

**Natural Resources Wales permitting decisions**

# **Befesa Salt Slags Limited (Whitchurch Salt Slags) Decision Document**

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## Permit Variation

**The permit variation number is: [EPR/VP3030BX/V006](#)**

**The operator is: [Befesa Salt Slags Limited](#)**

**The Installation is located at: [Whitchurch Salt Slags, Fenn's Bank, Whitchurch](#)**

## Our Decision

We have decided to issue the variation for Whitchurch Salt Slags operated by Befesa Salt Slags Limited.

The variation is for the installation of a new gas cleaning scrubber, together with new ductwork and extraction fan. The additional scrubber will be mounted on a structural steel framework, in the vicinity of the existing scrubbers, with two cleaning liquid tanks and associated pumping equipment in a new (sealed and bunded) concrete compound. The installation of the new equipment will constitute the addition of a new aerial emissions point (A7).

The new scrubber will work to capture diffuse fugitive emissions that it is not currently possible to capture, abate and/or quantify. There will be no change in the throughput rate of material through the site following the variation.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

## Changes we have made

Following the operator submitted application, we have made the following changes to permit [EPR/VP3030BX](#);

1. *Addition of a new aerial emission point*

The addition of a new scrubber on site has introduced a new point source emission to air. This is referenced as A7 on the permit. Permit tables recording point source emissions, monitoring requirements and the monitoring forms have also been updated to reflect this.

2. Varied the site's ammonia emission limit values

As part of the introduction of the new point source of aerial emissions, the applicant has proposed reducing the ammonia (NH<sub>3</sub>) emissions limit values for each of the ammonia emitting point sources on site. This has required a change to the point source emission tables, and the monitoring and reporting tables, as well as the reporting forms.

3. Update of Improvement Conditions

Following the submission of data and justification from the Operator, the Improvement Conditions IC19, IC20 and IC22 have been updated.

The following changes have also been applied to the permit, following a NRW review;

4. Correction of the site map included with the permit

An error was found in the previous version of the permit (EPR/VP3030BX/V005) regarding the site boundary. This has been corrected in this new version.

## Purpose of this document

This decision document:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

## How we reached our decision

### Receipt of application

The application was received on 24 October 2017, and the duly making assessment was carried out on 13 November 2017. The initial application could not be duly made as the application forms were missing information about the proposed variation; the site map did not clearly show the position of the new equipment to be installed as part of the variation; and the declaration was not completed by a relevant person. The additional information was provided by the applicant on the 24 November 2017 to satisfy this. We then notified the applicant that the application was duly made on the 24 November 2017. This means we considered it was in the correct form and contained sufficient information for us to begin our determination, but not that it necessarily contained all the information we would need to complete that determination.

### Consultation

The consultation requirements were identified and implemented. The decision was taken in accordance with our Public Participation Statement and our Working Together Agreements.

A copy of the Application and all other documents relevant to our determination are available for the public to view. Anyone wishing to see these documents could arrange for copies to be made.

We sent copies of the Application to the following bodies, which includes those with whom we have “Working Together Agreements”:

- Wrexham County Borough Council (Environmental Protection Department)
- Wrexham County Borough Council (Planning Department)
- Public Health Wales
- North Wales Fire and Rescue Service
- Welsh Water

These are bodies whose expertise, democratic accountability and/or local knowledge make it appropriate for us to seek their views directly.

The consultation started on 29 December 2017 and ended on 29 January 2018.

An advert was also placed on our website.

Further details along with a summary of consultation comments and our response to the representations we received can be found in Annex 1. We have taken all relevant representations into consideration in reaching our determination.

## Requests for further information

We issued two Notices requiring further information (Schedule 5 Notices) on 04 January 2018 and 15 February 2018. Copies of these notices were placed on our Public Register as were the responses when received.

A summary of the Schedule 5 requests and responses are shown below;

Requested information	Applicant response
<b>Schedule 5 (1)</b>	<b>04 January 2018</b>
1. Applicant was requested to submit a risk assessment which considered the impact of process contributions of the installation's emissions on sensitive receptors.	The applicant submitted an ammonia dispersion report on the 09 January 2018 which assessed the impact of ammonia from the site's stacks.  The report used computer dispersion modelling to assess the concentration of ammonia at different locations in the area of the installation. The report compared the present emissions output with that proposed in the variation. Details of the parameters used in the report were not sufficiently clear and following the additional submission of this information the Schedule 5 was closed as of 12 January 2018.

Requested information	Applicant response
<b>Schedule 5 (2)</b>	<b>15 February 2018</b>
<ol style="list-style-type: none"> <li>1. Further detail was required in the description of the airborne concentrations emission that were to be experienced by the 'Fenn's, Whixall, Bettisfield, Wem and Cadney Mosses' site.</li> <li>2. An assessment of the nitrogen deposition and acid deposition was required to determine the risk to nearby sensitive receptors from the site's ammonia emissions. A detailed assessment was required of the specific impact to the 'Fenn's, Whixall, Bettisfield, Wem and Cadney Mosses' site.</li> <li>3. Clarification was required of the proposed Emission Limit Values which were used to develop the dispersion modelling used in the, previously submitted, ammonia report.</li> <li>4. A quantitative risk assessment was requested of the impact of the site's expected odour emissions on neighbouring residents.</li> </ol>	<p>The applicant submitted information on the 16 March 2018 however the proposed Emission Limit Values did not correspond to the emission parameters used in the ammonia dispersion modelling report submitted on the 09 January 2018.</p> <p>This was articulated to the applicant, and it was agreed that the applicant would submit a new dispersion modelling report which satisfied the assessment requirements. This was submitted on 02 May 2018. The emission parameters were also not clear in this report, and following confirmation by the applicant of these details, on the 04 May 2018. The outstanding Schedule 5 was closed the same day.</p>

## The Legal Framework

All applicable European directives have been considered in the determination of the application.

The variation will be issued, under Regulation 20 of the EPR. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is:



- an *installation* as described by the IED;
- subject to aspects of the Well-Being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016 which also have to be addressed.

We address the legal requirements directly where relevant in the body of this document. NRW is satisfied that this decision is consistent with its general purpose of pursuing the sustainable management of natural resources (SMNR) in relation to Wales, and applying the principles of SMNR. In particular, NRW acknowledges that it is a principle of sustainable management to take action to prevent significant damage to ecosystems. We consider that, in granting the Permit a high level of protection will be delivered for the environment and human health through the operation of the Installation in accordance with the permit conditions. NRW is satisfied that this decision is compatible with its general purpose of pursuing the sustainable management of natural resources in relation to Wales and applying the principles of sustainable management of natural resources.

## The Installation

### Description of the installation

Befesa Salt Slags Ltd is based at Fenn's Bank, Whitchurch, SY13 3PA. The operation on site is a specialised waste treatment facility designed to treat and recover metallic aluminium and aluminium oxide. The process has been developed to treat two principal materials, spent pot liner and Aluminium salt slags, derived from the aluminium sector. Spent pot liner is a waste from the electrolytic reduction cells used in primary aluminium production processes; and Aluminium salt slags are a by-product of the secondary aluminium scrap smelting processes.

This variation is for the installation of new aerial scrubbing equipment (treatment of waste gas arising from the drying process of the site's primary product) with an associated new aerial emission point.

The new aerial emission point will be releasing gaseous ammonia, hydrogen sulphide and phosphine into the nearby environment. Other point sources of these emissions exist on the site, and the emissions from these will be reduced as scrubbing workload is taken up by the new scrubber.

## Permitted activities

The regulated facility is an installation which comprises the following activities listed in Part 2 of Schedule 1 to the Environmental Permitting Regulations and the following directly associated activities.

### Listed Activities

- **Section 4.2 Part A(1)(a)(v)** *Production inorganic chemicals such as non-metals, metal oxides, metal carbonyls, or other inorganic compounds (such as calcium carbide, silicon, silicon carbide, titanium oxide).*

Producing ammonium sulphate, sodium and potassium chlorides and aluminium oxides recovered from aluminium salt slag and spent pot liners from the aluminium industry. Chemical Plants 1 and 2.

- **Section 5.3 Part A (1) (a)(vi)** *Disposal or recovery of hazardous waste in a facility with a capacity exceeding 10 tonnes per day involving recycling or reclamation of inorganic materials other than metals or metal compounds.*

Recovery of Spent Pot Liner Cut 1 by milling prior to shipping off site, and Spent Pot liner cut 1 and 2 by milling prior to treatment in the on-site chemical plant.

- **Section 5.6 A(1)(a)** *Temporary storage of hazardous waste with a total capacity exceeding 50 tonnes pending any of the activities listed in Sections 5.1, 5.2, 5.3 and paragraph (b) of this section, except (i) temporary storage, pending collection, on the site where the waste is generated or (ii) activities falling within Section 5.2.*

Storage of dross, salt slag and spent pot liner prior to on-site processing.

- **Section 3.5 Part B(a)** *The crushing, grinding or other size reduction, other than the cutting of stone, or the grading, screening or heating of any designated mineral or mineral product.*

Separation of aluminium from dross by milling;

Milling of foundry sand;

Separation of aluminium from slag by milling;

R4: Recycling/reclamation of metals and metal compounds.

- **Section 5.3 Part A(1)(a)(iv)** *Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving repackaging prior to submission to any of the other activities listed in this Section or in Section 5.1.*

Repackaging prior to submission to another S5.3 activity.

- **Section 4.3 Part A(1)(a)** *Producing (including any blending which is related to their production) phosphorus-, nitrogen- or potassium-based fertilisers (simple or compound fertilisers).*

Manufacture of urea/ammonium sulphate fertiliser numbers of the operators of other parts of the installation are detailed in the permit's introductory note.]

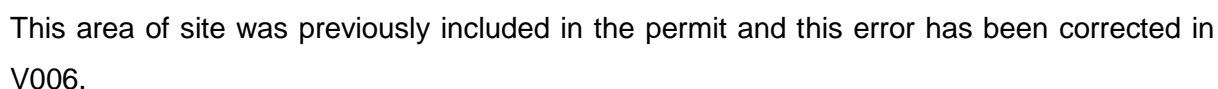
#### Directly Associated Activities

- **Boiler plant**  
LPG or kerosene fuelled 6.5MW thermal input
- **Storage of non-hazardous materials**  
Receipt and storage of non-hazardous wastes for processing
- **Storage of raw materials**  
Storage of raw materials in the Wardle Shed

The regulated facility also conducts waste operations whereby the following recovery and disposal operations will be undertaken.

- Recovery of non-hazardous SPL Cut 1 (EWC code 16 11 04) by milling prior to shipping off site
- D14: Repackaging prior to submission to any of the operations numbered D1 to D13  
D15: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced)  
R12: Exchange of wastes for submission to any of the operations R1 to R11  
R13: Storage of wastes pending any of the operations R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced).  
Bulking up of untreated dross prior to removal from site for processing elsewhere.

The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility including discharge points. It was identified during the determination process that the site map submitted as part of the previous variation, EPR/VP3030BX/V005, did not correctly describe the boundary; the southern section of the installation had been omitted and additional land has been added to the north of the installation. A comparison is shown below of the site map for V005 and site map for V006.



This plan has been included in the permit and the operator is required to carry on the permitted activities within the site boundary.

## Site condition report

As no new land is being added or removed from the permit boundary (omitting the previous map error of V005, c.f. Site boundary pp12) a site condition report was not required.

## Environmental Risk Assessment

As part of the operator submitted application, clarifications were made to the source description sections of the permit tables Table S3.1a and Table S3.1b ("Point source emissions to air") to reflect the updated site configuration.

## Air

This section of the decision document deals primarily with the dispersion modelling of emissions to air from the new emission point and its impact on local air quality.

The Applicant has assessed the Installation's potential emissions to air against the relevant air quality standards, and the potential impact upon human health. These assessments predict the potential effects on local air quality from the Installation's stack emission.

The air impact assessments, and the dispersion modelling has been based on the Installation operating continuously at the relevant long-term or short-term emission limit values, i.e. the maximum permitted emission rate.

The Air Quality Assessment considered the following substances;

- Phosphine (PH<sub>3</sub>)
- Hydrogen Sulphide (H<sub>2</sub>S)
- Ammonia (NH<sub>3</sub>)

## Consideration of Key Air pollutant: Phosphine

The impact on air quality from phosphine emissions has been assessed against the Environmental Assessment Level (EAL) for phosphine. For phosphine, the short term (hourly) EAL is 42 µg/m<sup>3</sup> as set by the H1 assessment on the gov.uk website (accessed 07/06/2018). No long term (annual) EAL is available for phosphine.

As a precautionary approach, the assessment of the phosphine emissions compared the maximum allowable concentration of phosphine, as defined in the Non-Ferrous Metals Best

Available Techniques Conclusions document (Commission Implementing Decision (EU) 2016/1032, 2016) (BAT Note 89), against the respective EALs. The BAT compliant emissions of phosphine for a Wet scrubber with H<sub>2</sub>SO<sub>4</sub> solution is 0.5 mg/m<sup>3</sup>.

Using the H1 risk assessment for calculating associated process contributions (considering the stack parameter information included with the application). The additional Process Contribution (PC) of phosphine as a result of the new stack was 2.15 µg/m<sup>3</sup> for the short-term PC. The table below compares this to the accepted EALs;

	EPR/VP3030BX/V006 Phosphine PC µg/m <sup>3</sup>	EAL µg/m <sup>3</sup>	PC/EAL	Threshold of insignificance	Are emissions insignificant with respect to EAL?
Short Term	2.2	42	5.1%	10%	Yes

As the short-term PC is less than 10% threshold compared to the associated EAL, it is considered insignificant and therefore is screened out from further assessment.

### Consideration of Key Air pollutant: Hydrogen Sulphide

Hydrogen sulphide is used as a raw material into the gas scrubber, and during the scrubbing process some of this material may be released as part of the abatement equipment's emissions. The impact of the hydrogen sulphide emissions have been compared with the appropriate Environmental Assessment Level (EAL). For hydrogen sulphide, the short-term (hourly) EAL is 150 µg/m<sup>3</sup> and the long-term (annual) EAL is 140 µg/m<sup>3</sup>, as set by the H1 assessment on the gov.uk website (accessed 07/06/2018).

As a precautionary approach, the assessment of the hydrogen sulphide emissions assessed the maximum allowable concentration of hydrogen sulphide, as defined in the Nonferrous Metals Best Available Techniques Conclusions document, against the respective EALs. The BAT emission limit associated with this scrubbing technology is 2 mg/m<sup>3</sup>.

Using the H1 risk assessment for calculating associated process contributions (considering the stack parameter information included with the application). The additional Process Contribution (PC) of phosphine as a result of the new stack was 2.15 µg/m<sup>3</sup> for the short-term PC. The table below compares this to the accepted EALs;

	EPR/VP3030BX/V006 H <sub>2</sub> SO <sub>4</sub> PC µg/m <sup>3</sup>	EAL µg/m <sup>3</sup>	PC/EAL	Threshold of insignificance	Are emissions insignificant with respect to EAL?
Short Term	8.6	150	5.7%	10%	Yes
Long Term	0.4	140	0.3%	1%	Yes

As both the short-term and the long-term hydrogen sulphide PCs are less than their associated thresholds they are considered insignificant and therefore screened out from further assessment.

### Consideration of Key Air pollutant: Ammonia

The applicant submitted dispersion modelling reports to assess the risk of ammonia emissions to local receptors. As a precautionary measure the applicant modelled a continuous emission from each of the site's stacks. All ammonia emitting stack on site were included in the modelling parameters.

As part of the application submission the applicant has suggested a reduction in the ammonia Emission Limit Values for all site stacks. The applicant's proposed ELVs were lower than both the current ELVs and the present Best Available Techniques emission limits. This represents an increase in the control of the permit on the polluting potential of the site. The comparison between the prior (EPR/VP3030BX/V005) emission limit values and the new limit values are shown in the table below;

Installation Ammonia Emission Limit Values					
Emission Point	Stack Condition	EPR/VP3030BX/V005		EPR/VP3030BX/V006	
		Until 29 June 2020 mg/m <sup>3</sup>	From 30 June 2020 mg/m <sup>3</sup>	Until 29 June 2020 mg/m <sup>3</sup>	From 30 June 2020 mg/m <sup>3</sup>
A2	Existing	15	10	9	9
A5	Existing	15	10	9	9
A6	Existing	15	10	9	9
A7	New	*did not exist*	*did not exist*	9	9

The installation of the new wet scrubber represents an increase in the site's abatement capacity. This will have a positive effect in reducing the emissions from point sources and from fugitive sources (c.f. Fugitive emissions pp18).

We are in agreement with this approach. The assumptions underpinning the model have been checked and are reasonably precautionary. The way in which the Applicant used dispersion models, its selection of input data, use of background data and the assumptions it made have been reviewed by Natural Resources Wales modelling specialists to establish the robustness of the Applicant's air impact assessment. The output from the model has then been used to inform further assessment of health impacts.

### Emission limits

We have decided that emission limits should be set for the parameters listed in the permit.

#### *Hydrogen Sulphide*

An emission limit has been introduced for the expected hydrogen sulphide emissions from the new scrubber (point source reference A7), in line with BAT requirements. The limit has been set at the BAT Associated Emission Levels (AEL) of 2 mg/m<sup>3</sup> following the assessment conclusion that both the short-term and long-term emissions are insignificant.

This change has been applied to both Table S3.1a (emissions limits and monitoring requirements until 29 June 2020) as well as Table S3.1b (emissions limits and monitoring requirements from 30 June 2020). Additionally, the reporting requirements and reporting forms have also been updated within the permit.

#### *Phosphine*

An emission limit has been introduced for the expected phosphine emissions from the new scrubber (point source reference A7), in line with BAT requirements. The limit has been set at the BAT Associated Emission Levels (AEL) of 0.5 mg/m<sup>3</sup> following the assessment conclusion that short-term emissions are insignificant. There is no long-term EAL for phosphine.

This change has been applied to both Table S3.1a (emissions limits and monitoring requirements until 29 June 2020) as well as Table S3.1b (emissions limits and monitoring requirements until 30 June 2020). Additionally, the reporting requirements and reporting forms have also been updated within the permit.



## Ammonia

As part of their application, the applicant has proposed the reduction of the emission limit value (ELV) for ammonia for each of their ammonia emitting aerial point sources. The applicant suggested reducing the ammonia ELV to 9 mg/m<sup>3</sup> at each stack, which is a 40% reduction compared to their present ammonia ELVs of 15 mg/m<sup>3</sup>.

These values are also below the current BAT AEL of 10 mg/m<sup>3</sup>.

We agree with these proposals and have implemented these ELV changes into the permit. This change has been applied to both Table S3.1a (emissions limits and monitoring requirements until 29 June 2020) as well as Table S3.1b (emissions limits and monitoring requirements until 30 June 2020). Additionally, the reporting requirements and reporting forms have also been updated within the permit.

## Water and soil

The applicant has not proposed any emissions to water or to land as part of this variation. Within their risk assessment, the operator has described how the secondary containment of the new scrubbing unit, and how this will support the mitigation of risks to land and water bodies.;

The entire system of recirculation pipework and pumps are located within a cast concrete bund. This provides sufficient secondary containment and freeboard to ensure no losses are likely. Bunds are kept free of rainwater to ensure sufficient capacity is always available.

The scrubber fluid storage areas are all bunded and contained with correctly-sized bunds. These are constructed of cast concrete and where appropriate are lined with chemical resistant finish.

Based upon the information in the application we are satisfied that the appropriate measures will be in place to prevent pollution of ground and surface water.

## Odour

The impacts of odour upon local residents has been assessed as part of the application determination. The primary release that could cause offensive odours is the release of ammonia from each of the stacks. The assessment reviews the overall releases from all ammonia point sources intended for the site (emission points A2, A5, A6, and A7).

The applicant was asked to submit a quantitative assessment of the expected dispersion behaviour of the site's ammonia emissions. This was used in the assessment of the impact on odours upon residents in the surrounding area.

The quantitative assessment shows that contributions of ammonia from the Befesa site will not be expected to exceed 1ppm of ammonia in air beyond the installation boundary. This is 2% of the published detection level for this compound (Public Health England, 2015).

The applicant has also included an odour management plan (OMP), which identifies likely sources of odour from the site; local sensitive receptors which could be impacted by odour; and techniques and methods for mitigating risks of odour. The plan also includes procedures for addressing complaints regarding odour. The OMP has been incorporated into the Operating Techniques table in the permit.

Based upon the information in the application we are satisfied that the appropriate measures will be in place to prevent pollution to sensitive receptors due to odour releases.

## Noise

As part of the submitted environmental risk assessment, the applicant has outlined the major risks relating to noise pollution for the new scrubbing equipment. In the same report the applicant has also outlined the activities that will be performed to mitigate these risks.

The applicant has described the scrubber as not inherently noisy; however, it has been identified that additional noise pollution as a result of this variation will likely arise from the scrubber's ancillary equipment. This type of equipment includes air-operated ancillary pumps and machine air compressors, which are located about the installation. The applicant has also highlighted that low noise and vibration equipment models have also been specified for this system. Additionally, and where appropriate, this ancillary equipment has been located on anti-vibration mountings and acoustically insulated to reduce noise transmission. The applicant has also relied on the inherent acoustic shielding of the buildings, already present on the installation, as noise barriers.

Based upon the information in the application we are satisfied that the appropriate measures will be in place to prevent pollution to sensitive receptors due to the generation of noise and vibration.

## Fugitive emissions

Based upon the information in the application we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise fugitive emissions and to prevent pollution from fugitive emissions.

## Monitoring

We have decided that monitoring should be carried out for the parameters listed in the permit, using the methods detailed and to the frequencies specified.

These monitoring requirements have been imposed in order to confirm the installation's compliance with the emission limit values applied to the site. Monitoring requirements have been included for A7. Existing requirements remain unchanged. Emission limit values have been applied to this emission point for ammonia, hydrogen sulphide and phosphine. In line with guidance (Commission Implementing Decision (EU) 2016/1032, 2016) these points are to be monitored as per the following frequency;

	Monitoring frequency
Ammonia	Quarterly
Hydrogen Sulphide	Annually
Phosphine	Annually

We made these decisions in accordance with appropriate guidance documents.

## Reporting

The pack of reporting forms associated with the previous permit variation (EPR/VP3030BX/V005) including two reporting forms for the Installation's aerial emissions have been updated as a result of this variation. These changes include the addition of the emission point A7 and its relevant reporting parameters.

For clarity of reference, the aerial parameter reporting form to be used up until 29 June 2020 has been renamed the Air1 form and the aerial reporting form to be used from 30 June 2020 has been named the Air2 form.

As part of this variation the reporting pack associated with this permit has been re-issued. No material changes have been made to the content of the WaterUsage1, Energy1, or

Performance1 forms. Each of the forms have had their reference dates updated, as part of their identification details.

### Biodiversity, Heritage, Landscape and Nature Conservation

The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat.

The following sites are within the relevant screening distances of the installation and were considered as part of the habitats assessment.

Site	Designation	Screening Distance (from the installation)	Actual Distance (to nearest point)
Fenn's, Whixall, Bettisfield, Wem and Cadney Mosses	Special Areas of Conservation	10 km	0.17 km
Midland Meres & Mosses Phase 2: Fenn's, Whixall, Bettisfield, Wem and Cadney Mosses	Ramsar	10 km	0.17 km
Midland Meres & Mosses Phase 2: Llyn Bedydd	Ramsar	10 km	3.40 km
Midland Meres & Mosses Phase 2: Hanmer Mere	Ramsar	10 km	4.97 km
Brown Moss (England)	Special Areas of Conservation	10 km	5.26 km
Midland Meres & Mosses Phase 1: Brown Moss	Ramsar	10 km	5.26 km
Midland Meres & Mosses Phase 2: Oss Mere	Ramsar	10 km	7.02 km
Midland Meres & Mosses Phase 1: Quoisley Mere	Ramsar	10 km	7.26 km
West Midland Moss	Special Areas of Conservation	10 km	8.41 km
Midland Meres & Mosses Phase 1: Clarepool Moss	Ramsar	10 km	8.41 km
Midland Meres & Mosses Phase 2: Cole Mere	Ramsar	10 km	8.76 km
Midland Meres & Mosses Phase 2: Brownheath Moss	Ramsar	10 km	9.68 km
Fenn's, Whixall, Bettisfield, Wem and Cadney Mosses	Sites of Special Scientific Interest	2 km	0.17 km

Site	Designation	Screening Distance (from the installation)	Actual Distance (to nearest point)
Fenn's, Whixall, and Bettisfield Mosses	National Nature Reserve	2 km	0.3 km
Ancient Woodlands (7 sites)	Ancient Woodland	2 km	0.41 km - 2.0 km
Fenn's Rough	Local Wildlife Sites	2 km	0.41 km
Redbrook Marsh	Local Wildlife Sites	2 km	0.55 km
The Conery	Local Wildlife Sites	2 km	0.58 km
Redbrook Grassland	Local Wildlife Sites	2 km	1.38 km

The applicant has completed a risk assessment of the potential impact of the ammonia releases, which included computer dispersion models. This was used to assess the potential impact upon local sensitive receptors, which was recorded in the determination's 'Form 1' and 'Appendix 4' documents.

The assessments were reviewed by NRW conservation teams, as well as with Natural England. Natural England were consulted as the 10 km screening distance for Natura 2000 sites included some sites in England. The consultation for both NRW and Natural England was held between 05 June 2018 and 03 July 2018.

Responses from NRW conservation teams showed agreement with the conclusion and "although current ammonia concentrations in a part of the site exceed critical load levels the variation is expected to have a positive effect on the reduction of airborne ammonia in the region". No response was received from Natural England.

Additionally, an assessment was made of the impacts the ammonia outputs on the local wildlife sites, national nature reserves and ancient woodlands.

Following this assessment, we consider that the application will not have any additional negative affect on features of the local designated habitats.

## Operating techniques

We have reviewed the techniques used by the operator and compared these with the relevant guidance notes. We are satisfied that Operating Techniques included in the permit reflect the appropriate measures to minimise pollution.

## Permit conditions

### Improvement conditions

During the determination the applicant submitted information to support the completion of two improvement conditions set in the permit; IC19, IC20 and IC22. The detail of these improvement conditions is shown below.

Improvement conditions	
IC19	The Operator shall undertake detailed air dispersion modelling of ammonia emissions from the current chemical scrubbers on site, stacks A2, A5 and A6. The modelling shall include data from recent quarterly extractive monitoring. A report shall be forwarded to Natural Resources Wales detailing the findings of this modelling.
IC20	Where chemical species described in Table S3.1b alongside Best Available Techniques Associated Emission Levels (BAT AELs) have not historically been monitored, the Operator shall conduct an assessment of the emissions against BAT for approval by Natural Resources Wales.
IC22	<p>The Operator shall submit for approval by Natural Resources Wales a report setting out progress to achieving the BAT conclusions and BAT AELs where BAT is currently not achieved but will be achieved by the 30th June 2020. The report shall include but not be limited to the following:</p> <ul style="list-style-type: none"><li>• Current performance against the BAT conclusions and BAT AELs</li><li>• Methodology for reaching the AELs</li><li>• Associated targets/timelines for reaching compliance by 30th June 2020</li><li>• The report shall address all of the relevant BAT conclusions.</li></ul>

The assessment of this submitted data has concluded that these improvement conditions can be closed out and set as completed.

Additionally, the due date for improvement condition IC21 has been extended to 01 June 2019. This improvement condition required the operator to complete a monitoring assessment following the installation of the new A7 scrubber release point (added to the permit

as part of this variation). As the equipment is to be permitted within this variation, additional time above the previous deadline, has had to be added to allow the relevant activities of the improvement condition to be completed. Following the expected permit issue date, the operator has been allowed 3 months to install the equipment and 6 months to complete the improvement activity.

The permit table 'Table S1.3 Improvement programme requirements' has been updated accordingly.

### **Incorporating the application**

We have specified that the applicant must operate the permit in accordance with descriptions in the application, including all additional information received as part of the determination process.

These descriptions are specified in the Operating Techniques table in the permit.

### **Environment Management System**

There is no known reason to consider that the operator will not have the management systems to enable it to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence.

### **OPRA**

The OPRA score is 192.

## ANNEX 1: Consultation Responses

### A) Advertising and Consultation on the Application

The Application has been advertised and consulted upon in accordance with Natural Resources Wales Public Participation Statement. The way in which this has been carried out along with the results of our consultation and how we have taken consultation responses into account in reaching our decision is summarised in this Annex. Copies of all consultation responses have been placed on Natural Resources Wales public register.

#### 1) Consultation Responses from Statutory and Non-Statutory Bodies

Response Received from: Betsi Cadwaladr University Health Board	
Brief summary of issues raised:	Summary of action taken / how this has been covered
No grounds for objection based upon public health considerations contained in the application	Response recorded

Response Received from: Dwr Cymru Welsh Water	
Brief summary of issues raised:	Summary of action taken / how this has been covered
Did not wish to offer any comments in relation to this permitting application	Response recorded

#### 2) Consultation Responses from Members of the Public and Community Organisations

##### a) Representations from Local MP, Assembly Member (AM), Councillors and Parish / Town / Community Councils

Response Received from	
Brief summary of issues raised:	Summary of action taken / how this has been covered
No responses received	N/A

##### b) Representations from Community and Other Organisations

Response Received from	
Brief summary of issues raised:	Summary of action taken / how this has been covered
No responses received	N/A



### c) Representations from Individual Members of the Public

Response Received from	
Brief summary of issues raised:	Summary of action taken / how this has been covered
No responses received	N/A

## References

Commission Implementing Decision (EU) 2016/1032. (2016). *Establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for the non-ferrous metals industries.*

Public Health England. (2015). *Ammonia: Toxicological Overview (ref 2014790).*