacted from the proposal of emissions to air are the woodland and vegetation features (through direct impact). These features would particularly be impacted through deposition and acidification from atmospheric NO_x and SO₂.

Atmospheric NO_x

The maximum predicted long term process contribution from the site was 0.54 µg/m³ which is 1.8% of the long term critical level of 30 µg/m³. The predicted environmental concentration (PEC) was 4.65 µg/m³ (using APIS background of 4.1 µg/m³) which is 15.5% of the critical level. As this is less than 70% of the long term critical load the emissions screen out as insignificant.

The short term process contribution was 3.4 µg/m³ which is 4.5% of the short term critical load of 75 µg/m³. As the short term process contribution is less than 10% the short term critical level the emissions screen out as insignificant.

As the short and long term emissions screen out as insignificant (for long term PEC is less than 100% and for short term process contribution is less than 10%) with detailed modelling there is no mechanism of impact through atmospheric concentrations.

Atmospheric SO₂

Due to the presences of lichen within this designated site the lower long term critical level value of 10 µg/m³ has been applied for Brampton Bryan park. The maximum predicted long term process contribution from the proposal was 0.092 µg/m³ which is 0.92% of the long term critical load. As the process contribution is less than 1% of the critical level emissions of SO₂ can be screened out as insignificant.

There is no short term environmental assessment level for SO₂.

Deposition of NO_x

The applicants air quality modelling had shown that for the worst case scenario the process contribution at the site designated site was 0.078 kgN/Ha/Year which is 1.56% of the critical load of 5 kgN/Ha/Year and therefore does not screen out as insignificant. It should be noted that the site as currently permitted has a nitrogen deposition of 0.067 kgN/Ha/Year which is 1.34%.

The predicted environmental concentration (PEC) is 20.74 kgN/Ha/Year or 414% of the critical load and therefore the emission does not screen out as insignificant. The high PEC is due to the high background in the area, which is shown by APIS to mostly originate from livestock (contributing 53% on a local scale) and fertiliser application (10.7% on local scale). the combustion sector (which the MCPs are under) is not a significant contributor to the high background concentration of deposited nitrogen.

Percentage of Nitrogen Deposition by apportionment, 2018 data (hover plots for more info)

Sources ranked by total Nitrogen deposition (KgN/ha/yr) from combined UK sources



Local contributions to Nitrogen deposition (KgN/ha/yr) from sources (UK)

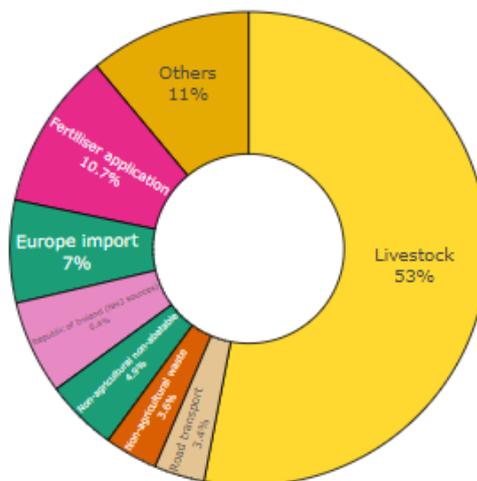


Figure 1: The source attributions of nitrogen deposition at Brampton Bryan park from both combined sources and local sources.

While the emissions are above the screening threshold and is therefore not insignificant, it is not in itself significant. The increase in process contribution is going from 1.34% of the critical load to 1.56% (increase of 0.2%). It should also be noted that this is only the case at the western boundary of the designated site and that the process contribution would likely be below the 1% screening threshold for the majority of the designated.

As the new boiler is considered a new MCP it will be subject to the medium combustion plant directive (MCPD) and will impose emission limits. For the existing scenario, the applicant had assumed that the boilers would be running at an emission limit of 232 mg/m³, however the permit does not have any limits for the existing boilers as existing MCPs between 1-5 MWth are not required to have limits until 2030 (at the latest). The new boiler (A6) will have emission limits in place compared to the existing boilers it is due to take over from (A2-A4) which do not have any limits (only monitoring) for NOx.

It can be concluded that while the nitrogen deposition is not an insignificant emissions, it would on its own not be lead to a significant damage to the designated site and the high background concentration originates from other sectors

(such as livestock and fertiliser applications). The sites increase in impact is only 0.22% over the current permitting activities and therefore the increase risk of damage to the designated feature is very small.

Acidification

Deposition of acidic gases NO_x and SO₂ could cause impact through increase in acidification. The applicant has modelled for the acid deposition at the designated site and produced the worst case/ highest deposition in their modelling report.

Using APIS acidity tool for the site and the applicants predicted deposition for the modelling shows that the total acidity did not screen out with the process contribution of combined sulphur and nitrogen acid being 0.0166 keq/ha/year which is 1.2% of the critical load and the predicted environmental concentration being 1.61 keq/ha/year or 117.6% of the critical load. As with the nitrogen deposition the high predicted environmental concentration (PEC) is due to the high background concentration in the area.

As the acidification from the emissions do not screen out as insignificant at the process contribution or PEC stage, there is a potential mechanism of impact. However in order to determine if the acidification is high enough to cause significant damage to the features we have assessed the applicant's predictions against the maximum acid critical loads for the site. The results are shown in Figure 2 below.

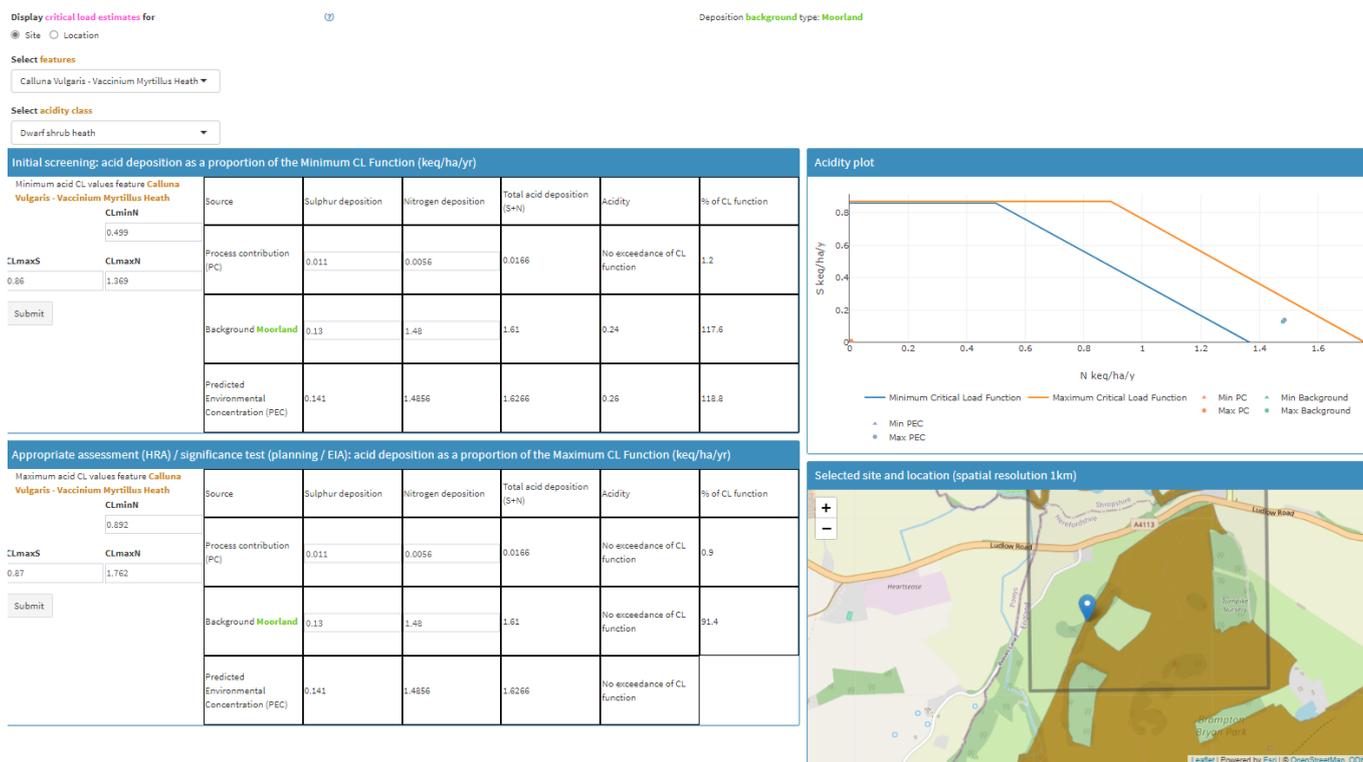


Figure 2: The APIS acidity screening tool

The total acidity (nitrogen and sulphur) process contribution was 0.9% of the critical load and the PEC was 92.3%. As the process contribution was less than 1% of the maximum acid critical load and the PEC was less than 100% of the maximum acid critical load, it can be concluded that the acidification from the emissions will not lead to any significant affects that would cause damage to the features of the SSSI.

River Teme (Natural Resources Wales and Natural England)

[CYNGOR CEFN GWLAD CYMRU \(naturalresources.wales\)](http://naturalresources.wales)
[2000102 \(naturalengland.org.uk\)](http://naturalengland.org.uk)

The SSSI is designated as a site that supports the following features

- Breeding Bird Species such as dipper *Cinclus cinclus*, grey wagtail *Motacilla cinerea*, kingfishers *Alcedo atthis* among others.
- Various fish species such as Atlantic salmon *Salmo salar*, bullhead, Grayling *Thymallus thymal* and brook lamprey among others (see citation for details). The citation references that brown trout *Salmo trutt*, is commonly found upstream of Ludlow and is therefore within the area close to the proposal.
- Invertebrates including Atlantic stream crayfish and a few species of rare beetles.
- Otter *Lutra lutra* is noted to have an established between Ludlow and Knighton and point nearest point of the SSSI to the installation is located within this area.
- Various vegetation/Flora species, Notably water crowfoots *Ranunculus fluitans* and *R. penicillatus v pseudofluitans* are know to be within the area close to the installation proposal.

APIS does not have any critical load values for either nutrient nitrogen or acidification from atmospheric deposition for any of the features. The applicant did take a precautionary approach and assessed against a critical load of 5 kg N/Ha/Year for this site (see section on nitrogen deposition).

Many of the designated species are water based or land based animals which are less sensitive to deposition from atmospheric NO_x and SO₂ than land based vegetation.

Atmospheric NO_x and SO₂

Most of the aquatic based species are unlikely to be affected by concentration of atmospheric NO_x and SO₂ but some land based features such as Otter (*Lutra lutra*) (which has been reported in the area) and a few bird species in the area could be potentially impacted through atmospheric NO_x and SO₂ from the emissions.

The applicant's emissions showed that for long term, atmospheric NO_x the highest process contribution was 0.29 µg/m³ or 0.96% of the critical level. As this is less than 1% of the critical level the emission screens out as insignificant. The predicted environmental concentration using the APIS background of 4.3 µg/m³, the PEC is 4.59 µg/m³ or 15.3% of the critical level and therefore screens out as insignificant (less than 70% of the critical level).

The highest predicted short term process contribution was 2.6 µg/m³ which is less than 10% (3.4%) of the short term critical level of 75 µg/m³ and therefore screens out as insignificant.

For SO₂ the highest long term (annual) process contribution was 0.051 µg/m³ or 0.225 % of the upper* SO₂ critical level of 20 µg/m³ and therefore screens out as insignificant.

* 10 µg/m³ used when lichens are present. As these are not in the River Teme designation the upper critical level of 20 µg/m³ is applicable (see [Air emissions risk assessment for your environmental permit - GOV.UK \(www.gov.uk\)](http://www.gov.uk)).

Nitrogen deposition

APIS does not have any critical load values for this site (also confirmed by the applicant). The main direct impacts from nitrogen deposition is on land-based vegetation. Many of the water based animal and vegetation species would not be directly impacted.

The applicant's modelling had shown that the deposition from the proposed changes would be 0.042 kg N/Ha/Year. Even though there is no nitrogen critical load values, the applicant showed that even using a stringent critical load of 5 N/Ha/Year, the process contribution would be less than 1% of the critical load and would screen out as insignificant under worst case scenarios.

Therefore there is no mechanism to damage the features of the SSSI through deposition of nitrogen from atmospheric NO_x.

Acidification

As with nitrogen deposition, APIS does not have a critical load value for acidity from deposition atmospheric NO_x and SO₂ as many of the features are water based. However the applicant's modelling had shown that the highest process contribution was 0.009 keq/ha/year. The applicant had shown that using a total acidity critical load of 1.5 keq/ha/year the process contribution would only be 0.6% and therefore would be an insignificant emissions (less than 1%).

Given the very low process contribution there is no likely mechanism of impact from the proposal to damage the features of the SSSI.

12. Decision

Brampton Bryan Park (Natural England)

i) The proposed permission is **not likely to damage** any of the flora, fauna or geological or physiological features which are of special interest.

Emissions of atmospheric NO_x and SO₂ from the proposal had screened out as insignificant.

Acid deposition did not screen out as insignificant but the acidity tool had shown that the acidity from the deposition of NO_x and SO₂ was unlikely to lead to any significant damage to the features of the designated site.

While Nitrogen deposition did not screen out as insignificant, the highest process contribution was just above the threshold (1.6%) and was a marginal increase over the existing emissions from the site. Given that this was the worst case scenario at the closest point between the installation and the designated site it is unlikely that the emissions will lead to significant impacts to the designated features of this site.

River Teme (Natural Resources Wales and Natural England)

i) The proposed permission is **not likely to damage** any of the flora, fauna or geological or physiological features which are of special interest.

There is no mechanism of impact. The process contribution for emissions of NO_x, SO₂ screened out as insignificant. While the site does not have critical loads for deposition and acidification from atmospheric NO_x and SO₂, the applicant has shown (using a proxy critical load for nitrogen deposition) that these would be insignificant and will not cause damage to the features of this SSSI.

**Natural Resources Wales is minded to:
Issue the permission**

13. Name and job title of Natural Resources Wales officer:	William Wallace Senior Permitting Officer, Installation and RSR permitting
14. Date form sent to NRW conservation/ecology	N/A – Sent to NRW for audit 16/02/2024- Natural England
For Natural Resources Wales use only, once NRW conservation/ecology response received	
15. NRW conservation/ecology comment on assessment:	N/A Natural England – See letter on public register for response (dated 28/02/2024)
16. Name and job title of NRW conservation/ecology officer:	N/A
17. Date of receipt of NRW conservation/ecology response:	N/A Natural England 28/02/2024