CRoW Appendix 4 (140_10_SD02)

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.

Ensure you have completed all sections.

1. Natural Resources Wales area/region/NPS hub:	Natural England NRW - for information only
2. Name of SSSI:	River Teme Brampton Bryan Park SITE REF: 15WNT
3. Type of permission:	Environmental Permit
4. Date for Natural Resources Wales permit determination:	16/08/2024
5. Predicted 28 day date for response from NRW conservation/ecology (under S28 I(4)):	31/07/2024
6. Natural Resources Wales reference no:	PAN-024069 (EPR/AB3697CN/V004)
7. National grid reference:	SO 34383 72493 (installation)
8. Description of proposal:	Radnor Hills Mineral Water Company Limited have applied for a variation to allow the addition of a ferric chloride dosing system at their effluent treatment plant. The purpose of the ferric chloride dosing system is to reduce the phosphate through precipitation of the phosphate as a result of the reaction between with iron followed by the removal of the solid precipitate using an ultrafiltration membrane. The sludge/precipitate is disposed of using existing sludge disposal methods. This method of removing phosphorous is a recognised best available technique (BAT) reference document in the BAT conclusions for food, drink and milk industries (Best Available Techniques (BAT) Reference Document for the Food, Drink and Milk Industries (europa.eu) Section 2.3.6.4.2 Precipitation The proposal would result in discharge of iron, chloride and lead (impurity in the ferric chloride) into the River Teme. As the variation could lead to a discharge of chloride to the water course as a result of the ferric chloride the applicant are required by BAT to monitor for chloride emission but there would be no ELV set.
9. Is the proposed activity within (wholly or partially) the SSSI boundary?	Yes – Discharge point is at the SSSI River Teme
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.

River Teme

Information gathered from the following source: SSSI detail (naturalengland.org.uk) and 2000102 (naturalengland.org.uk)

Based on the operations that may cause damage (2000102.pdf (naturalengland.org.uk)) the closed category would be:

7. Dumping, spreading or discharge of any material

The addition of ferric chloride will result in the potential increase discharge of iron and chloride from the site. In addition the ferric chloride solution may metal contain impurities . The applicant has stated (and shown) that most of these metal impurities are below the threshold of detection and would be insignificant, however lead would be at concentration high enough to be detected and as such the applicant has included this in their H1 assessment for the water discharge.

The site is designated for the following features (source Natural England: Site feature condition (naturalengland.org.uk))

- Invert. assemblage W114 stream & river marginI
- Invert. assemblage W122 riparian sand
- Twaite shad, Alosa fallax
- Rivers and Streams
- River supporting habitat
- Population of Schedule 5 mollusc - Margaritifera margaritifera, Freshwater Pearl Mussel
- Otter, Lutra lutra
- White-clawed (or Atlantic stream) crayfish, Austropotamobius pallipes

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

Flora:The site has variety of flora species are part the site's designation and could be impacted by the proposed changes. These include moss *Amblystegium tenax, Fontinalis squamosa,* iverwort *Marchantia polymorpha*, water crowfoots (*Ranunculus fluitans* and *R. penicillatus v psuedofluitans*) red alga *Hildenbrandia rivular* and reed canary grass, *Phalaris arundinacea* among others.

Fish: The designated site following designated fish species could be impacted by the proposed discharge. These include Twaite shad Alosa fallax, Salmon *Salmar salmo,* Grayling *Thymallus thymallus,* Brook lamprey *Lampetra planeri* among others.

Invertebrates: The site contains a verity of invertebrates including White-clawed (or Atlantic stream) crayfish, *Austropotamobius pallipes*, freshwater pearl mussel *Margaritifera margaritifera*

These could potentially be impacted by the increase in concentration of pollutants (iron, chloride and lead) into the watercourse from the proposal.
Mammals- otter Lutra lutra (reported strong between Knighton and Ludow. The discharge within this area) and Mink *Mustela vison*

Breeding Birds: the site designation overview also references a few breeding birds including kingfishers *Alcedo atthis* and sand martins *Riparia riparia,* and common sandpipers *Tringa hypoleucos.* While the bird species would not be directly impact there could be a potential indirect impact from impact mechanism to other features of the SSSI that could affect these species

Mechanism of impact

The main mechanism of damage is through toxic contamination from the discharge of iron and chloride (from the ferric chloride). The applicant also assessed for lead as this may be present (as impurities) within the discharge.

As part of the application the applicant has supplied a H1 assessment for substances that will be introduced into the watercourse as a result of the variation. The H1 tool has been done in line with the H1 guidance Surface water pollution risk assessment for your environmental permit - GOV.UK (www.gov.uk)

The pollutants, iron (dissolved) chloride and lead were assessed against the annual average environmental quality standard (EQS) and absolute maximum. The applicant had taken a conservative approach and used concentrations higher concentrations of lead, iron and chloride in the H1 assessment for both annual average and absolute maximum than would actually be present in the water discharge.

At stage 1 all of substances were more than 10% of the environment quality standard for annual average and as such did not screen out as insignificant but at stage 2 (assessment against the river flow).

At stage 2 the H1 assessment which takes into account dilatation from river flow, the substances (lead, iron and chloride) had screened out with the process contribution being less than 4% of the environmental quality standard. As the substances screen out as not significant at stage 2 of the H1 assessment for surface water discharge (freshwater) it can be concluded that under worst case scenario, the emissions of substances would not pose a risk of impact to the features of the SSSI.

While there are no changes to the limits of any other substances, the purpose of using ferric chloride is to reduce the amount of phosphorus being discharge into the watercourse from the installation.

Brampton Bryan Park
No impact pathway – The only changes to the site is the addition of ferric chloride to the effluent treatment plant. The SSSI is not hydrologically connected to the discharge point therefore there is no impact pathway from the proposed variation that would cause any risk to the features this SSSI.

12. Decision

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

Brampton Bryan Park
No pathway to damage features.

River Teme
No mechanism of impact - the H1 screening tool showed that under worst case scenario using more conservative values (higher amount of lead, iron and chloride), the concentration of iron, chlorine and lead screened out as not significant at stage 2 and therefore the substances of iron, lead and chloride and would not be in high enough concentrations to cause any impact to the features of the watercourse.

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	02/07/2024
For Natural Resources Wales use only, once NRW conservation/ecology response received	
15. NRW conservation/ecology comment on assessment:	*Please delete as appropriate:* i) NRW conservation/ecology advise the operation can go ahead ii) NRW conservation/ecology advise the operation can go ahead with conditions iii) NRW conservation/ecology advise against permitting the operation Please ensure that the NRW conservation/ecology response is attached to this Formal Notice.
16. Name and job title of NRW conservation/ecology officer:	
17. Date of receipt of NRW conservation/ecology response:	