Conrad (Sandycroft) Ltd

Sandycroft Peak Power Electricity Generation Facility

Non-Technical Summary

Bespoke Specified Generator Permit Application

MLM. Group

Notice

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Document History

Client: Conrad (Sandycroft) Ltd
Project: Sandycroft Peak Power Electricity Generation Facility
Document Title: Non-Technical Summary
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MLM Reference: DG/777292/RE

Revision	Status	Description	Author	Checked	Approved	Date
C01	S2		Sophie Perrin	Steve Butler	Rod Ellison	20/12/2018

Contents

1 Non-Technical Summary

1.1 Introduction

This document has been prepared on behalf of Conrad (Sandycroft) Ltd ('Conrad' or the 'Applicant' hereafter) by MLM Group Ltd and provides supporting evidence as required by Environmental Permit Application Form Part B2 and B3 issued by the Natural Resources Wales (NRW).

The Applicant is making this application for a Bespoke Specified Generator Permit under The Environmental Permitting (England and Wales) Regulation 2018 (as amended) for the operation of a peak power electricity generation facility located on land at Factory Road.

The development will consist of a Peak Power Electricity Generation Facility containing 2 x 2MW and 1 x 1.25MW natural gas-fired generators, each with their own release points.

The facility meets the definition of a 'Specified Generator' as detailed within Schedule 25B point 2 (a) (i) of the Environmental Permitting (England and Wales) Regulation 2018 (as amended):

'Specified generator means a generator, other than an excluded generator, with a rated thermal input more than or equal to 1 megawatt and less than 50 megawatts.'

1.2 Site Location

The facility is located on land at Factory Road, Deeside, Sandycroft, CH5 2DD. (National Grid Ref: 332470, 367960).

Please refer to the Site Location and Site Layout plan provided within *Appendix A – Site Plans*.

The Applicant was granted planning for the site by Flintshire County Council (Application Reference Number: 057731). Please refer to *Appendix B – Planning Permission* for a copy of the sites planning permission.

1.3 Screening Tool

The Environment Agency's 'Specified Generator Tranche B Screening Tool' has been used in order to assess whether the facility will be classed as a Low Risk Bespoke Permit or a Complex Bespoke Permit.

The screening tool identified that the facility requires a Complex Bespoke Permit resulting in the need for dispersion modelling to assess the risk to the environment from the facility. A copy of the screening tool is provided within *Appendix C – Specified Generator Tranche B Screening Tool*.

1.4 Emissions to Air

Please refer to *Appendix D – Air Quality Assessment* and *Appendix E – Air Quality Addendum* for the air quality modelling and reporting which has been carried out for the facility.

1.5 Monitoring

In accordance with the Medium Combustion Plant Directive, periodic monitoring of the 2 x 2MW and 1 x 1.25MW natural gas-fired generators will be carried out within four months of the start of operation and at least every three years in accordance with Technical Guidance Note (Monitoring) M5 – Monitoring of Stack Gas Emissions from Medium Combustion Plants and Specified Generators.

Please refer to Table 1 overleaf which provides the emission points and required monitoring frequencies.

Table 1: Emission Points and Monitoring

Emission Point	Source	Parameter	Monitoring Frequency	Methodology
Generator 1, Generator 2, Generator 3	Natural gas fired generators	• Oxides of Nitrogen • Carbon Monoxide	• First measurement within four months of the start of operation; and • At least once every three years.	Technical Guidance Note (Monitoring) M5 – Monitoring of Stack Gas Emissions from Medium Combustion Plants and Specified Generators.

1.6 Management Plan

The facility will be monitored and managed 24 hours a day by offsite personnel to ensure that it is available to generate when needed.

The peak power electricity generation facility will be operated in accordance with the operators O&M Manual. This manual will detail all environmental monitoring and reporting that will be required by the Operator. The facility will be fully automated and monitored remotely. The Operator will immediately attend site if the remote monitoring system identifies any faults in the system.

The Operator will ensure that the activities at site are managed and operated in accordance with a written management system.

Appendix A - Site Plans

LEGEND

SITE BOUNDARY

0 250 500 750 m

THIS DRAWING IS INDICATIVE ONLY

COORDINATE SYSTEM: BRITISH NATIONAL GRID
UNITS: METRE
SCALE: 1:10,000
BASEMAP SOURCE: OPEN STREET MAP

REV	DATE	DESCRIPTION	MADE	CKD

MLM. Group

DRAWING STATUS: FINAL

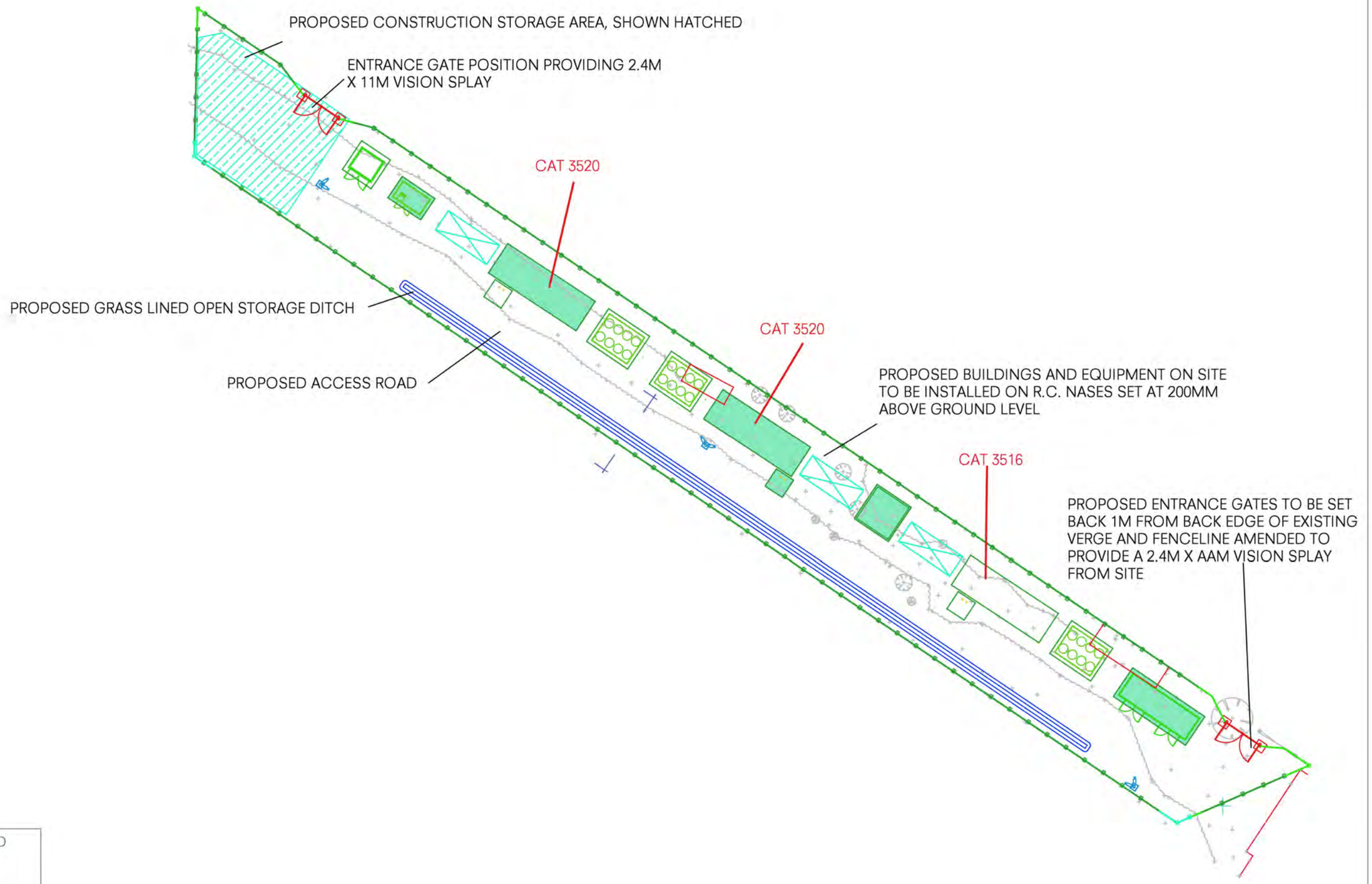
DRAWING TITLE: SITE LOCATION PLAN

CLIENT: CONRAD (SANDYCROFT) LIMITED

PROJECT: MCPD PERMIT SUPPORT

DRAWN/DESIGN:	BHH	DATE:	13/12/2018	STATUS:	S2
CHECKED:	KN	APPROVED:	RE	REVISION:	C01

DRAWING NO: 777292-MLM-ZZ-XX-DR-J-0004-FIGURE 1



THIS DRAWING IS INDICATIVE ONLY

COORDINATE SYSTEM: BRITISH NATIONAL GRID
UNITS: N/A
SCALE: NOT TO SCALE
BASEMAP SOURCE: N/A

REV	DATE	DESCRIPTION	MADE	CKD

MLM. Group

DRAWING STATUS: FINAL				DRAWING TITLE: SITE LAYOUT PLAN	
CLIENT: CONRAD (SANDYCROFT) LIMITED	DRAWN/DESIGN: BHH	DATE: 13/12/2018	STATUS: S2		
	CHECKED: KN	APPROVED: RE	REVISION: C01		
PROJECT: MCPD PERMIT SUPPORT	DRAWING NO: 777292-MLM-ZZ-XX-DR-J-0004-FIGURE 2				

Appendix B - Planning Permission

FLINTSHIRE COUNTY COUNCIL
Planning & Environment
County Hall, Mold
Flintshire. CH7 6NF

CYNGOR SIR Y FFLINT
Cynllunio a'r Amgylchedd
Neuadd y Sir, Yr Wyddgrug
Sir y Fflint. CH7 6NF

CERTIFICATE OF DECISION

Application Ref: 057731

TOWN AND COUNTRY PLANNING ACT, 1990 (as amended)
TOWN AND COUNTRY PLANNING (DEVELOPMENT MANAGEMENT PROCEDURE) (WALES) ORDER, 2012

AGENT
Lichfields
Ship Canal House
98 King Street
Manchester
M2 4WU

APPLICANT
Conrad (Sandycroft) Limited

In pursuance of their powers under the above Acts and Order the County Council as Local Planning Authority **PERMITS**:

PROPOSAL: Construction of a 5MW flexible gas fired power Station

LOCATION: Land south of Factory Road, Sandycroft, Deeside, Flintshire

In accordance with the particulars and plans comprising your application received complete on 3 November 2017 subject to the attached conditions.

Commencement

1. The development to which this permission relates shall be begun not later than the expiration of 5 years beginning with the date of this permission. Written notification of the date of commencement shall be sent to the Local Planning Authority a minimum of 14 days prior to commencement.

Reason: To comply with the provisions of Section 91 of the Town and Country Planning Act 1990.

List of relevant documents and plans

2. Except as otherwise required by conditions attached to this planning permission, the development hereby permitted shall be carried out in accordance with the following approved documents and plans received by the Local Planning Authority on 3rd November 2017 (unless otherwise stated):
   - Application form
   - Site Plan, Site Location Plan, drawing number P2109(01)-28-01 Revision B, received by the Local Planning Authority on 18/12/2017.
   - Elevations, drawing number P2109(01)-28-02 Revision C, received by the Local Planning Authority on 18/12/2017.
   - DNO Building, drawing number P2109(01)-28-03 Revision O.
   - Client Building, drawing number P2109(01)-28-04 Revision O.

- Gas Kiosk, drawing number P2109(01)-28-05 Revision O.
- Typical Gas Generator, drawing number P2109(01)-28-06 Revision C, received by the Local Planning Authority on 18/12/2017.
- Site Layout, drawing reference P2109(01)-28-08 Revision O, received by the Local Planning Authority on 18/12/2017.
- Noise Impact Assessment, document reference AC104436-1R0.
- Dispersion Modelling Assessment, document reference AQ104543R2.
- Phase 1 Geo-Environmental Site Assessment, document reference 12-224-R1.
- Planning and Design Statement.
- Flood Consequence Assessment.
- Ecological Constraints Appraisal, document reference 104447EC1R0

Reason: For the avoidance of doubt and to ensure that the development is carried out in accordance with the policies of the adopted Flintshire Unitary Development Plan.

Use of the site

3. The site shall only be used for the operation of a 5MW flexible gas fired power plant, as detailed within the application documents approved and detailed within condition 2 of this permission, and for no other purpose.

Reason: Because the proposal has been considered on this basis and the acceptability of other highly vulnerable uses in this location would need to be considered afresh as a result of the flood risk to the site, in accordance with policies GEN 1 and EWP17 of the Flintshire Unitary Development Plan.

Flood Risk

4. Prior to the commencement of development a scheme which details flood mitigation measures shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall include:
   - A topographical survey of the site;
   - Details of mitigation to manage flood risk for the lifetime of development;
   - Details of compensatory flood storage capacity to prevent any increase in flooding off-site;
   - Cross sections of the site which demonstrate how the mitigation will be constructed;
   - A site plan identifying the location of cross sections;
   - Provision of on-going management for any flood storage;
   - A timetable for implementation.

   The scheme shall be fully implemented in accordance with the timing / phasing arrangements embodied within the scheme, or within any other period as may be subsequently agreed in writing by the local planning authority.

.
Reason: In the interests of mitigating flood risk, in accordance with policies GEN 1 and EWP 17 of the adopted Flintshire Unitary Development Plan.

5. No development shall take place until such time as an emergency plan for the site has been submitted and approved in writing by the local planning authority. The scheme shall include details of safe evacuation routes, warning mechanisms to inform staff when on site and a monitoring of weather warnings. The approved scheme shall be implemented in full.

Reason: To ensure that the consequences of a flooding event can be effectively managed, in accordance with policy EWP17 of the adopted Flintshire Unitary Development Plan.

Noise

6. No construction work shall be undertaken between the hours of 1800 and 0800.

Reason: In the interests of residential amenity, in accordance with policies GEN 1 and EWP 13 of the adopted Flintshire Unitary Development Plan.

7. No site maintenance works shall be carried out between the hours of 1800 and 0800, except in an emergency.

Reason: In the interests of residential amenity, in accordance with policies GEN 1 and EWP 13 of the adopted Flintshire Unitary Development Plan

8. Between the hours of 1800 and 0800 noise levels arising from the site shall not exceed 42dB (LAeq) (5 min) at the nearest noise sensitive property, except during an emergency.

Reason: In the interests of residential amenity, in accordance with policies GEN 1 and EWP 13 of the adopted Flintshire Unitary Development Plan.

9. During the operational phase of the development between the hours of 0800 and 1800 noise levels arising from the site shall not exceed 55dB (LAeq) (1 hour) at the nearest noise sensitive property, except during an emergency.

Reason: In the interests of residential amenity, in accordance with policies GEN 1 and EWP 13 of the adopted Flintshire Unitary Development Plan.

Landscaping and Ecology

10. No development shall take place until a landscape plan which identifies the trees and vegetation to be retained on site and provides details of protection measures during construction has been submitted and approved by the Local Planning Authority. The approved plan shall be implemented in full.

Reason: In the interests of maintaining the ecological interest of the site, in accordance with policy GEN 1 of the adopted Flintshire Unitary Development Plan.

11. The recommendations contained within section 4 of the Ecological Constraints Appraisal shall be implemented.

Reason: In the interests of maintaining the ecological interest of the site, in accordance with policy GEN 1 of the adopted Flintshire Unitary Development Plan.

12. No development shall take place until a Biosecurity Risk Assessment has been submitted and approved by the Local Planning Authority. The approved Biosecurity Risk Assessment shall be implemented as approved.

Reason: To prevent the introduction or spread of invasive species, thereby protecting the ecological interest of the site and surrounding area, in accordance with policy GEN 1 of the adopted Flintshire Unitary Development Plan.

Lighting

13. Details of any external lighting shall be submitted to and approved in writing by the Local Planning Authority prior to its installation and use on site.

Reason: In the interests of residential amenity, in accordance with policies GEN 1 and EWP 13 of the adopted Flintshire Unitary Development Plan.

14. Notwithstanding the requirements of condition13, all lighting on site, including fixed and mobile lighting, shall be directed away from the adjacent caravan site and railway line and shall only be used when necessary for the safe and effective operation of the facility.

Reason: In the interests of residential amenity, in accordance with policies GEN 1 and EWP 13 of the adopted Flintshire Unitary Development Plan.

Contaminated Land

15. No development shall take place until a site investigation of the nature and extent of contamination has been carried out in accordance with a methodology which has previously been submitted to and approved in writing by the Local Planning Authority beforehand. If any contamination is found during the site investigation, a report specifying the measures to be taken to remediate the site to render it suitable for the devleopment hereby permitted, including measures to verify the approved works, shall be submitted to and approved in writing by the Local Planning Authority. The site shall be remediated in accordance with the approved measures prior to operation of the facility. If during the course of development, any contamination is found which has not been identified in the site investigation, additional measures for the remediation of this source of contamination and subsequent verification details shall be submitted to and approved in writing by the Local Planning Authority. The remediation of the site shall incorporate the approved additional measures.

Reason: In order to ensure that the development is safeguarded against the risks from possible contamination and in compliance with Policy GEN1 of the Flintshire Unitary Development Plan.

Highways

16. Prior to the commencement of development details of access and egress to the site shall be submitted to and approved in writing by the Local Planning Authority. The access and egress shall be implemented as approved.

Reason: In the interest of highway safety, in accordance with policies GEN 1 and AC13 of the adopted Flintshire Unitary Development Plan.

Network Rail

17. A risk assessment and method statement (RAMS) which will shall include any impacts of the development on Network Rail land and measures to ensure safe working, shall be submitted to and approved in writing by the Local Planning Authority prior to the commencement of the development. The works shall be carried out in accordance with the approved risk assessment and method statement.

Reason: In the interests of the health and safety of users of both the development site and the adjacent railway, in accordance with GEN 1 of the adopted Flintshire Unitary Development Plan.

Drainage

18. No development shall take place until a scheme for the provision of surface water drainage has been submitted to and approved in writing by the Local Planning Authority. The scheme shall be implemented as approved prior to the operation of the facility.

Reason: To ensure that surface water is adequately managed, in the interests of mitigating flood risk, in accordance with policies GEN 1 and EWP 17 of the adopted Flintshire Unitary Development Plan.

Dated: 02/01/2018

Signed: ……

Chief Officer (Planning & Environment)

NOTES TO APPLICANT

1. You are reminded that this permission must be carried out strictly in accordance with the above specified plans and the conditions referred to upon this certificate of decision. If any amendments are proposed, you should NOT proceed without first obtaining the written approval of the Local Planning Authority. The development hereby approved has been considered on the basis that the input is 11MWth required to generate 5MW energy and permission is therefore granted on this basis.

2. Any development carried out without compliance with the plans and particulars approved and the conditions of this permission, may be liable to enforcement action. You are also advised that separate approval under the Building Regulations and/or a licence under the Environmental Health Regulations may be required. Further advice on this may be obtained from the relevant department of the County Council.

3. In determining this application, the Council has had regard to the Policies of the Development Plan, and regional and national policy, legislation and guidance. Subject to the imposition of conditions (above), there is no planning reason why planning permission should be refused.

4. This application has been determined in accordance with The Town and Country Planning Acts and in the context of the Government's current planning policy guidance and the relevant circulars, together with the relevant Development Plan policies, including those referred to under specific conditions above. The proposed development gives rise to no material harm, is in accordance with the development plan and there are no material considerations that indicate that the decision should have been made otherwise.

Relevant Policies

Flintshire Unitary Development Plan Policies:
GEN 1: General requirements for development
GEN 2: Development inside settlement boundaries
D1: Design, quality, location and layout
D3: Landscaping
D4: Outdoor lighting
TWH2: Protection of hedgerows
WB1: Species Protection
WB2: Sites of International Importance
WB3: Statutory Sites of National Importance
AC13: Access and traffic impact
EM1: General employment land allocations
EWP12: Pollution
EWP13: Nuisance
EWP14: Derelict and Contaminated Land
EWP17: Flood Risk

National Planning Policy and Guidance
Planning Policy Wales Edition 9 (2016)
Technical Advice Note 5: Nature Conservation and Planning (2009)
Technical Advice Note 11: Noise (1997)
Technical Advice Note 12: Design (2009)

Technical Advice Note 15: Development and Flood Risk (2004)
Technical Advice Note 18: Transport (2007)

National Energy Policy
Overarching National Policy Statement for Energy EN-1 (2011)
The Energy Act 2013
UK Low Carbon Transition Plan (2009)
Climate Change Act (2008)
Energy Wales: A Low Carbon Transition (2012)

Pollution Prevention
5. It is recommended that the requirements of Planning Policy Wales and the Guiding Principles for Land Contamination (GPLC) should be followed.

Water Courses
6. The site is adjacent to a water course. A Flood Risk Activity Permit would be required for any works in, over, under or near a main river or flood defence (including a sea defence), or within a flood plain. Please refer to Natural Resources Wales website for further advice: https://naturalresources.wales/permits-and-permissions/flood-risk-activities/flood-risk-activity-permits-information/?lang=en

Industry Regulations
7. You are advised to consider the requirements of The Environmental Permitting (England and Wales) Regulations 2016, as amended in particular by the Medium Combustion Plant Directive 2015/2193/EU.

Coal Authority Standing Advice
8. The proposed development lies within a coal mining area which may contain unrecorded coal mining related hazards. If any coal mining feature is encountered during development, this should be reported immediately to The Coal Authority on 0345 762 6848. Further information is available on The Coal Authority website at: www.gov.uk/government/organisations/the-coal-authority. Property specific information on past, current and future coal mining activity can be obtained from: www.groundstability.com.

STATUTORY PROVISIONS & NOTES
APPEALS TO THE WELSH GOVERNMENT

9. If the applicant is aggrieved by the decision of the Local Planning Authority to refuse permission of approval for the proposed development, or to grant permission or approval subject to conditions, he may by notice served within six months of receipt of this notice, appeal to the Welsh Government in accordance with Section 78 of the Town and Country Planning Act, 1990. The Welsh Government has power to allow a longer period for the giving of notice of appeal, but will not normally be prepared to exercise this power unless there are special circumstances which excuse the delay in giving notice of appeal. The Welsh Government is not required to entertain an appeal if it appears that permission for the proposed development could not have been granted by the Local Planning Authority, or could not have been granted otherwise than subject to conditions imposed by them having regard to the statutory requirements of Section 79(6) of the Town and Country Planning Act, 1990, namely Sections 70(1), (2) and (3), and 72(1) of the Act, and to the

provisions of the development order, and to any directions given under the order.

10. Notice of Appeal should be given on the prescribed form, obtainable from the Welsh Government, Planning Inspectorate, Crown Buildings, Cathays Park, Cardiff. CF10 3NQ (Tel: 02920 825670 - Fax: 02920 825150).

11. Should the appellant wish the Welsh Government to appoint a Welsh speaking Inspector to hear any appeal against the Local Planning Authority's decision, such a request should be made to the Welsh Government when Notice of Appeal is forwarded to that office at the address given above.

12. **Purchase Notices**

If permission to develop land is refused or granted subject to conditions whether by the Local Planning Authority or by the Welsh Government, and the new owner of the land claims that the land has become incapable of reasonably beneficial use in its existing state and cannot be rendered capable of reasonably beneficial use by the carrying out of any development which has been or would be permitted he may serve on the Council a purchase notice requiring the Council to purchase his interest in the land in accordance with the provisions of Part V1 of the Town and Country Planning Act, 1990.

13. **Compensation**

In certain circumstances, a claim may be made against the Local Planning Authority for compensation, where permission is refused or granted subject to conditions by the Welsh Government on appeal or on a reference of the application to them. The circumstances in which such compensation is payable are set out in Section 115 of the Town and Country Planning Act, 1990.

14. **General**

The enclosed decision relates to planning control only and does not cover any other statutory provisions for which consent may be required from the appropriate authority.

Appendix C - Specified Generator Tranche B Screening Tool

Air Quality Modelling and Assessment Unit (AQMAU)

SPECIFIED GENERATOR TRANCHE B SCREENING TOOL

Version 1.0

STEP1: GENERAL SITE INFORMATION

Applicant name	Conrad (Sandycroft) Ltd	
Specified generator usage type category (Select from the drop-down list)	CHP	
Is it a mixed Tranche A and B Specified Generator site? (Select yes or no)	No	
Specified generators aggregated rated thermal input	13.17	**MW**
Operational hours per year	2000	**hours**
If 'Peaking' or 'Balancing', is rolling average flexibility required? (Select yes or no)	No	
Existing or new medium combustion plant generators? (Select from drop-down list)	New	
Emission Limit Value (273 K, dry and 15% O_2) (Automatically selected)	95	**mg/Nm^3**
Do the generators have secondary abatement fitted? (Select yes or no)	No	

Attainable emission concentration (273 K, dry and 15% O_2)	92	**mg/Nm^3**
Screening Emission Limit Value (273 K, dry and 15% O_2) (Automatically selected)	95	**mg/Nm^3**

STEP 2: RELEASE INFORMATION

Stack height	10	**m**

Is there one or more buildings within 5L and with heights more than 40% of the stack height? (Select yes or no)	Yes

Height of tallest building within 5L	15	**m**
Length (or length of combined block for multiple buildings)	44.1	**m**
Width (or width of combined block for multiple buildings)	127.3	**m**

Maximum downwash cavity length	67	**m**
Are there any receptors within the downwash cavity length from the nearest edge/side of the building? (Select yes or no)	No	

STEP 3: STUDY AREA SETTING AND BACKGROUND CONCENTRATIONS

Sensitive receptor setting (Select from drop-down list)	Suburban

Sensitive receptors near an A road or motorway network? (Select yes or no)	Yes

Sensitive receptors within an AQMA declared for NO_2? (Select yes or no)	No

Baseline background NO_2 concentration	12.9	**$\mu g/m^3$**

STEP 4: RECEPTORS

Distance to nearest non-roadside Human Health Receptor	195	**m**
Are there any human health receptors where there is roadside public exposure?	Yes	
Distance to nearest roadside Human Health Receptor	300	**m**

Are there any SACs, SPAs, Ramsar sites or SSSIs within 3.5 km?	Yes	
Distance to nearest SAC, SPA, Ramsar site or SSSI	425	**m**

STEP 5: ENVIRONMENTAL RISK

Run tool

Non-roadside human health screening distance is:	200	**m**
Roadside human health screening distance is:	300	**m**

The SAC, SPA, Ramsar site or SSSI screening distance is:	800	**m**

Screening result:	Screens in for human health

USER NOTES:
Please enter the name that will appear on the environmental permit.

USER NOTES:
CHP - Combined heat and power plant typically used to provide mid-merit or base load electricity and therefore assumed to operate up to 8760 hours per year.
Peaking - Peaking plant are used to provide power during grid peak demand periods and are assumed to operate between 501 and 1500 hours per year.
Balancing - Balancing plant are considered to operate between 51 and 500 hours per year and are typically used to provide balancing power reserve to the grid.

USER NOTES:
Select yes, if there are any Tranche A generators on the Specified Generator site. If there are, then all Tranche A generators must comply with the Tranche B generator requirements.
Select no, if there are no Tranche A generators on the Specified Generator site.

USER NOTES:
This is the total aggregated thermal input of all generators on the Specified Generator site. It should include Tranche A and B generators for mixed sites.
CHPs - Screening distances for up to 25 MWth aggregated plant have been calculated.
Peaking and balancing plant - Screening distances for up to 50 MWth aggregated plant have been calculated.

USER NOTES:
Enter the number of operational hours per year.
Select yes, if rolling average flexibility is required for the peaking or balancing plant. These are: rolling averages over a period of 3 years for new plant operating no more than 500 hours per year; and 5 years for existing plant operating no more than 500 hours per year or plant operating between 501 and 1500 hours per year.
Otherwise select no.

USER NOTES:
Generators with rated thermal input greater than 1 MW and less than 50 MW are medium combustion plant. Those that operate more than 500 hours per year will be required to comply with MCPD ELVs, those that operate up to 500 hours must comply with the SG ELV.
Existing - MCPs operating before 20 December 2018 and more than 500 hours (MCPD ELV 190 mg/Nm^3).
New - MCPs operating after 20 December 2018 and more than 500 hours (MCPD ELV 95 mg/Nm^3).
Other - MCPs operating up to 500 hours per year, or generators with individual rated thermal inputs less than 1 MW (SG ELV 190 mg/Nm^3).

USER NOTES:
Select yes, if secondary abatement is used to reduce emissions from generators on the specified generator site.

Select no, if no secondary abatement is fitted.

USER NOTES:
Enter the emission concentration that all the generators on the site can achieve.
If it is a mixed Tranche A and B site, it should be no more than the Specified Generator ELV of 190 mg/Nm^3.
A lower Emission Limit Value can be set and screened against if it can be achieved.
The lowest Emission Limit Value possible is 35 mg/Nm^3, which can be achieved when secondary abatement is fitted.
If left blank the screening Emission Limit Value will be set automatically.

USER NOTES:
The stack height is the height of the top of the stack above ground level of the release point. If there are multiple generator stacks then the lowest stack should be entered.

USER NOTES:
If yes, all buildings that could affect dispersion must be combined into a single effective combined block. Buildings that can affect dispersion must be both:
• Within 5L of the stack, where L is the lowest of either the height of the building, or the maximum projected width (for example, the opposing corners of a roof). Typically, L will be the building height unless the building is a tower.
• Have a height that is more than 40% of the stack height.
Select no, only if there are no buildings that satisfy the above criteria.

USER NOTES:
Enter height of tallest building that can affect dispersion.
Enter the length and width of the building or the combined block building.
If there are no buildings that could affect dispersion then leave blank.

USER NOTES:
There are very high uncertainties when predicting impacts in the cavity region of buildings that cause downwash.
Select yes, if there are any sensitive receptors within the calculated downwash cavity length from any side or corner of the inputted building.
Otherwise, select no.

USER NOTES:
The study area should be defined based on a 1 km buffer zone around the site.
Rural - Rural settings are locations in the open countryside, agricultural areas, villages and small towns.
Suburban - Suburban settings are mixed-use or residential areas on the outskirts of a city or large town.
Industrial - Industrial settings are locations where industry is the main land use and makes a contribution to the pollution burden.
Urban - Urban settings are considered to be locations in the main areas of a city or large town.

USER NOTES:
Receptors near roads have elevated background NO_2 concentrations.

Select yes, if there is an A road (main road) or motorway within 50 m of receptors in the study area.
Otherwise, select no.

USER NOTES:
If there are receptors within an Air Quality Management Area (AQMA), then there is likely to be little or no headroom. Current AQMAs can be found at the following link https://uk-air.defra.gov.uk/aqma/maps
Select yes, if the receptor is within an AQMA declared for nitrogen dioxide (NO_2).
Otherwise select no.

USER NOTES:
Enter the assumed baseline background concentration for the study area.
The Local Authority can give baseline background concentrations for the study area from their local air quality management responsibilities.
The baseline background should not be a roadside or kerbside concentration.

USER NOTES:
Enter the shortest distance from any generator stack to the nearest receptor where there is relevant public exposure.
Non-roadside receptors are those where there is public exposure beyond 15 m of any road or street.
Roadside receptors are those where there is public exposure within 15 m of a busy road or junction (10,000 vehicles/day or more), or a congested narrow streets (5,000 vehicles/day.
Higher backgrounds are automatically assumed for these receptors.
Select yes, if there if there is relevant public exposure within 15 m of a busy road and enter the distance to the nearest roadside receptor.
Otherwise, select no and enter no distance.
Examples of public exposure are given in the 'Guidance on dispersion modelling for oxides of nitrogen assessment from specified generators'.

USER NOTES:
Select yes, if there is a SAC (Special Area of Conservation), SPA (Special Protection Area), Ramsar site or SSSI (Site of Special Scientific Interest) within 3.5 km (3500 m).
If yes, enter the distance in meters from any generator stack to the nearest habitat site.
Otherwise, select no and enter no distance.

Reset data

and habitats. Complex bespoke application required.

Appendix D - Air Quality Assessment

DISPERSION MODELLING ASSESSMENT
FACTORY ROAD, DEESIDE

REC REFERENCE: AQ104543R2

REPORT PREPARED FOR: CONRAD ENERGY

DATE: NOVEMBER 2017

National Consultancy, Locally Delivered

A CONCEPT LIFE SCIENCES COMPANY

Issue/revision	Issue 1	Revision 1	Revision 2	Revision 3
Remarks	Draft for review	-		
Date	01/11/2017	02/11/2017		
Prepared by	Josh Jones	Josh Jones		
Signature				
Position	Graduate Air Quality Consultant	Graduate Air Quality Consultant		
Checked by	Josh Davies	Josh Davies		
Signature				
Position	Air Quality Consultant	Air Quality Consultant		
Verified by	Conal Kearney	Conal Kearney		
Signature				
Position	Principal Air Quality Consultant	Principal Air Quality Consultant		
Project number	AQ104453r1	AQ104453r2		

EXECUTIVE SUMMARY

Resource and Environmental Consultants Ltd was commissioned by Conrad Energy to undertake a Dispersion Modelling Assessment in support of a proposed Short Term Operating Reserve Site for gas powered electricity generators at Factory Road, Deeside.

The proposals comprise the installation of a series of gas powered electricity generators. Combustion emissions from the selected plants will be released through dedicated stacks. The generators may have the potential to increase pollutant concentrations in the vicinity of the site. As such, a Dispersion Modelling Assessment was required to quantify effects at sensitive locations.

Impacts on existing pollutant concentrations were predicted to be not significant at any location within the assessment extents. Nitrogen and acid gas deposition rates were also predicted at the relevant ecological sites. Results indicated that emissions from the installation would not significantly affect existing conditions at any designation.

It should be noted that predicted impacts were based on a conservative assessment scenario of real time operating as such, predicted results are likely to a robust prediction of actual impacts.

Based on the assessment results, air quality issues are not considered a constraint to planning consent for the development.

TABLE OF CONTENTS

APPENDICES

1. INTRODUCTION

1.1 Background

Resource and Environmental Consultants (REC) Ltd was commissioned by Conrad Energy to undertake a Dispersion Modelling Assessment in support of the proposed Short Term Operating Reserve (STOR) Sites for gas powered electricity generators at Factory Lane, Deeside.

1.2 Site Location and Context

The proposed development is located at Factory Road, Deeside, at approximate National Grid Reference (NGR): 332470, 367960. Reference should be made to Figure 1 for a map of the proposed generator locations and the surrounding area.

The proposals include the installation of a 3 gas powered electricity generators. Combustion emissions from the selected plants will be released through individually dedicated stacks. These have the potential to increase pollutant concentrations in the vicinity of the site. A Dispersion Modelling Assessment was therefore required to consider any effects associated with the installation. This is detailed in the following report.

1.3 Limitations

This report has been produced in accordance with REC's standard terms of engagement. REC has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from REC; a charge may be levied against such approval.

2 LEGISLATION AND POLICY

2.1 European Legislation

European Union (EU) air quality legislation is provided within Directive 2008/50/EC, which came into force on 11th June 2008. This Directive consolidated previous legislation which was designed to deal with specific pollutants in a consistent manner and provided new air quality objectives for particulate matter with an aerodynamic diameter of less than 2.5µm ($PM_{2.5}$). The consolidated Directives include:

- Directive 99/30/EC - the First Air Quality "Daughter" Directive - sets ambient Air Quality Limit Values (AQLVs) for nitrogen dioxide (NO_2), oxides of nitrogen (NO_x), sulphur dioxide, lead and particulate matter with an aerodynamic diameter of less than 10µm (PM_{10});
- Directive 2000/69/EC - the Second Air Quality "Daughter" Directive - sets ambient AQLVs for benzene and carbon monoxide; and
- Directive 2002/3/EC - the Third Air Quality "Daughter" Directive - seeks to establish long-term objectives, target values, an alert threshold and an information threshold for concentrations of ozone in ambient air.

The fourth daughter Directive was not included within the consolidation and is described as:

- Directive 2004/107/EC - sets health-based limits on polycyclic aromatic hydrocarbons, cadmium, arsenic, nickel and mercury, for which there is a requirement to reduce exposure to as low as reasonably achievable.

2.2 UK Legislation

The Air Quality Standards Regulations (2010) came into force on 11th June 2010 and transpose the EU Directive 2008/50/EC into UK law. AQLVs were published in these regulations for 7 pollutants, as well as Target Values for an additional 6 pollutants.

Part IV of the Environment Act (1995) requires UK government to produce a national Air Quality Strategy (AQS) which contains standards, objectives and measures for improving ambient air quality. The most recent AQS was produced by the Department for Environment, Food and Rural Affairs (DEFRA) and published in July 2007[1]. The AQS sets out Air Quality Objectives (AQOs) that are maximum ambient pollutant concentrations that are not to be exceeded either without exception or with a permitted number of exceedances over a specified timescale. These are generally in line with the AQLVs, although the requirements for compliance vary slightly.

Table 1 presents the AQOs for pollutants considered within this assessment.

[1] The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, DEFRA, 2007.

Table 1 Air Quality Objectives

Pollutant	Air Quality Objective	
	Concentration (µg/m^3)	Averaging Period
NO_2	40	Annual mean
	200	1-hour mean; not to be exceeded more than 18 times a year
CO	10,000	Maximum daily running 8-hour mean

Table 2 summarises the advice provided in DEFRA guidance LAQM (TG16)[2] on where the AQOs for pollutants considered within this report apply.

Table 2 Examples of Where the Air Quality Objectives Apply

Averaging Period	Objectives Should Apply At	Objectives Should Not Apply At
Annual mean	All locations where members of the public might be regularly exposed Building façades of residential properties, schools, hospitals, care homes etc	Building façades of offices or other places of work where members of the public do not have regular access Hotels, unless people live there as their permanent residence Gardens of residential properties Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term
24-hour and 8-hour mean	All locations where the annual mean objective would apply, together with hotels. Gardens of residential properties	Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term
1-hour mean	All locations where the annual mean and 24-hour mean and 8-hour objectives apply. Kerbside sites (for example, pavements of busy shopping streets) Those parts of car parks, bus stations and railway stations etc which are not fully enclosed, where members of the public might reasonably be expected to spend one hour or more Any outdoor locations where members of the public might reasonably be expected to spend one hour or longer	Kerbside sites where the public would not be expected to have regular access

[2] Local Air Quality Management Technical Guidance 2016 LAQM (TG16), DEFRA, 2016.

2.3 Local Air Quality Management

Under Section 82 of the Environment Act (1995) (Part IV) Local Authorities (LAs) are required to periodically review and assess air quality within their area of administration under the system of Local Air Quality Management (LAQM). This review and assessment of air quality involves considering present and likely future air quality against the AQOs. If it is predicted that levels at sensitive locations where members of the public are regularly present for the relevant averaging period are likely to be exceeded, the LA is required to declare an AQMA. For each AQMA the LA is required to produce an Air Quality Action Plan (AQAP), the objective of which is to reduce pollutant concentrations in pursuit of the AQOs.

2.4 Industrial Pollution Control Legislation

Atmospheric emissions from industry are controlled in England and Wales through the Environmental Permitting (England and Wales) Regulations (2016) and subsequent amendments.

2.5 National Planning Policy

2.5.1 National Planning Policy Framework

The National Planning Policy Framework[3] (NPPF) was published on 27th March 2012 and sets out the Government's core policies and principles with respect to land use planning, including air quality. The document includes the following considerations which are relevant to this assessment:

> "The planning system should contribute to and enhance the natural and local environment by:
>
> [...]
>
> Preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability"
>
> "Planning policies should sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with the local air quality action plan."

The implications of the NPPF have been considered throughout this assessment.

2.5.2 National Planning Practice Guidance

The National Planning Practice Guidance[4] (NPPG) web-based resource was launched by the Department for Communities and Local Government on 6th March 2014 to support the NPPF and make it more accessible. The air quality pages are summarised under the following headings:

[3] National Planning Policy Framework, Department for Communities and Local Government, 2012.
[4] http://planningguidance.planningportal.gov.uk/.

1. Why should planning be concerned about air quality?
2. What is the role of Local Plans with regard to air quality?
3. Are air quality concerns relevant to neighbourhood planning?
4. What information is available about air quality?
5. When could air quality be relevant to a planning decision?
6. Where to start if bringing forward a proposal where air quality could be a concern?
7. How detailed does an air quality assessment need to be?
8. How can an impact on air quality be mitigated?
9. How do considerations about air quality fit into the development management process?

These were reviewed and the relevant guidance considered as necessary throughout the undertaking of this assessment.

2.6 Local Planning Policy

2.6.1 Flintshire County Council – Unitary Development Plan

The Flintshire County Council Unitary Development Plan (UDP)[5] sets out the council's spatial vision for the County, from a period from 2000 to 2015. The aim of the Plan is to provide a framework for making rational and consistent decisions on planning applications, and to guide development to appropriate locations. The Plan also sets out the basis to bring about sustainable development.

A review of the Flintshire UDP indicated the following policy in relation to air quality that is relevant to this assessment:

> "**EWP 12 – Pollution**
>
> New development which is sensitive to pollution or hazard either directly or indirectly will be permitted only in areas where existing activities pose no potential risk of such impacts.
>
> New development which would create an additional risk of pollution or hazard will be permitted only where:
>
> a) it would not create or increase risk to the general public outside the boundaries of the site; and,
> b) it would not impose significant restrictions on the use or development of surrounding land.

This policy has been considered throughout this report by assessing potential air quality impacts as a result of the proposed development.

2.6.2 Flintshire County Council – Local Development Plan

Following the adoption of the Flintshire UDP, the Council is now embarking on the preparation of a Local Development Plan (LDP) for the County. The Local Development Plan (LDP) will focus on delivering sustainable development in the County from 2015 to 2030 and will include:

- Policies which will guide decisions on planning applications

[5] West Lancashire Borough Council – Local Plan 2012 - 2027

- Proposals for the development of housing, retail, employment and other land uses
- Policies which seek the protection and enhancement of the natural and built environment

It should be noted that the LDP is currently undergoing consultation and as such, no policies regarding Air Quality were available at the time of producing this assessment.

2.7 Critical Loads and Levels

A critical load (CL) is defined by the UK Air Pollution Information System[6] (APIS) as:

> "A quantitative estimate of exposure to deposition of one or more pollutants, below which significant harmful effects on sensitive elements of the environment do not occur, according to present knowledge. The exceedence of a critical load is defined as the atmospheric deposition of the pollutant above the critical load."

A critical level is defined as:

> "Threshold for direct effects of pollutant concentrations according to current knowledge. Exceedence of a critical level is defined as the atmospheric concentration of the pollutant above the critical level."

A critical load refers to deposition of a pollutant, while a critical level refers to pollutant concentrations in the atmosphere (which usually have direct effects on vegetation or human health).

When pollutant loads (or concentrations) exceed the critical load or level it is considered that there is a risk of harmful effects. The excess over the critical load or level is termed the exceedance. A larger exceedance is often considered to represent a greater risk of damage.

Maps of critical loads and levels and their exceedances have been used to show the potential extent of pollution damage and aid in developing strategies for reducing pollution. Decreasing deposition below the critical load is seen as means for preventing the risk of damage. However, even a decrease in the exceedance may infer that less damage will occur.

Critical loads have been designated within the UK based on the sensitivity of the receiving habitat and have been reviewed for the purpose of this assessment.

[6] UK Air Pollution Information System, www.apis.ac.uk.

3 BASELINE

Existing air quality conditions in the vicinity of the installation were identified in order to provide a baseline for assessment. These are detailed in the following sections.

3.1 Local Air Quality Management

As required by the Environment Act (1995), Flintshire County Council (FCC) has undertaken Review and Assessment of air quality within their area of administration. This process has indicated that pollutant concentrations are below the relevant AQOs at locations of relevant exposure. As such, no AQMAs have been declared

3.2 Air Quality Monitoring

Monitoring of pollutant concentrations is undertaken by FCC using both continuous and periodic methods throughout their area of administration. There are currently two automatic analysers operated by FCC, the closest of which is Rose Cottage (Roadside) located approximately 8.5km south-west of the site at NGR: 324374, 365011. Due to the distance between the development site and automatic analyser, similar pollutant concentrations would not be expected and as such, this monitoring station has not been considered further within this assessment.

FCC also utilise passive diffusion tubes for NO_2 monitoring. A review of the most recent LAQM Air Quality Report available indicated that there is one diffusion tube located in the borough. Recent NO_2 monitoring results from this site is summarised in Table 3

Table 3 Diffusion Tube Monitoring Data

Site ID	Location	Annual Mean Concentration (µg/m^3)	
		2014	2015
Site 52	28, Chester Road, Pentre, Deeside	17.2	15.1

As indicated in Table 3, monitored annual mean NO_2 concentrations were below the relevant AQO during 2015. Further monitoring of pollutant concentrations relevant to this assessment is not undertaken by FCC.

3.3 Background Pollutant Concentrations

Predictions of background pollutant concentrations on a 1km by 1km grid basis have been produced by DEFRA for the entire of the UK to assist LAs in their Review and Assessment of air quality. The proposed development site is located in grid square NGR: 332500, 367500. Data for this location was downloaded from the DEFRA website[7] for the purpose of this assessment and is summarised in Table 4.

[7] http://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html.

Table 4 Predicted 2018 Background Pollutant Concentrations

Pollutant	Predicted Background Concentration (µg/m^3)
NO_x	17.98
NO_2	12.91
CO	296.00

It should be noted that background concentrations of NO_2 and NO_x were predicted for 2018 in order to consider the closest possible opening year of the plant. The background concentration of CO was predicted for 2001. These are the most recent predictions available from DEFRA and are therefore considered to provide a reasonable representation of background concentrations in the vicinity of the site.

3.4 Sensitive Receptors

A sensitive receptor is defined as any location which may be affected by changes in air quality. These have been defined for human and ecological receptors in the following Sections.

3.4.1 Sensitive Human Receptors

A desk-top study was undertaken in order to identify any sensitive human receptor locations in the vicinity of the site that required specific consideration during the assessment. These were modelled at the height of 1.5m in order to represent ground floor level and are summarised in Table 5.

Table 5 Sensitive Human Receptors

Receptor		NGR (m)	
		X	Y
R1	H B Car Sales	332448.8	368015.9
R2	BDS Automotive	332464.7	367990.6
R3	Scottish Power, Queensferry Depot	332573.5	367997.6
R4	Automotive Component Remanufacturing Ltd	332566.9	367933.6
R5	Automotive Component Remanufacturing Ltd	332579.8	367920.3
R6	DPL Rescue & Recovery	332523.9	367992.4
R7	Wizz Kidz (3a Ffordd Pentre)	332204.2	368010.4
R8	7 Chemistry Lane	332320.2	367808.6
R9	The Old Mission Site, Chester Road East	332237.3	367761.8
R10	2 Chester Road East	332157.8	367776.8
R11	1 Saltney Terrace, Chester Road	332307.2	367704.8

Receptor		NGR (m)	
		X	Y
R12	58 Queen Street	331945.2	368172.0

The sensitive receptors identified in Table 5 represent worst-case locations i.e. the receptors at which air quality impacts from the proposals are expected to be the greatest. However, this is not an exhaustive list and there may be other locations within the vicinity of the site that may experience air quality impacts as a result of atmospheric emissions from the facility that have not been individually identified above. Reference should be made to Figure 1 for a graphical representation of sensitive human receptor locations.

3.4.2 Sensitive Ecological Receptors

With regard to receptors of ecological sensitivity, Environment Agency (EA) guidance[8] states:

> "Note that conservation sites need only be considered where they fall within set distances of the activity:
>
> - Special Protection Areas (SPAs), Special Areas of Conservation (SACs) or Ramsar sites within 10km of the installation (or 15km coal or oil-fired power station);
> - Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs), Local Nature Reserves (LNRs), Local Wildlife Sites (LWS) and Ancient Woodland (AW) within 2km of the location.
>
> Some larger emitters may be required to screen to 10km or 15km for SSSIs."

Atmospheric emissions from the facility have the potential to impact on receptors of ecological sensitivity within the vicinity of the site. A study was undertaken to identify any statutory designated sites of ecological or nature conservation importance within the distances stated above. This was completed using the Multi-Agency Geographic Information for the Countryside (MAGIC) web-based interactive mapping service[9] which draws information on key environmental schemes and designations. It should be noted that MAGIC does not contain information on Local Wildlife Sites (LWSs) and as such, the COFNOD[10] was commissioned to identify all LWSs within 2km of the proposed development site.

The receptor points chosen represent the closest points to the proposed facility and are displayed in Table 6. Reference should be made to Figure 1 for a graphical representation of the ecological designations.

[8] https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit.
[9] Multi-Agency Geographic Information for the Countryside, www.magic.gov.uk.
[10] COFNOD - the North Wales Environmental Data Service - http://www.cofnod.org.uk

Table 6 Ecological Receptors

Ecological Receptor		NGR (m)	
		X	Y
ER1a	Dee Estuary (SPA, SAC, Ramsar, SSSI)	331398	369082
ER2a	River Dee and Bala Lake (SAC, SSSI)	332885	368163
ER2b	River Dee and Bala Lake (SAC, SSSI)	332329	368504
ER2c	River Dee and Bala Lake (SAC, SSSI)	333804	367551
ER3a	Deeside and Buckley Newt sites (SAC)	329970	368184
ER3b	Deeside and Buckley Newt sites (SAC)	329246	367334
ER3c	Deeside and Buckley Newt sites (SAC)	329192	365414
ER3d	Deeside and Buckley Newt sites (SAC)	329471	363982
ER4a	Ancient Woodland (37658)	332013	366766
ER5a	Engineer Park (LWS)	333846	367580
ER6a	The River Dee (LWS)	331900	368693
ER7a	Ancient Woodland (35862)	333359	369608

Critical loads have been designated within the UK based on the sensitivity and relevant features of the receiving habitat. A review of the Air Pollution Information System (APIS) website[11] was undertaken in order to identify the most suitable habitat description and associated critical load for the designations considered within the model. The critical loads for nitrogen deposition are presented in Table 7.

Table 7 Nitrogen Critical Load

Ecological Designation	Feature	APIS Habitat	Nitrogen Critical Load (kgN/ha/yr)	
			Min	Max
Dee Estuary (SPA, SAC, Ramsar, SSSI)	Coastal stable dune grasslands - acid type	Fixed coastal dunes with herbaceous vegetation	8	10
River Dee and Bala Lake (SAC, SSSI)	Floating water-plantain	River	N/A[a]	
Deeside and Buckley Newt sites (SAC)	Old sessile oak woods	Broadleaved, Mixed and Yew Woodland	10	15
Ancient Woodland (37658)	Broadleaved deciduous woodland	Broadleaved, mixed and yew woodland	10	20

[11] UK Air Pollution Information System, www.apis.ac.uk.

Ecological Designation	Feature	APIS Habitat	Nitrogen Critical Load (kgN/ha/yr)	
			Min	Max
Engineer Park (LWS)	Broadleaved deciduous woodland	Broadleaved, mixed and yew woodland	20	30
The River Dee (LWS)	Coastal and floodplain grazing marsh, Coastal saltmarsh, Mudflats	Low and medium altitude hay meadows	20	30
Ancient Woodland (35862)	Broadleaved deciduous woodland	Broadleaved, mixed and yew woodland	10	20

[a] Note: No relevant sensitivity or critical load

It should be noted that the information shown in Table 7 represents the most representative habitat within each designation for nitrogen deposition.

Table 8 shows the relevant critical loads for acid deposition.

Table 8 Acid Critical Load

Ecological Designation	Feature	APIS Habitat	Critical Load (ke/ha/yr)		
			CLmaxS	CLmaxN	CLminN
Dee Estuary (SPA, SAC, Ramsar, SSSI)	Coastal stable dune grasslands - acid type	Fixed coastal dunes with herbaceous vegetation	0.45	0.673	0.223
River Dee and Bala Lake (SAC, SSSI)	Floating water-plantain	River	N/A[a]		
Deeside and Buckley Newt sites (SAC)	Old sessile oak woods	Broadleaved, Mixed and Yew Woodland	1.448	1.722	0.142
Ancient Woodland (37658)	Broadleaved deciduous woodland	Broadleaved, mixed and yew woodland	10.811	11.168	0.357
Engineer Park (LWS)	Broadleaved deciduous woodland	Broadleaved, mixed and yew woodland	4	5.071	1.071
The River Dee (LWS)	Coastal and floodplain grazing marsh, Coastal saltmarsh, Mudflats	Low and medium altitude hay meadows	4	4	4
Ancient Woodland (35862)	Broadleaved deciduous woodland	Broadleaved, mixed and yew woodland	10.761	11.118	0.357

[a] Note: No relevant sensitivity or critical load

Background deposition rates at the ecological receptor location were downloaded from the APIS website[11] and are summarised in Table 9.

Table 9 Background Deposition Rates

Ecological Designation	Background Deposition Rate		
	Nitrogen (kgN/ha/yr)	Acid (keq/ha/yr)	
		Nitrogen r	Sulphur
Dee Estuary (SPA, SAC, Ramsar, SSSI)	20.58	1.47	0.33
River Dee and Bala Lake (SAC, SSSI)	24.78	1.77	0.44
Deeside and Buckley Newt sites (SAC)	33.6	2.4	0.33
Ancient Woodland (37658)	28.98	2.07	0.29
Engineer Park (LWS)	20.16	1.44	0.33
The River Dee (LWS)	20.16	1.44	0.33
Ancient Woodland (35862)	33.88	2.42	0.38

4 METHODOLOGY

Emissions associated with the proposed generators have the potential to cause increases in pollutant concentrations in the vicinity of the site. These have been quantified through dispersion modelling in accordance with the methodology outlined in the following Sections.

An industry standard atmospheric dispersion model, ADMS 5, was used to model releases of the identified substances. The dispersion modelling procedure was as follows:

- Information on stack dimensions and position were provided by Conrad Energy;
- Process conditions were provided by Conrad Energy;
- Emission rates were provided by the technology provider;
- Appropriate data to describe meteorological conditions in the vicinity of the site were obtained from Atmospheric Dispersion Modelling (ADM) Ltd;
- The above information was entered into the dispersion model;
- The dispersion model was run to determine pollutant concentrations in the vicinity of the site; and
- The study results were compared with the relevant assessment criteria.

4.1 Dispersion Model

Dispersion modelling was undertaken using ADMS 5 (v5.1.2.0), which is developed by Cambridge Environmental Research Consultants (CERC) Ltd. ADMS 5 is a short-range dispersion modelling software package that simulates a wide range of buoyant and passive releases to atmosphere. It is a new generation model utilising boundary layer height and Monin-Obukhov length to describe the atmospheric boundary layer and a skewed Gaussian concentration distribution to calculate dispersion under convective conditions.

The model utilises hourly meteorological data to define conditions for plume rise, transport and diffusion. It estimates the concentration for each source and receptor combination for each hour of input meteorology, and calculates user-selected long-term and short-term averages.

4.2 Modelling Scenarios

The scenarios considered in the modelling assessment are summarised in Table 10.

Table 10 Dispersion Modelling Scenarios

Parameter	Modelled As	
	Short Term	Long Term
NO_2	99.79%ile 1-hour mean	Annual mean
NOx	24 Hour Mean	Annual Mean
CO	Maximum daily running 8-hour mean	-

Some short-term air quality criteria are framed in terms of the number of occasions in a calendar year on which the concentration should not be exceeded. As such, the percentiles (%ile) shown in

Table 10 were selected to represent the relationship between the permitted number of exceedances of short-period concentrations and the number of periods within a calendar year.

4.3 Stack Information

Combustion products from the proposed gas generators will be emitted from dedicated stacks. Relevant details are presented in Table 11.

Table 11 Stack Information

Plant Reference	Stack Location NGR (m)	
	X	Y
Generator 1	332481.8	367952.8
Generator 2	332503.4	367938.1
Generator 3	332527.6	367921.7

Reference should be made to Figure 1 for a graphical representation of the stack locations.

4.4 Process Conditions

Process conditions were provided through correspondence with Conrad Energy and the technology provider and are identical for each of the generator units. A total of three units will be installed on site. Reference should be made to Table 12 for dispersion modelling inputs, for each generator.

Table 12 Process Conditions

Category G3516	Unit	Value
Stack diameter	m	0.50
Stack height	m	10.0
Flue gas efflux velocity (actual)	m/s	13.43
Volumetric flow rate (actual)	m^3/s	2.63
Temperature	˚C	410

It is important to note that the model was run at a stack height of 7.5m for the ecological receptors. This is considered a worst case assessment and as such, a stack height of 10m would result in lower predicted concentrations.

4.5 Emissions

The pollutant mass emission rates for use in the assessment were provided by Conrad Energy and are summarised in Table 13. This represents a conservative assessment approach with emissions from the generators assumed to be the maximum permitted.

Table 13 Emission Rates Per Generator Unit

Pollutant	Mass Emission Rate (g/s)
NO_x	0.66
CO	2.64

4.6 Time Varied Emissions

It is expected that the generators would be in use on average for 1000 hours per year (less than 3 hours per day). To consider a conservative assessment, emissions for the generator units were assumed to be constant, with the plant in operation 8-hours per day, 365-days per year. This is considered to be a conservative scenario based upon real world operations. As such, plant shut-down and periods of reduced workloads are fully reflected in the modelled emissions.

4.7 Assessment Extents

Ambient concentrations were predicted over the area NGR: 332220, 367650 to 332750, 368180. One Cartesian grid with a resolution of 10m and a height of 1.5m was included in the model. Results were subsequently used to produce contour plots within the Surfer software package.

4.8 Terrain Data

Ordnance Survey Landform Panorama terrain data was included for the site and surrounding area in order to take account of the specific flow field produced by variations in ground height throughout the assessment extents. This was pre-processed using the dedicated function within ADMS 5.

4.9 Building Effects

The dispersion of substances released from elevated sources can be influenced by the presence of buildings close to the emission point. Structures can interrupt the wind flows and cause significantly higher ground-level concentrations close to the source than would arise in the absence of the buildings.

Analysis of the site layout indicated that a number of structures in the vicinity of the STOR should be included within the model in order to take account of effects on pollutant dispersion. Building input geometries are shown in Table 14.

Table 14 Building Geometries

Building		NGR (m)		Height (m)	Length (m)	Width (m)	Angle (°)
		X	Y				
1	H B Car Sale / Pilmar	332444.9	368018.6	5.8	33.0	9.3	214.0
2	H B Car Sale / Pilmar	332463.3	368029.9	5.8	6.2	27.2	214.3
3	BDS Autmotive	332484.6	368005.0	7.3	46.1	36.3	214.0
4	Dpl Rescue & Recovery	332530.4	367993.8	5.8	9.5	34.4	214.0
5	Automotive Component Remanufacturing	332575.7	367930.4	5.8	24.0	18.1	214.0
6	Automotive Component Remanufacturing	332587.3	367947.7	5.8	9.6	11.8	214.0
7	Automotive Component Remanufacturing	332619.8	367929.9	5.8	8.4	34.4	214.3
8	Warehouse 1	332665.5	367895.3	11.8	16.8	40.2	214.1
9	Warehouse 2	332513.2	368064.8	15.2	45.1	94.4	214.0
10	Warehouse 3	332508.9	368114.8	15.2	32.9	31.3	214.0
11	Warehouse 4	332618.2	367994.2	15.2	44.1	127.3	214.0
12	Warehouse 5	332672.6	368003.8	15.2	32.6	108.2	214.0
13	Warehouse 6	332693.3	367935.5	8.3	46.7	13.5	214.0
14	Knauf Insulation	332509.3	367848.7	8.3	27.6	80.4	217.0
15	Knauf Insulation	332614.2	367773.7	8.3	33.9	177.3	217.0
16	Knauf Insulation	332385.0	367842.6	9.6	41.0	93.7	217.0
17	Knauf Insulation	332460.9	367801.9	9.6	14.0	76.1	217.1
18	3a Ffordd Pentre	332181.2	368010.1	8.4	27.0	49.0	215.1
19	3b Ffordd Pentre	332181.1	368031.3	8.4	7.7	24.6	215.0
20	2d-2e Ffordd Pentre	332164.7	367990.2	8.4	20.0	46.2	214.9
21	2a-2c Ffordd Pentre	332157.9	367957.2	8.4	42.4	19.7	215.0
22	Proposed Generator 1	332482.7	367950.5	3.5	4.2	17.4	214.3
23	Proposed Generator 2	332504.1	367935.9	3.5	4.2	17.4	214.0
24	Proposed Generator 3	332528.4	367919.4	3.5	4.2	17.4	214.0

Reference should be made to Figure 1 for a graphical representation of the modelled building layout

and the ADMS 5 model input.

4.10 Meteorological Data

Meteorological data used in this assessment was taken from Hawarden meteorological station over the period 1st January 2012 to 31st December 2016 (inclusive). Hawarden meteorological station is located at approximate NGR: 334586, 364102, which is approximately 4km south-east of the proposed development site.

All meteorological data used in the assessment was provided by ADM Ltd, which is an established distributor of meteorological data within the UK. Reference should be made to Figure 2 for wind roses of utilised meteorological data.

4.11 Roughness Length

A roughness length (z_0) of 0.5m was used in the dispersion modelling study. This value of z_0 is considered appropriate for the morphology of the assessment area and is suggested within ADMS 5 as being suitable for 'parkland, open surburbia'.

A z_0 of 0.3m was utilised to represent the morphology of the meteorological station location and is suggested as being suitable for 'agricultural areas (max)'.

4.12 Monin-Obukhov Length

The Monin-Obukhov length provides a measure of the stability of the atmosphere. A minimum Monin-Obukhov length of 30m was used in the dispersion modelling study. This value is considered appropriate for the nature of the assessment area and is suggested within ADMS 5 as being suitable for 'mixed urban/industrial'.

A Monin-Obukhov length of 10m was utilised to represent the nature of meteorological station location and is suggested within ADMS 5 as being suitable for 'small towns <50,000'.

4.13 Deposition Rates

Deposition rates were calculated using the conversion factors provided within EA document 'Technical Guidance on Detailed Modelling approach for an Appropriate Assessment for Emissions to Air AQTAG 06''. Predicted pollutant concentrations were multiplied by the relevant deposition velocity and conversion factor to calculate the speciated dry deposition flux. The conversion factors used are presented within Table 15.

Table 15 Conversion Factors to Determine Dry Deposition Flux

Pollutant	Grassland Deposition Velocity (m/s)	Forest Deposition Velocity (m/s)	Conversion Factor (µg/m^2/s to kg/ha/yr of pollutant species)
NO_2	0.0015	0.0030	96.0

Acid deposition occurs as a result of NO_2. Predicted ground level pollutant concentrations were

converted to kilo-equivalent ion depositions (keq/ha/yr) for comparison with the critical load for acid deposition at each of the identified ecological receptors.

The conversion to units of equivalents, a measure of the potential acidifying effect of a species, was undertaken by multiplying the dry deposition flux by the standard conversion factors shown in Table 16.

Table 16 Conversion Factors to Units of Equivalents

Species	Conversion Factor from kg/ha/yr to keq/ha/yr
Nitrogen	0.07143

4.14 Assessment Criteria

Predicted ground level pollutant concentrations and deposition rates were compared with the relevant AQOs, critical levels and critical loads identified within Section 3.4.2. These criteria are collectively referred to as Environmental Quality Standards (EQSs).

4.15 Baseline Concentrations

A review of existing data in the vicinity of the site was undertaken in Section 3 of this report in order to define baseline pollutant levels. The background concentrations provided by DEFRA, as summarised in Table 4, were used in the assessment to represent existing pollutant levels in the vicinity of the site.

It is not possible to add short-term peak baseline and process concentrations. This is because the conditions which give rise to peak ground-level concentrations of substances emitted from an elevated source at a particular location and time are likely to be different to the conditions which give rise to peak concentrations due to emissions from other sources. This point is addressed in EA guidance[8], which advises that an estimate of the maximum combined pollutant concentration can be obtained by adding the maximum predicted short-term concentration due to emissions from the source to twice the annual mean baseline concentration. This approach was adopted throughout the assessment.

4.16 NO_x to NO_2 Conversion

Emissions of NO_x from combustion processes are predominantly in the form of NO. Excess oxygen in the combustion gases and further atmospheric reactions cause the oxidation of NO to NO_2. Recent comparisons of ambient NO and NO_2 concentrations in the vicinity of point sources has indicated that it is unlikely that more than 30% of the emitted NO_x is present at ground level as NO_2.

Ground level NO_x concentrations were predicted through dispersion modelling. NO_2 concentrations reported in the results section assume 100% conversion from NO_x to NO_2 for annual means and 50% conversion for 1-hour concentrations, based upon Environment Agency guidance[12].

[12] Conversion Ratios for NO_x and NO_2, Environment Agency, undated.

4.17 Significance of Predicted Impacts

Predicted pollutant concentrations are summarised in the following formats:

- Process contribution (PC) - Predicted pollutant concentration as a result of emissions from the facility only; and
- Predicted environmental concentration (PEC) - Total predicted pollutant concentration as a result of emissions from the facility and existing baseline levels.

The significance of predicted impact has been assessed in accordance with EA criteria and through consideration of likely effects as a result of the proposals. EA guidance[8] states that process contributions can be considered insignificant if:

- The short-term PC is less than 20% of the short-term environmental standards minus twice the long-term background concentration;
- The long-term PEC is less than 70% of the long-term environmental standards

If your emissions that affect SPAs, SACs, RAMSAR sites or SSSIs meet both of the following criteria, can be considered insignificant:

- the short-term PC is less than 10% of the short-term environmental standard for protected conservation areas;
- the long-term PC is less than 1% of the long-term environmental standard for protected conservation areas

Should these criteria be exceeded then the PEC should be checked against the standard for protected conservation areas. PEC is not required for short-term targets. Should the short-term PC exceed the screening criteria, a detailed modelling is required.

If the predicted long-term PC is greater than 1% and the PEC is less than 70% of the long-term environmental standard, the emissions can be considered insignificant. Should the predicted PEC be greater than 70% of the long-term environmental standard, a detailed dispersion modelling is required.

When considering impacts at local nature sites and the emissions meet both of the following criteria, impacts can be considered insignificant and there is no further assessment required:

- The short-term PC is less than 100% of the short-term environmental standard; and
- The long-term PC is less than 100% of the long-term environmental standard.

Should the PC exceed the screening criteria, detailed dispersion modelling is required.

4.18 Modelling Uncertainty

Uncertainty in dispersion modelling predictions can be associated with a variety of factors, including:

- Model uncertainty - due to model limitations;
- Data uncertainty - due to errors in input data, including emission estimates, operational

procedures, land use characteristics and meteorology; and
- Variability - randomness of measurements used.

Potential uncertainties in model results were minimised as far as practicable and worst-case inputs used in order to provide a robust assessment. This included the following:

- Choice of model - ADMS 5 is a commonly used atmospheric dispersion model and results have been verified through a number of studies to ensure predictions are as accurate as possible;
- Meteorological data - Modelling was undertaken using four annual meteorological data sets from the closest observation site to the site to take account of local conditions;
- Plant operating conditions - Plant operating conditions were provided by Conrad Energy. As such, these are considered to be representative of operating conditions;
- Emission rates - Emission rates were obtained for the proposed generators were provided by Conrad Energy. As such, these are considered to be representative of likely emissions;
- Background concentrations - Background concentrations were obtained from the DEFRA mapping study;
- Receptor locations - A Cartesian Grid was included in the model in order to calculate maximum predicted concentrations throughout the assessment extents; and
- Variability - All model inputs are as accurate as possible and worst-case conditions were considered as necessary in order to ensure a robust assessment of potential pollutant concentrations.

Results were considered in the context of the relevant Environmental Quality Standard (EQS). It is considered that the use of the stated measures to reduce uncertainty and the use of worst-case assumptions when necessary has resulted in model accuracy of an acceptable level.

4.19 Dispersion Modelling Report Requirements

Table 17 provides the checklist of dispersion modelling report requirements.

Table 17 Dispersion Modelling Report Requirements

Item	Location within Report
Location map	Figure 1
List of pollutants modelled and relevant air quality guidelines	Table 1, and Table 3
Details of modelled scenarios	Table 10
Details of relevant ambient concentrations used	Table 4
Model description and justification	Section 4.1
Special model treatments used	Section 4
Table of emission parameters used	Table 12 and Table 13
Details of modelled domain and receptors	Section 3.4, Section 4, Table 5 and Table 6
Details of meteorological data used (including origin) and justification	Section 4.10

Item	Location within Report
Details of terrain treatment	Section 4.8
Details of building treatment	Section 4.9 and Table 14

5 RESULTS

Dispersion modelling was undertaken with the inputs described in Section 4. Reference should be made to Figure 3 to Figure 6 for graphical representations of predicted pollutant concentrations throughout the assessment extents.

5.1 Maximum Pollutant Concentrations

The maximum predicted pollutant concentrations at the most affected Human Sensitive Receptor location within the modelling extents for any meteorological data set are summarised in Table 18 for all modelled pollutants.

Table 18 Maximum Predicted Pollutant Concentrations

Pollutant	Averaging Period	EQS (µg/m^3)	PC		PEC	
			Concentration (µg/m^3)	Proportion of EQS (%)	Concentration (µg/m^3)	Proportion of EQS (%)
NO_2	Annual	40	11.30	28.24	24.21	60.53
NO_2	1-Hour	200	89.76	44.88	115.59	39.78
CO	8-Hour Rolling	10,000	723.47	7.24	1315.47	13.15

As indicated in Table 18, there are no predicted exceedances of any EQS at any locations throughout the assessment extents for any pollutant or averaging period of interest. It should be noted that the data presented in the Figures are predictions from the meteorological data set which resulted in the maximum pollutant concentration

5.2 Sensitive Human Receptors

5.2.1 Nitrogen Dioxide

Reference should be made to Figure 3 and Figure 4 for graphical representations of predicted concentrations throughout the assessment extents. As indicated in the figures, no exceedances of the annual or 1-hour mean AQOs for NO_2 were predicted at sensitive locations within the assessment extents.

Predicted annual and 1-hour mean NO_2 concentrations at sensitive human receptor locations are summarised in Table 19 and Table 20 respectively.

Table 19 Predicted Annual Mean NO_2 Concentrations

Receptor		Predicted Annual Mean NO_2 Concentration ($\mu g/m^3$)		Proportion of EQS (%)	
		PC	PEC	PC	PEC
R1	H B Car Sales	10.08	22.99	25.19	57.48
R2	BDS Autmotive	11.30	24.21	28.24	60.53
R3	Scottish Power, Queensferry Depot	7.27	20.18	18.17	50.46
R4	Automotive Component Remanufacturing Ltd	6.15	19.06	15.37	47.66
R5	Automotive Component Remanufacturing Ltd	6.81	19.72	17.02	49.31
R6	Dpl Rescue & Recovery	6.31	19.23	15.78	48.07
R7	Wizz Kidz (3a Ffordd Pentre)	1.04	13.96	2.61	34.90
R8	7 Chemistry Lane	1.05	13.97	2.63	34.91
R9	The Old Mission Site, Chester Road East	0.64	13.56	1.61	33.90
R10	2 Chester Road East	0.46	13.38	1.15	33.44
R11	1 Saltney Terrace, Chester Road	0.59	13.51	1.49	33.77
R12	58 Queen Street	0.43	13.34	1.07	33.36

Note: [a]Predicted concentrations were assessed against the relevant EQSs:
Annual mean AQO of 40$\mu g/m^3$.

Table 20 Predicted 99.79th Percentile of 1 Hour Mean NO_2 Concentrations

Receptor		Predicted 1 Hour Mean NO_2 Concentration ($\mu g/m^3$)		Proportion of EQS (%)	
		PC	PEC	PC	PEC
R1	H B Car Sales	85.68	111.51	42.84	55.76
R2	BDS Autmotive	89.76	115.59	44.88	57.79
R3	Scottish Power, Queensferry Depot	60.24	86.07	30.12	43.04
R4	Automotive Component Remanufacturing Ltd	58.77	84.60	29.39	42.30
R5	Automotive Component Remanufacturing Ltd	69.26	95.09	34.63	47.54
R6	Dpl Rescue & Recovery	50.27	76.10	25.13	38.05
R7	Wizz Kidz (3a Ffordd Pentre)	21.23	47.06	10.61	23.53

Receptor		Predicted 1 Hour Mean NO_2 Concentration ($\mu g/m^3$)		Proportion of EQS (%)	
		PC	PEC	PC	PEC
R8	7 Chemistry Lane	30.71	56.54	15.36	28.27
R9	The Old Mission Site, Chester Road East	19.94	45.77	9.97	22.88
R10	2 Chester Road East	15.24	41.07	7.62	20.54
R11	1 Saltney Terrace, Chester Road	19.39	45.22	9.70	22.61
R12	58 Queen Street	9.28	35.11	4.64	17.56

Note: [b]Predicted concentrations were assessed against the relevant EQSs: 99.79%ile 1-hour mean AQO of 200µg/m^3.

Predicted 1 hour mean concentration were above the EA screening criteria[8] for insignificance. However, as indicated in Table 19 and Table 20 both annual and 1 hour NO_2 concentrations were well below the relevant EQSs at all sensitive receptor locations for all meteorological datasets. Impacts are therefore considered as **not significant** at all sensitive receptors considered.

5.2.2 Carbon Monoxide

Reference should be made to Figure 5 for a graphical representation of predicted maximum daily running 8-hour mean CO concentrations throughout the assessment extents.

Predicted CO concentrations at sensitive receptor locations are summarised in Table 21.

Table 21 Predicted 8-hour Rolling Mean CO Concentrations

Receptor		Predicted Maximum Daily Running 8-hour Mean CO Concentration (mg/m^3)		Proportion of EQS (%)	
		PC	PEC	PC	PEC
R1	H B Car Sales	592.95	1184.95	5.93	11.85
R2	BDS Automotive	723.47	1315.47	7.23	13.15
R3	Scottish Power, Queensferry Depot	439.57	1031.57	4.40	10.32
R4	Automotive Component Remanufacturing Ltd	438.09	1030.09	4.38	10.30
R5	Automotive Component Remanufacturing Ltd	510.76	1102.76	5.11	11.03
R6	Dpl Rescue & Recovery	360.31	952.31	3.60	9.52

Receptor		Predicted Maximum Daily Running 8-hour Mean CO Concentration (mg/m^3)		Proportion of EQS (%)	
		PC	PEC	PC	PEC
R7	Wizz Kidz (3a Ffordd Pentre)	176.76	768.76	1.77	7.69
R8	7 Chemistry Lane	232.77	824.77	2.33	8.25
R9	The Old Mission Site, Chester Road East	146.65	738.65	1.47	7.39
R10	2 Chester Road East	116.99	708.99	1.17	7.09
R11	1 Saltney Terrace, Chester Road	146.02	738.02	1.46	7.38
R12	58 Queen Street	98.16	690.16	0.98	6.90

Note: [a]Predicted concentrations were assessed against the relevant EQSs:
8-Hour rolling mean AQO of 10,000µg/m^3

As indicated in Table 21, predicted CO concentrations are below the relevant EQS at all sensitive receptor locations for all meteorological datasets. Impacts were also considered **insignificant** at all sensitive receptors considered, in accordance with the EA screening criteria[8].

5.3 Sensitive Ecological Receptors

Predicted concentrations and deposition rates of each pollutant at the ecological receptor locations identified in Table 6 are summarised in the following Sections.

5.3.1 Oxides of Nitrogen

Predicted annual mean and 24-hour NO_x concentrations for sensitive ecological receptors are summarised in Table 22 and Table 23. It should be noted that the results presented in Table 22 and Table 23 represent the maximum concentrations predicted across all meteorological datasets.

Table 22 Predicted Annual Mean NO_x Concentrations

Receptor	Predicted Annual Mean NO_x Concentration (µg/m^3)		Proportion of EQS (%)	
	PC	PEC	PC	PEC
ER1a	0.166	18.15	0.553	60.49
ER2a	1.057	19.04	3.524	63.46
ER2b	0.823	18.80	2.744	62.68
ER2c	0.134	18.11	0.446	60.38
ER3a	0.018	18.00	0.061	59.99

Receptor	Predicted Annual Mean NO_x Concentration ($\mu g/m^3$)		Proportion of EQS (%)	
	PC	PEC	PC	PEC
ER3b	0.009	17.99	0.031	59.96
ER3c	0.010	17.99	0.034	59.97
ER3d	0.007	17.99	0.022	59.96
ER4a	0.044	N/A	0.148	N/A
ER5a	0.123	N/A	0.410	N/A
ER6a	0.432	N/A	1.439	N/A
ER7a	0.056	N/A	0.186	N/A

As indicated in Table 22, the PC proportion of the EQS is below the EA threshold at all ecological receptor locations with the exception of ER2a and ER2b. Where the PC proportion exceeds the criteria, the PEC proportion is below the 70% insignificance threshold. As such, impacts on annual mean NO_x concentrations are considered to be **insignificant** in accordance with the EA screening criteria[8]. It should be noted that the assessment assumed that the facility would be operational for 8-hours per day, for 365 days per year. As such, predicted concentrations are likely to be a robust representation of actual impacts.

Table 23 Predicted 24-hour Mean NO_x Concentrations

Receptor	Predicted 24-hour Mean NO_x Concentration ($\mu g/m^3$)		Proportion of EQS (%)	
	PC	PEC	PC	PEC
ER1a	2.193	38.15	2.923	50.87
ER2a	7.607	43.57	10.143	58.09
ER2b	10.612	46.57	14.149	62.10
ER2c	2.378	38.34	3.170	51.12
ER3a	1.024	36.98	1.365	49.31
ER3b	0.311	36.27	0.414	48.36
ER3c	0.404	36.36	0.539	48.49
ER3d	0.315	36.28	0.420	48.37
ER4a	1.565	N/A	2.086	N/A
ER5a	2.213	N/A	2.951	N/A
ER6a	4.331	N/A	5.775	N/A

Receptor	Predicted 24-hour Mean NO_x Concentration (µg/m^3)		Proportion of EQS (%)	
	PC	PEC	PC	PEC
ER7a	0.954	N/A	1.272	N/A

As indicated in Table 23, predicted 24-hour mean NO_x concentrations were below the relevant EQS threshold at all ecological receptor locations with the exception of ER2a and ER2b. At these locations the EA recommends detailed modelling to assess against the EQS. Detailed modelling has shown that the PEC is well below the EQS and therefore the impacts can be considered as not significant. As such, impacts on 24-hour mean NO_x concentrations are considered to be **not significant** in accordance with the EA criteria[8]. It should be noted that the assessment for 24 hour mean assumed that the facility would be operational for 8 hours per day, for 365 days per year and with a lower stack height than that proposed. As such, predicted concentrations are likely to be a robust representation of actual impacts.

5.3.2 Nitrogen Deposition

Predicted annual mean nitrogen deposition rates are summarised in Table 24.

Table 24 Predicted Annual Mean Nitrogen Deposition Rates

Receptor	Predicted Annual Mean Nitrogen Deposition Rate (kgN/ha/yr)		Proportion of EQS (%)			
	PC	PEC	Low EQS		High EQS	
			PC	PEC	PC	PEC
ER1a	0.024	20.60	0.30	257.55	0.24	206.04
ER2a	0.152	24.93	N/A	N/A	N/A	N/A
ER2b	0.119	24.90	N/A	N/A	N/A	N/A
ER2c	0.019	24.80	N/A	N/A	N/A	N/A
ER3a	0.003	33.60	0.03	336.03	0.02	224.02
ER3b	0.001	33.60	0.01	336.01	0.01	224.01
ER3c	0.001	33.60	0.01	336.01	0.01	224.01
ER3d	0.001	33.60	0.01	224.01	0.01	224.01
ER4a	0.013	28.99	0.13	289.93	0.06	144.96
ER5a	0.018	20.18	0.09	201.78	0.06	100.89
ER6a	0.062	20.22	0.31	202.22	0.21	101.11
ER7a	0.016	33.90	0.16	338.96	0.08	169.48

As indicated in Table 24, the PC proportion of the EQS was below the relevant threshold at all ecological receptor locations. As such, impacts on annual mean nitrogen deposition rates are considered to be **insignificant** in accordance with the EA screening criteria[8].

Reference should be made to Table 7 for details of the site-specific Low and High EQSs.

5.3.3 Acid Deposition

Predicted acid deposition rates are summarised in Table 25. It should be noted all results relate to the maximum predicted by any meteorological dataset. It should be noted that the acid deposition rate for sulphur is the background deposition rate only, as sulphur is not emitted by the proposed installation.

Table 25 Predicted Annual Mean Acid Deposition Rates

Receptor	Predicted Annual Mean Acid Deposition Rate (keq/ha/yr)			Proportion of EQS (%)	
	S	N	HCl	PC	PEC
ER1a	0.00	0.0017	0.00	0.25	267.71
ER2a	0.00	0.0109	0.00	N/A	N/A
ER2b	0.00	0.0085	0.00	N/A	N/A
ER2c	0.00	0.0014	0.00	N/A	N/A
ER3a	0.00	0.0002	0.00	0.01	158.55
ER3b	0.00	0.0001	0.00	0.01	158.54
ER3c	0.00	0.0001	0.00	0.01	158.54
ER3d	0.00	0.0001	0.00	0.00	158.54
ER4a	0.00	0.0009	0.00	0.01	21.14
ER5a	0.00	0.0013	0.00	0.02	34.93
ER6a	0.00	0.0044	0.00	0.11	44.36
ER7a	0.00	0.0011	0.00	0.01	25.19

Note: The PC shown is the total PC of both Sulphur and Nitrogen.

As indicated in Table 25, the PC proportion of the predicted annual mean acid deposition rates were below the relevant EQS threshold at all ecological receptor locations. As such, impacts on annual mean acid deposition rates are considered to be **insignificant** in accordance with the EA screening criteria[8].

6 CONCLUSION

REC Ltd was commissioned by Conrad Energy to undertake a Dispersion Modelling Assessment in support of the proposed STOR Site for gas electricity generators at Factory Road, Deeside.

Atmospheric emissions from the selected plants have the potential to cause increases in ground level pollutant concentrations. As such, a Dispersion Modelling Assessment was required to quantify impacts in the vicinity of the site.

Dispersion modelling of a number of pollutants was undertaken using ADMS 5 (v5.2). Impacts at sensitive receptors were quantified and the results compared with the relevant EQSs.

Predicted concentrations of all pollutants considered for the protection of human health were below the relevant EQSs at all sensitive locations representative of human exposure outside of the site boundary for all meteorological datasets modelled. Impacts on baseline concentrations at all sensitive receptor locations are therefore considered as **not significant**. Nitrogen and acid gas deposition rates were also predicted at the relevant ecological sites. Impacts upon sensitive ecological designations as a result of emissions from the installation were deemed **not significant** at all designations.

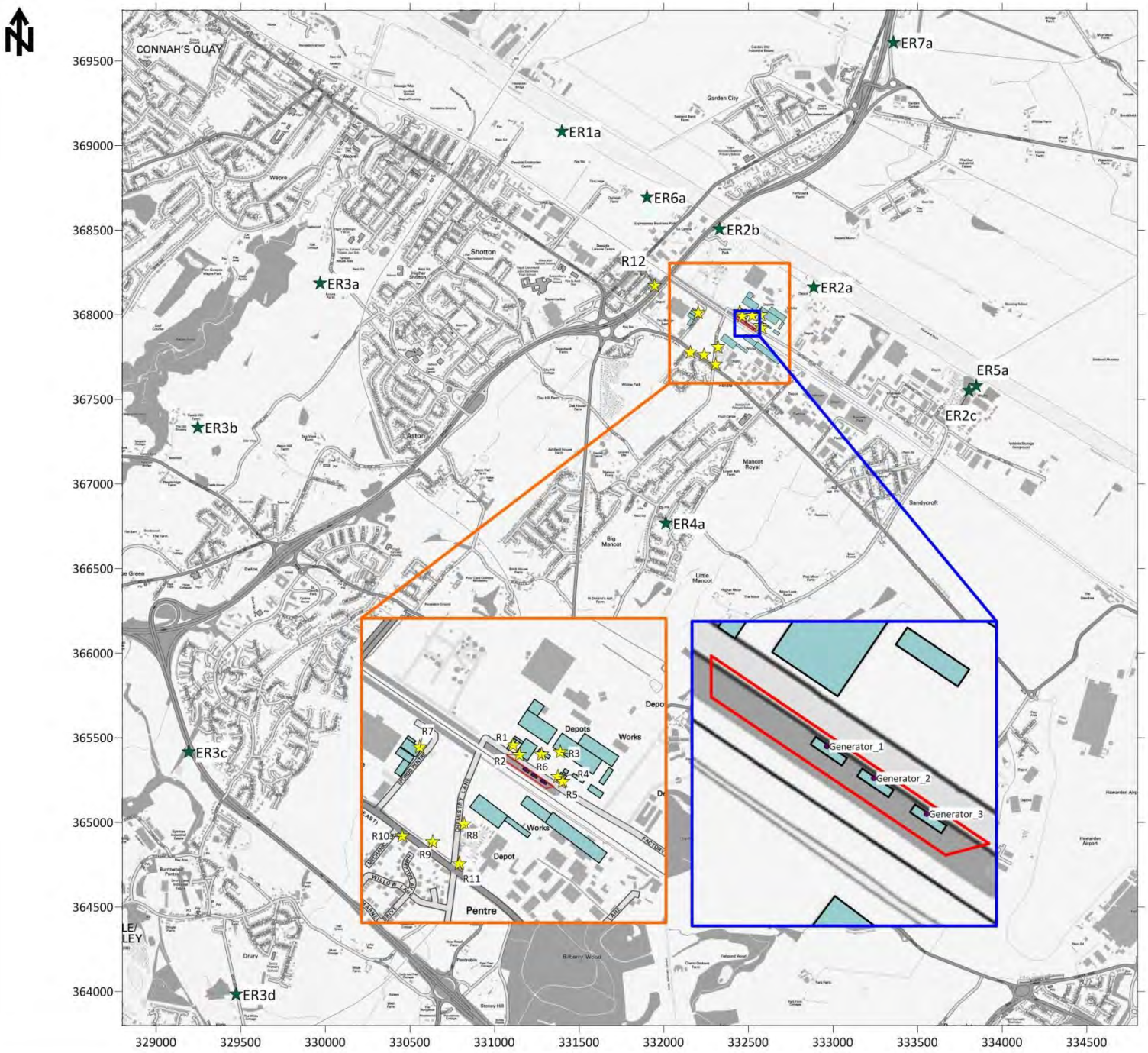
Impacts were predicted based on a conservative assessment scenario of actual operational hours of the generators. As such, predicted results are consider to be a robust estimate of actual impacts.

Based on the assessment results, air quality issues are not considered a constraint to planning consent for the development.

7 ABBREVIATIONS

%ile	Percentile
ADM	Atmospheric Dispersion Modelling
APIS	Air Pollution Information System
AQLV	Air Quality Limit Value
AQMA	Air Quality Management Area
AQO	Air Quality Objective
AQS	Air Quality Strategy
CERC	Cambridge Environmental Research Consultants
CO	Carbon monoxide
DEFRA	Department for Environment, Food and Rural Affairs
EQS	Environmental Quality Standard
EU	European Union
FCC	Flintshire County Council
LA	Local Authority
LAQM	Local Air Quality Management
LNR	Local Nature Reserve
LWS	Local Wildlife Site
MAGIC	Multi-Agency Geographic Information for the Countryside
NGR	National Grid Reference
NO	Nitric oxide
NO_2	Nitrogen dioxide
NO_x	Oxides of nitrogen
NPPF	National Planning Policy Framework
NPPG	National Planning Practice Guidance
$PM_{2.5}$	Particulate matter with an aerodynamic diameter of less than 2.5µm
PM_{10}	Particulate matter with an aerodynamic diameter of less than 10µm
PC	Process Contribution
PEC	Predicted Environmental Concentration
REC	Resource and Environmental Consultants
SAC	Special Areas of Conservation
z_0	Roughness Length

APPENDIX I FIGURES



Legend

- Site Boundary
- Modelled Buildings
- Sensitve Human Rceptor Locations
- Sensitive Ecological Receptor Locations
- Modelled Point Sources

Title

Figure 1

Site Location and ADMS-5 Inputs

Project

Air Quality Assessment
Factory Road, Deeside

Project Number

AQ104453

Client

Conrad Energy

REC
Resource and Environmental Consultants Ltd
Osprey House, Broadway, Manchester M50 2UE
Tel – 0161 868 1300 Fax – 0161 868 1301
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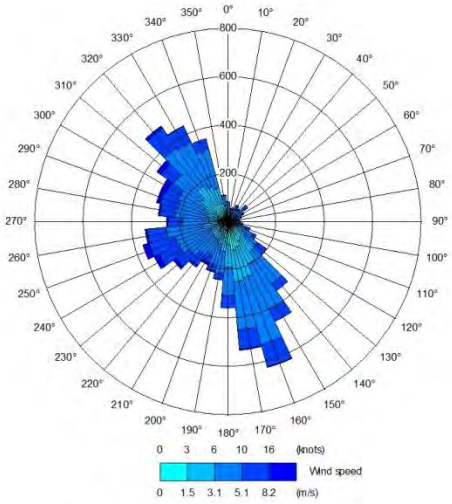
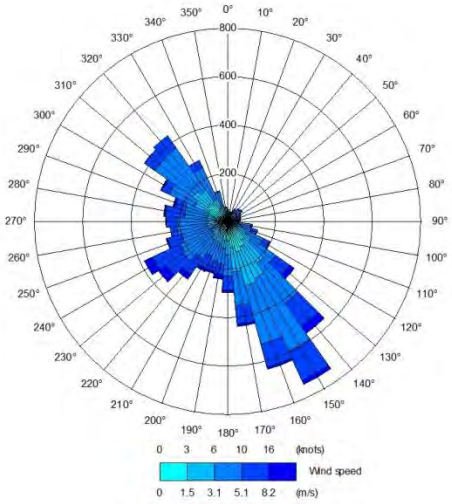
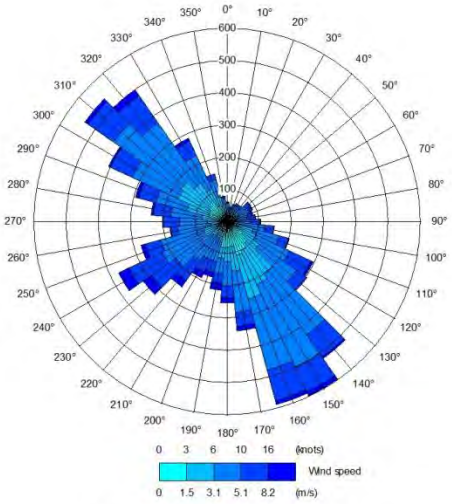


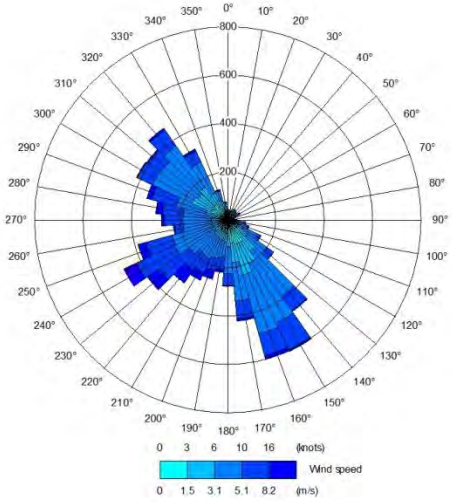
Wind Rose of 2012 Meteorological Data



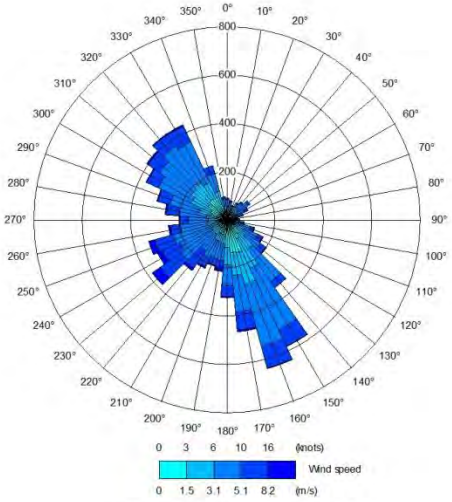
Wind Rose of 2014 Meteorological Data



Wind Rose of 2013 Meteorological Data



Wind Rose of 2015 Meteorological Data



Wind Rose of 2016 Meteorological Data

Title

Figure 2

2012 to 2016 Wind Roses
Hawarden Meteorological Data

Project

Air Quality Assessment
Factory Road, Deeside

Project Number

AQ104453

Client

Conrad Energy

REC

Resource and Environmental Consultants Ltd
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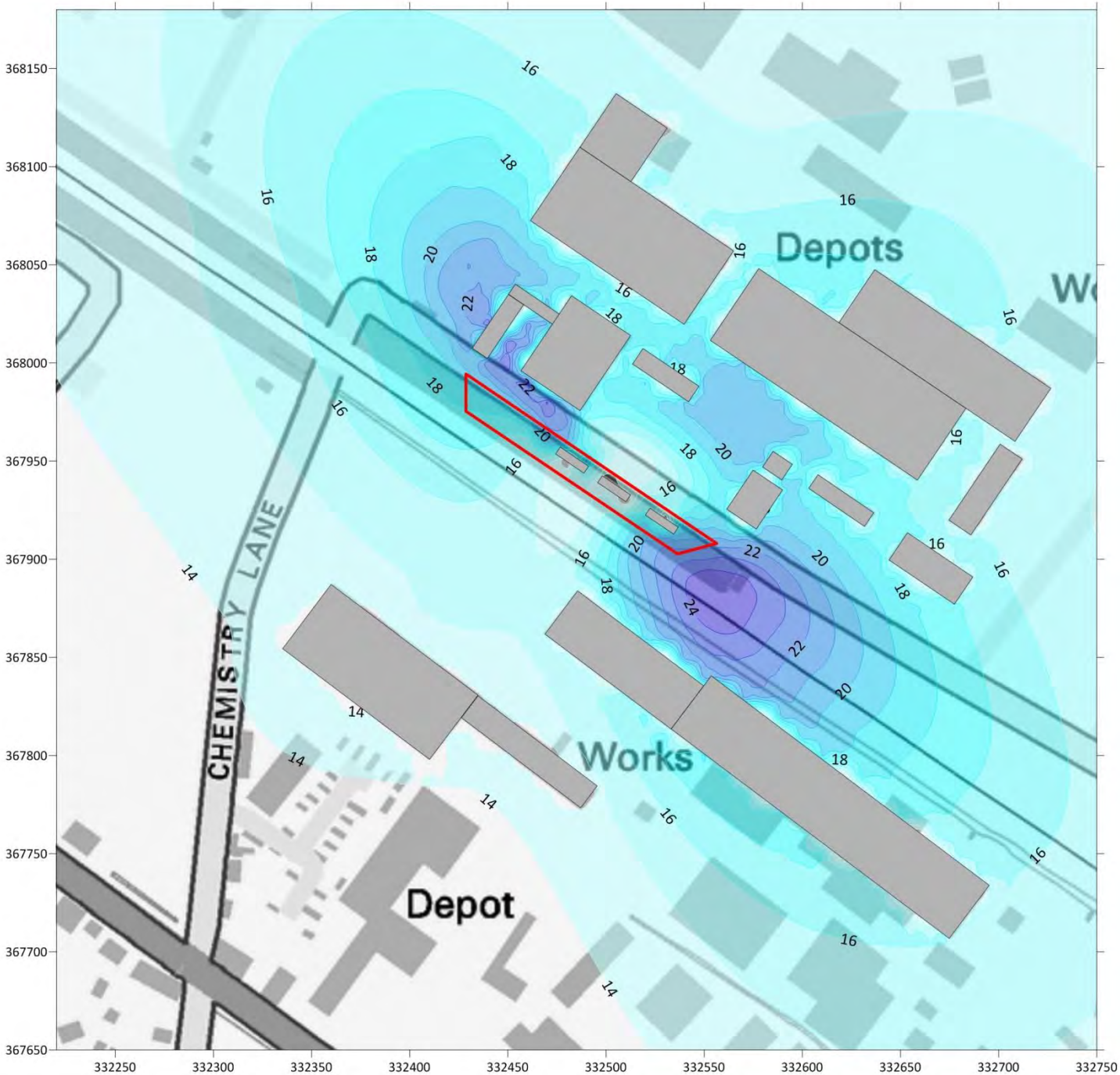

Legend

Site Boundary

Modelled Buildings

Predicted Maximum Average Annual Mean NO_2 Concentration ($\mu g/m^3$)

24
23
22
21
20
19
18
17
16
15
14

Title

Figure 3

Predicted Maximum Average Annual Mean NO_2 Concentrations ($\mu g/m^3$)

Project

Air Quality Assessment
Factory Road, Deeside

Project Number

AQ104453

Client

Conrad Energy

REC
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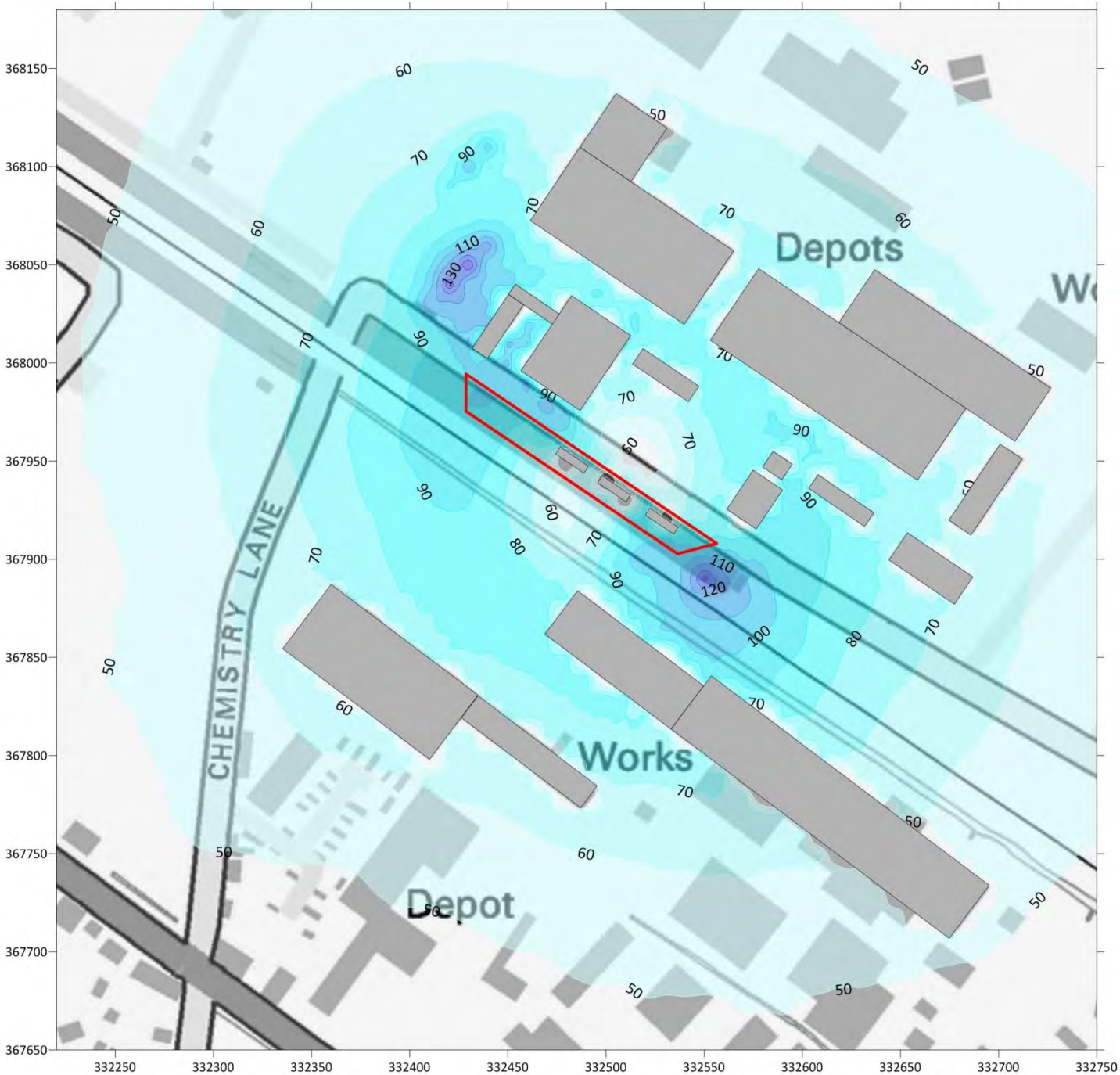

Legend

Site Boundary

Modelled Buildings

Predicted Maximum Average 1-Hour Mean NO_2 Concentration ($\mu g/m^3$)

150
140
130
120
110
100
90
80
70
60
50

Title

Figure 4

Predicted Maximum Average 1-Hour Mean NO_2 Concentrations ($\mu g/m^3$)

Project

Air Quality Assessment
Factory Road, Deeside

Project Number

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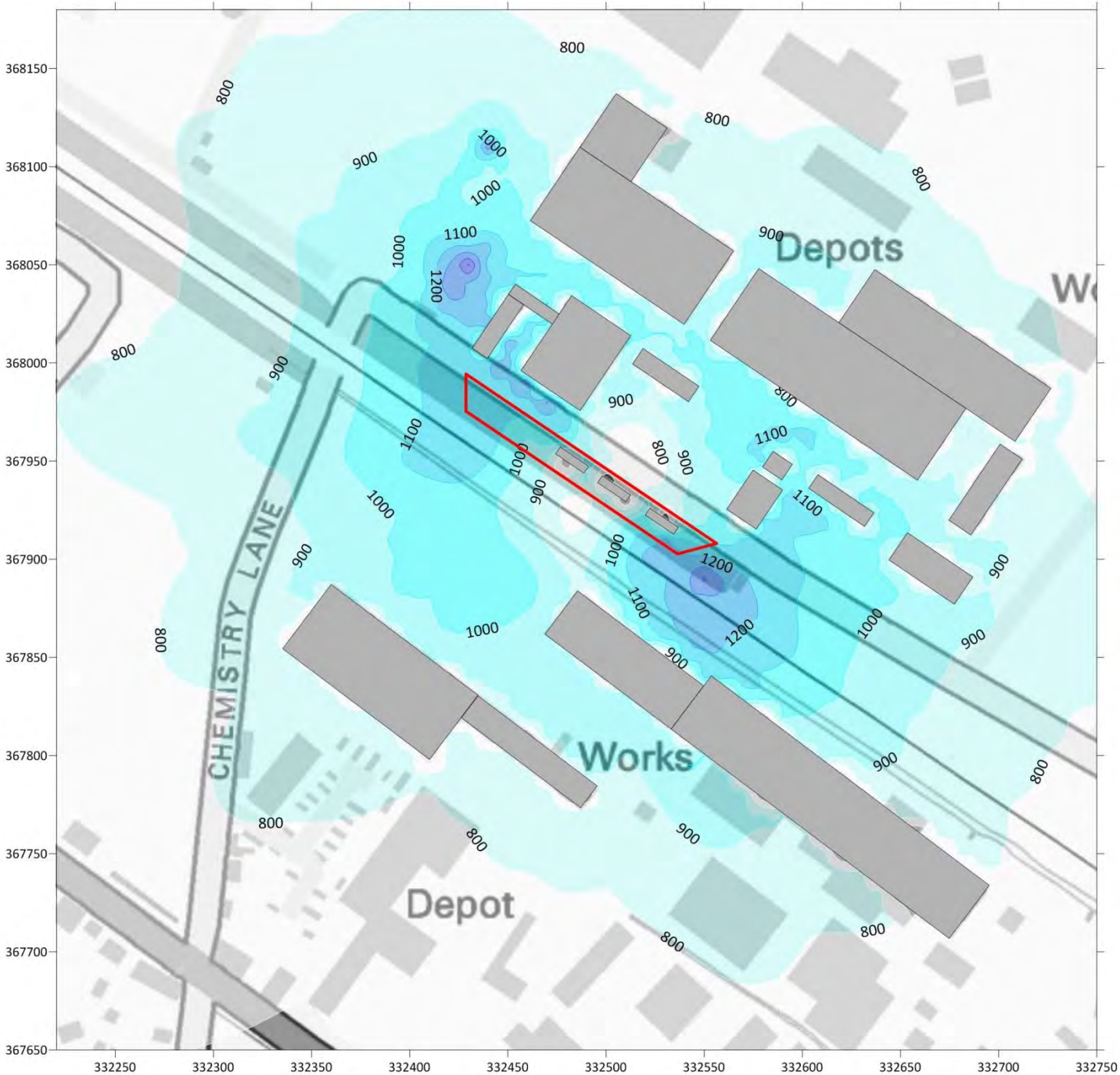

Legend

Site Boundary

Modelled Buildings

1500
1400
1300
1200
1100
1000
900
800
700

Predicted Maximum Average 8-Hour Rolling Mean CO Concentration (µg/m³)

Title

Figure 5

Predicted Maximum Average 8-Hour Rolling Mean CO Concentrations (µg/m³)

Project

Air Quality Assessment
Factory Road, Deeside

Project Number

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APPENDIX II ASSESSOR'S CURRICULUM VITAE

CONAL KEARNEY

Principal Air Quality Consultant

BEng(Hons), MSc, MIAQM, MIEnvSc

KEY EXPERIENCE:

Conal is a Principal Consultant with specialist experience in the air quality and odour sector. His key capabilities include:

- Advanced atmospheric air dispersion modelling of road vehicle and industrial emissions using ADMS-ROADS and AIRVIRO.
- Preparation of factual and interpretative Air Quality Assessment reports and Air Quality Environmental Statement chapters in the vicinity of proposed schemes and developments in accordance with DEFRA, Environment Agency and Environmental Protection UK (EPUK) and Institute of Air Quality Management (IAQM) methodologies.
- Management and delivery of project work on key, land development and urban regeneration projects.
- Assessment of road vehicle exhaust emissions using the Design Manual for Roads and Bridges (DMRB) calculation spreadsheet.
- Assessment of dust impacts from construction sites to the Institute of Air Quality Management (IAQM) methodology.
- Dust and Odour impact assessments from minerals and waste sites
- Representing clients at public enquiries and planning hearings.

QUALIFICATIONS:

- Bachelor of Engineering
- Master of Science
- Member of Institute of Air Quality Management
- Member of the Institute of Environmental Science (IES)

SELECT PROJECTS SUMMARY:

Industrial Developments

Buck Park, Denholme - AQA and dust assessment for proposed mineral extraction and site restoration project.

Messingham Quarry, North Lincolnshire - AQA and dust impacts for proposed new sand extraction site.

Arden Quarry, Derbyshire - AQA for proposed mineral extraction and site restoration

Calder Brick Works, Yorkshire - AQA for proposed site restoration plan

Coopers Moss, St Helens AQA and dust assessment for materials import and site restoration.

Clayton Hall Landfill, Chorley - AQA and odour assessment for proposed landfill extension and mineral extraction.

Highways Developments

Alderley Edge Bypass, Cheshire - AQA for major new road scheme.

South Heywood – EIA for new link road and mixed use joint development

Residential Developments

Beck's Mill, Silsden – AQA and emissions calculation for proposed residential development

Bredbury Curve, Stockport - AQA assessment for proposed residential development in AQMA.

Hollin Lane, Middlewich – AQA for large scale residential development.

Friars School, Southwark, London. School development for mixed use education and residential building in AQMA.

Abbotsford House, Bearsden, Scotland – AQA and dust assessment for residential development

Kelvedon Street, Newport, South Wale – AQA for new housing development

Westcraig, Edinburgh - EIA for residential development

Public Sector

Technical advisor on Manchester Airport Consultative Committee - advise members on environmental technical matters in relation to the airport's operations.

Cheshire County Council - compile AQ chapters for Local Transport Plan

Cheshire East Council - specialist AQ advice on highways, minerals and waste projects

Local Air Quality Management

Broughton Gyratory, Chester - dispersion model for City Centre detailed assessment report

Congleton town centre - dispersion modelling assessment for detailed and further assessment reports.

Disley - dispersion modelling assessment for detailed and further assessments

Holmes Chapel - dispersion modelling assessment for detailed and further assessment reports for road and rail sources.

Crewe - town centre dispersion modelling for detailed and further assessment reports.

Commercial Developments

Granta Park Daycare Centre, Oxfordshire. AQA for new build daycare centre adjacent to major road.

Curzon Cinema, Colchester. Air quality assessment for town centre new build cinema.

Newfoundland Circus, Bristol - AQA for hotel development in city centre

Salesians School, Chertsey - AQA for school extension near M25

Appendix E - Air Quality Addendum

Conrad (Sandycroft) Ltd

Sandycroft Peak Power Electricity Generation Facility

Air Quality Addendum

MLM. Group

Notice

This document and its contents have been prepared and intended solely for Conrad (Sandycroft) Ltd information and use in relation to a Peak Power Electricity Generation Facility, Deeside.

MLM Consulting Engineers Limited assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

Document History

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Project: Sandycroft Peak Power Electricity Generation Facility
Document Title: Air Quality Addendum
Document Reference: 777312-MLM-ZZ-XX-RP-J-0004
MLM Reference: DG/777312/KN

Revision	Status	Description	Author	Checked	Approved	Date
C01	S2		Ioanna Gegisian	Karunakar Nagula	Rod Ellison	20/12/2018

Contents

1 Introduction

The Environmental Permitting (England and Wales) (Amendment) Regulations 2018 SI 110 (henceforth the 'EPR') were published in January 2018 to transpose the requirements of the Medium Combustion Plant Directive (MCPD). The MCPD sets out rules to control emissions of sulphur dioxide (SO_2), nitrogen oxides (NO_x) and dust into the air. The MCPD regulates pollutant emissions from the combustion of fuels in plants with a rated thermal input equal to or greater than 1 megawatt thermal (MWth) and less than 50 MWth and effectively forms a new tier of regulation for plant formerly below the trigger thresholds for EPR.

This Air Quality Addendum presents an overview of the Air Quality Assessment (AQA), submitted to Flintshire County Council (FCC) as part of the approved planning application [Planning Ref: 057731] to confirm that the information presented remains relevant and accurately represents the intended activities of the Peak Power Electricity Generation Facility ('hence forth referred to as the Plant') at Factory Road, Deeside (the 'Site'). It includes any additional data required for the 'specified generator' application required by the MCPD by aligning the aforementioned AQA with the following Environment Agency (EA) guidance:

- *Emissions from specified generators; Guidance on dispersion modelling for oxides of nitrogen assessment from specified generators*[1] (referred to "SG guidance"); and,
- *Air emissions risk assessment for your environmental permit* (referred to "EA online guidance")[2].

The addendum has been structured to mirror the information requirements set out in the SG guidance, which are as follows:

- Site setting description;
- Environmental standards to air;
- Modelling methodology including:
  - emissions,
  - building and terrain,
  - background concentrations,
  - NO_x to NO_2 conversion,
  - operating envelope;
  - operational hours; and,
- Results and Impact Assessment.

[1] Available at https://consult.environment-agency.gov.uk/psc/mcp-and-sg-regulations/supporting_documents/Specified%20Generators%20Modelling%20GuidanceINTERIM%20FINAL.pdf
[2] Available at https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit

2 Site Setting Description

Table 2.1 outlines the requirements, the relevant section in the original AQA and additional information, were relevant.

Table 2.1 Site Setting Description Information Requirements

Item	Included in original AQA?	Additional Information/ Clarification
Identify boundary of neighbouring Local Authorities (LA) within 1 km from the Site.	No.	No neighbouring LA within 1 km.
Identify Air Quality Management Area (AQMA) declared for NO_2 within 1 km from the Site.	Yes (Section 3 – Baseline).	None required.
Identify SG operating >50 hrs per year within 1 km from the Site.	Yes (Section 1–Introduction).	None identified.
Sensitive receptors and public exposure.	Yes (Section 3 –Baseline).	A review of current mapping has confirmed that the sensitive human receptors included in the AQA remain relevant. A check for statutory designated sites, using the MAGIC website has confirmed that the designated sites identified in the original AQA remain relevant.
Building and terrain.	Yes (Section 4 – Methodology).	Refer to Table 5.2 of this addendum. Terrain was included, see Section 4.8 of the original AQA.
Background concentrations.	Yes (Section 3 – Baseline).	A review of the latest air quality Annual Progress Report [3] confirmed that there are no significant changes in air quality. The AQA has used annual mean NO_2 and NO_X background concentrations from Defra for 2018. The latest Defra for 2018, based on 2015 observations, indicate annual mean NO_2 and NO_X background concentrations of 13.3 and 18.3 µg/m^3 respectively. These background concentrations are referenced in this addendum.

[3] North Wales Combined Authority (2017) Annual Progress Report , September 2017

3 Environmental Standards for Air

The AQA has considered all relevant Air Quality Objectives (AQO) for NO_2 in Table 1, which are:

- Annual mean NO_2: 40 µg/m^3; and
- Hourly mean NO_2: 200 µg/m^3 not to be exceeded more than 18 times a year (ie 99.79th Percentile).

Section 2.7 of the original AQA, defines the Critical Load (CL) and Tables 7 and 8 present the CLs for nitrogen and acid deposition for the identified ecological receptors. The relevant objectives for emissions of ambient NO_x, for the protection of ecosystems, also referred to as critical levels, are:

- Annual mean NO_x: 30 µg/m^3; and
- Daily mean NO_x: 75 µg/m^3.

The SG guidance states the need to present the predicted results for the 100th percentile of the hourly mean NO_2 in order to understand potential health effects, given the fact that there is no standard for acute exposure. The AQA, Table 10 of the AQA presents the 100th percentile results. Section 5 of this Addendum presents the results for the 100th percentile of the hourly mean NO_2 as part of the remodelling exercise.

4 Methodology

Table 4.1 outlines the information requirements in regards to methodology, the relevant section in the AQA and additional information, were relevant.

Table 4.1 Methodology Information Requirements

Item	Included in AQA?	Additional Information/ Clarification
Emissions.	Yes (Section 4–Methodology)	A remodelling exercise has been undertaken to reflect the final design of the plan. Details are presented in Section 5 of this addendum.
Building and terrain.	See Table 2.1 of this addendum.	
Background Concentrations.	See Table 2.1 of this addendum.	
NO_X and NO_2 conversion	Yes (Section 4–Methodology).	
Operating envelope and operating hours.	Yes (Section 4 – Methodology).	The AQA stated that the although the Plant's likely operating profile is three hours per day, the assessment was based on the Plant operating 8 hours per day, 365 days per year. The remodelling exercise amended the operating profile to reflect the anticipated hours and has considered the following: • Short term (hourly): 8760 hrs per year; and • Long term (annual): 2000 hrs per year.

5 Results and Assessment

5.1 Model Inputs

The remodelling exercise was undertaken to reflect the final design of the Plant that now includes two 2 MW_e generators (CAT3520c) and one 1.125 MW_e generator (CAT 3516). The emission data were taken from the generators' technical datasheets. The remodelling has utilised the advanced dispersion model ADMS 5 (version 5.2). The dispersion modelling has been based on five years (2013-2017) of hourly sequential meteorological data from the meteorological station at Hawarden, as per original AQA. The building dimensions of the Plant used in the remodelling were slightly amended to reflect the finalised design, with full details presented in Table 5.2, all other building dimensions remain unchanged from the original AQA. All other model assumption have remained unchanged and are presented in the original AQA.

Table 5.1 Stack Emission Parameters

Parameter	GEN 1 (CAT3520C)	GEN2 (CAT3516)	GEN3 (CAT3520C)
Exhaust Coordinates (NGR)	332468, 367959	332499, 367937	332526, 367920
Stack Height (m)	10	10	10
Exhaust Diameter (m)	0.5	0.4	0.5
Normalised Exhaust Flow (m^3/s)[1]	1.81	0.9	1.81
Velocity (m/s)	15.3	12.9	15.3
% Oxygen (dry)	8.4	8.9	8.4
Temperature (°C)	469	521	469
Pollution Concentration (mg/m^3)*	250	500	250
Emission Rate (g/s)	0.45	0.44	0.45
Notes: * - 5% O_2, 1013 mbar, T 273K			

Table 5.2 Building Dimensions used in the Dispersion Model

Building	Approximate Centre Point (X,Y)	Height (m)	Length (m)	Width (m)	Angle (°)
GEN1 (22)	332467, 367957	3.8	3.5	14.0	214.3
GEN2 (23)	332498, 367939	3.8	3.5	14.0	214.0
GEN3 (24)	332526, 367920	3.8	3.5	14.0	214.0

5.2 Significance Criteria

This Addendum assesses the significance of the predicted impacts based on the screening criteria presented in the EA online guidance. The EA online guidance states that in order to determine the potential significance of the predicted impacts, two parameters need to be presented:

- the Process Contribution (PC) which is the pollutant concentration resulting from the contribution of the Plant alone; and
- the Predicted Environmental Concentration (PEC) which is the background concentration plus the process contribution.

Both metrics are considered as absolute pollutant concentrations and as a percentage of the relevant assessment standard. Based upon the EA online guidance the significance criteria for assessing impacts in the assessment are set out below. The PC can be considered insignificant if:

- the long term process contribution is <1 % of the long term air quality standards or guidelines; and
- the short term process contribution is <10 % of the short term air quality standards or guidelines.

In the event that the PC exceeds the above criterion, impacts can be considered insignificance when the PEC does not exceed 70% of the long term standard, or 20% of the headroom between short term standard and short term background concentrations. This approach is used to give clear definition to those impacts that can be disregarded as insignificant, including impacts on receptors within statutory designated ecological sites, and which need to be considered in more detail or may require specific further mitigation.

In relation to impacts on sensitive ecological receptors, the specific sensitivity criteria for locally designated sites used taken from EA online guidance state that impacts of stack emissions are considered to have insignificant impact (ie no further mitigation or assessment required) if:

- the PC is <100%of the Long Term Critical Load or Critical Level; and
- the PEC is <100 % of the Critical Load or Critical Level.

5.3 Updated Modelling Results

5.3.1 Human Receptors

The updated modelling results indicated that annual mean NO_2 PCs (Table 5.3) are below 1% of the Air Quality Objective (AQO) at all receptors apart from receptors R1-R6; however as the PECs are less than 70% of the AQO at these receptor locations, long term impacts on sensitive human receptors are **insignificant**.

Table 5.3 Long-Term (Annual Mean) NO_2 Concentrations at Discrete Receptors

Receptor	PC (µg/m^3)	PC as % of the AQO	PEC* (µg/m^3)	PEC as % of the AQO
R1	2.5	6.3	15.8	39.6
R2	2.0	5.0	15.3	38.3
R3	1.5	3.7	14.8	37.0
R4	1.4	3.6	14.8	36.9
R5	1.6	3.9	14.9	37.2
R6	1.5	3.7	14.8	37.0
R7	0.3	0.6	13.6	34.0
R8	0.2	0.5	13.5	33.8
R9	0.1	0.3	13.4	33.6
R10	0.1	0.2	13.4	33.5
R11	0.1	0.3	13.4	33.6
R12	0.1	0.3	13.4	33.6
AQO	**40**			

*PEC was calculated based on the latest Defra Background map concentration for 2018: 13.3 µg/m^3

Table 5.4 presents the short term modelled results. The results show that short term PCs are above 10% of the relevant objective at the majority of receptors. The PEC is also above 20% of the relevant objective at receptors R1-R6 and R8; however the PEC is comfortably below the 200µg/m^3 hourly objective. Furthermore, given the conservative nature of the assessment (ie including modelling for 8760 hour per year over five years and assuming a short term background concentrations double the annual mean background), the potential impacts from short term emissions of NO_2 are considered to be **insignificant**.

Table 5.4 Short-Term (Hourly Mean -99.79th Perc.) NO_2Concentrations at Discrete Receptors

Receptor	PC (µg/m³)	PC as % of the AQO	PEC*(µg/m³)	PEC as % of the AQO
R1	38.5	19.2	65.1	32.6
R2	30.7	15.4	57.4	28.7
R3	27.4	13.7	54.0	27.0
R4	29.1	14.6	55.8	27.9
R5	35.2	17.6	61.8	30.9
R6	23.8	11.9	50.4	25.2
R7	12.7	6.4	39.4	19.7
R8	15.8	7.9	42.4	21.2
R9	11.3	5.6	37.9	19.0
R10	9.2	4.6	35.8	17.9
R11	10.8	5.4	37.5	18.7
R12	6.9	3.5	33.6	16.8
AQO	**200**			
*PEC was calculated based 2 x the annual mean background : 26.6 µg/m³				

The calculated 100th percentile results for the hourly mean NO_2 are presented in Table 5.5. They indicate that concentrations (PEC) at the identified human receptors will be comfortably below 200µg/m³. As the model was based on continuous operation, in reality hourly concentrations are expected to be significantly lower.

Table 5.5 Short-Term (Hourly Mean -100th Perc.) NO_2 Concentrations at Discrete Receptors

Receptor	PC (µg/m³)	PC as % of the AQO	PEC* (µg/m³)	PEC as % of the AQO
R1	40.9	20.4	67.5	33.8
R2	36.8	18.4	63.4	31.7
R3	31.1	15.5	57.7	28.9
R4	40.4	20.2	67.1	33.5
R5	38.4	19.2	65.1	32.5
R6	36.7	18.3	63.3	31.6
R7	14.0	7.0	40.6	20.3
R8	17.3	8.7	43.9	22.0
R9	14.2	7.1	40.9	20.4
R10	19.4	9.7	46.0	23.0
R11	15.0	7.5	41.6	20.8
R12	9.2	4.6	35.8	17.9
*PEC was calculated based 2 x the annual mean background: 26.6 µg/m³. No AQO for 100th percentile.				

5.3.2 Ecological Receptors

The predicted annual mean ambient NO_x concentrations on the identified ecological receptors are presented in Table 5.6. Impacts on annual mean NO_x concentrations at the designated sites are below the screening criteria (below 1% of the critical level of 30 µg/m^3) at all sites except at two receptors on the Dee Estuary. However, the PECs at Dee Estuary are below 70% of the objective and therefore the impact is considered to be **insignificant**. The PCs at the locally designated sites are below 100% of the objective and therefore impacts are **insignificant.**

Table 5.6 Predicted Annual Mean NO_x Concentrations

Receptor	Description	PC (µg/m^3)	PC as % of the AQO	PEC*(µg/m^3)	PEC as % of the AQO
ER1a	Dee Estuary (SPA, SAC, Ramsar, SSSI)	0.11	0.4	18.4	61.3
ER2a	River Dee and Bala Lake (SAC, SSSI)	0.42	1.4	18.7	62.4
ER2b	River Dee and Bala Lake (SAC, SSSI)	0.40	1.3	18.7	62.3
ER2c	River Dee and Bala Lake (SAC, SSSI)	0.09	0.3	18.4	61.3
ER3a	Deeside and Buckley Newt sites (SAC)	0.01	<0.0	18.3	61.0
ER3b	Deeside and Buckley Newt sites (SAC)	0.01	<0.0	18.3	61.0
ER3c	Deeside and Buckley Newt sites (SAC)	0.00	<0.0	18.3	61.0
ER3d	Deeside and Buckley Newt sites (SAC)	0.00	<0.0	18.3	61.0
ER4a	Ancient Woodland (37658)	0.03	0.1	18.3	61.0
ER5a	Engineer Park (LWS)	0.08	0.3	18.4	61.2
ER6a	The River Dee (LWS)	0.24	0.8	18.5	61.8
ER7a	Ancient Woodland (35862)	0.04	0.1	18.3	61.1
AQO	**30**				
*PEC was calculated based on the latest Defra Background map concentration for 2018: 18.3 µg/m^3					

In regards to potential impacts on 24 hour mean concentrations, the PCs at the designated sites are below 10% of the short term AQO at all sites except the River Dee and for Bala Lake (see Table 5.7). The PECs at River Dee and for Bala Lake are comfortably below the relevant objective. Therefore given the conservative nature of the assessment (ie including modelling for 8760 hours per year over five years, and assuming a short term background concentrations double the annual mean background) the impact is considered **insignificant**.

Table 5.7 Predicted 24 Hour Mean NO_X Concentrations

Receptor	Description	PC (µg/m³)	PC as % of the AQO	PEC*(µg/m³)	PEC as % of the AQO
ER1a	Dee Estuary (SPA, SAC, Ramsar, SSSI)	7.2	9.6	43.8	58.4
ER2a	River Dee and Bala Lake (SAC, SSSI)	11.9	15.9	48.5	64.6
ER2b	River Dee and Bala Lake (SAC, SSSI)	11.6	15.5	48.2	64.2
ER2c	River Dee and Bala Lake (SAC, SSSI)	9.0	11.9	45.5	60.7
ER3a	Deeside and Buckley Newt sites (SAC)	2.4	3.1	38.9	51.9
ER3b	Deeside and Buckley Newt sites (SAC)	1.0	1.4	37.6	50.1
ER3c	Deeside and Buckley Newt sites (SAC)	0.5	0.7	37.1	49.4
ER3d	Deeside and Buckley Newt sites (SAC)	0.4	0.6	37.0	49.4
ER4a	Ancient Woodland (37658)	1.7	2.3	38.3	51.0
ER5a	Engineer Park (LWS)	2.8	3.7	39.4	52.5
ER6a	The River Dee (LWS)	5.4	7.2	42.0	55.9
ER7a	Ancient Woodland (35862)	4.7	6.2	41.2	55.0
AQO	**75**				
*PEC was calculated based on the latest Defra Background map concentration for 2018: 36.6 µg/m³					

Potential impacts from nitrogen deposition at the ecological sites are presented in Table 5.8. The results indicated the PCs are below 1% of the lower critical load and therefore impacts are considered **Insignificant**.

Table 5.8 Predicted Nitrogen Deposition (kgN/ha/yr)

Receptor	Lower Critical Load (CL)*	Baseline*	PC **	PC as %of CL
ER1a	8	20.58	0.011	0.1
ER2a	N/A	N/A	N/A	N/A
ER2b	N/A	N/A	N/A	N/A
ER2c	N/A	N/A	N/A	N/A
ER3a	10	33.6	0.002	0.0
ER3b	10	33.6	0.001	0.0
ER3c	10	33.6	0.001	0.0
ER3d	10	33.6	0.001	0.0
ER4a	10	28.98	0.005	0.1
ER5a	20	20.16	0.017	0.1
ER6a	20	20.16	0.024	0.1
ER7a	10	33.88	0.007	0.1

* Data extracted from the original AQA (taken from the Air Pollution Information System (APIS) website[4])
** Calculated following the AQMAU[5] methodology

Potential impacts from acid deposition over the ecological sites are presented in Table 5.9. The results indicated the PCs are below 1% critical load and therefore impacts are considered **Insignificant**.

Table 5.9 Predicted Acid Deposition (keq/ha/yr)

Receptor	Critical Load			Baseline		PC **	PC as %of CL***
	CLmaxN	CLmaxS	CLminN	N	S		
ER1a	0.45	0.22	0.670	1.47	0.33	0.0008	0
ER2a	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ER2b	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ER2c	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ER3a	1.448	1.722	0.142	2.40	0.33	0.0002	0
ER3b	1.448	1.722	0.142	2.40	0.33	0.0001	0
ER3c	1.448	1.722	0.142	2.40	0.33	0.0001	0
ER3d	1.448	1.722	0.142	2.40	0.33	0.0001	0

[4] Available at : http://www.apis.ac.uk/
[5]AQMAU (2011) AQTAG06 Technical guidance on detailed modelling approach for an appropriate assessment for emissions to air.

Receptor	Critical Load			Baseline		PC **	PC as %of CL***
	CLmaxN	CLmaxS	CLminN	N	S		
ER4a	10.811	11.168	0.357	2.07	0.29	0.0004	0
ER5a	4	5.071	1.071	1.44	0.33	0.0012	0
ER6a	4	4	4.000	1.44	0.33	0.0017	0
ER7a	10.761	11.118	0.357	2.42	0.38	0.0005	0

* Data extracted from the original AQA (taken from APIS).
** Calculated following the AQMAU methodology.
*** Assessed using the Critical Load Function on APIS.

6 Conclusion

The impact of the operation of the Plant on local air quality has been assessed and this addendum in conjunction with the AQA report presents the findings of that assessment.

The detailed dispersion model ADMS 5 (version 5.2) was used to predict the changes in pollutant concentrations that would occur when operational. The pollutant considered in the assessment was nitrogen dioxide. Background data from Defra, in combination with the predicted Process Contribution (PC) from the operation of the Plant, was used to determine the total Predicted Environmental Concentration (PEC) for each averaging period for comparison with the relevant statutory objectives.

The results of the AQA and the information detailed in this addendum show that the operation of the Plant will not have a significant impact on local air quality and it is unlikely to cause any exceedances of the relevant statutory objectives.

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2 Eldon Street
London, EC2M 7LS

www.mlmgroup.com

Appendix F - Directors Date of Births

Title	Name	Date of Birth
Mr	Mark David New	08/12/1972
Mr	Christopher John Stewart Dunley	10/12/1967
Mr	Steven Neville Hardman	22/05/1968
Mr	Christopher Noel Barry Shears	21/12/1971

Appendix G - Forms

Application for an environmental permit: Part A – About you

Fill in this part A if you are applying for a new permit, applying to change or surrender an existing permit, or want to transfer an existing permit to yourself.

Please check that this is the latest version of the form available from our website.

Please read through this form and the guidance notes that come with it. All relevant guidance documents can be found on our website.

Where you see the term 'document reference' on the form, give the document references and send the documents with the application form when you've completed it.

Contents

1 About you

Are you applying as an individual, an organisation of individuals (for example, a partnership), a company (this includes Limited Liability Partnerships) or a public body?

An individual	☐	*Go to section 2*
An organisation of individuals (for example, a partnership)	☐	*Go to section 3*
A public body (such as a local council)	☐	*Go to section 4*
A registered company or other corporate body	☒	*Go to section 5*

2 Applications from individuals

2a Please give us the following details

Title		
First name		
Last name		*Go to section 6*

3 Applications from organisations of individuals

3a Organisation details

Organisation name	
Type of organisation	
If 'Other', please specify	

3b Main representative's details

Title	
First name	

Last name

3c Second representative's details:

Title

First name

Last name

3d Other representative's details

If relevant, please provide details of all other representatives on a separate sheet and tick here to show that you have done so. ☐ *Go to section 6*

4 Applications from public bodies

4a Public body details

Public body name

Type of public body

If 'Other', please specify

4b Executive officer's details

The executive is an officer of the public body authorised to sign on your behalf.

Title

First name

Last name

Position *Go to section 6*

5 Applications from a registered company or other corporate body

5a Company details

Company name Conrad (Sandycroft) Ltd

Company registration number 10969652

Date of registration 19/09/2017

If you are applying as a corporate organisation that is now a limited company, please provide evidence of your status and tell us the reference number you have given this document with this evidence.

Document reference *Go to section 6*

6 Your address

6a Your main (registered office) address

For companies this *must* be the address on record at Companies House.

Address Suites D&E Windrush Court

Blacklands Way

	Abingdon
	England
Postcode	OX14 1SY
Telephone - mobile	
Telephone - office	
Email address	

If you are applying as an organisation of individuals, every partner needs to give us their details, including their title. If necessary, continue on a separate sheet and tell us the reference you have given the sheet.

Document reference	Appendix F – 777292-MLM-ZZ-XX-RP-J-0004

6b UK business address *only* if different from above

Address	
Postcode	
Telephone - mobile	
Telephone - office	
Email address	

Go to section 7

7 Contact details

7a Who can we talk to about your application?

This can be someone acting as a consultant or 'agent' for you.

Title	Mr
First name	Rod
Last name	Ellison
Address	MLM Group
	Temple 1852
	Lower Approach Road, Temple Meads

	Bristol
Postcode	BS1 6QS
Telephone - mobile	
Telephone - office	01172 445510
Email address	rod.ellison@mlmgroup.com

7b Who can we talk to about your operation?

Same as the application contact in 7a	☒
Title	
First name	
Last name	
Address	
Postcode	
Telephone - mobile	
Telephone - office	
Email address	

7c Who can we talk to about your billing or invoice?

Same as the application contact in 7a	☐
Same as the operation contact in 7b	☐
Title	Mr
First name	Steven
Last name	Hardman
Address	Suites D&E Windrush Court
	Blacklands Way

	Abingdon
	England
Postcode	OX14 1SY
Telephone - mobile	
Telephone - office	
Email address	

Application for an environmental permit: Part B2 – General: new bespoke permit

Fill in this part of the form together with parts A and F1 or F2, if you are applying for a new bespoke permit.

You also need to fill in part B3, B4, B5, B6, or B7 (depending on what activities you are applying for).

Please check that this is the latest version of the form available from our website.

Please read through this form and the guidance notes that came with it. All relevant guidance documents can be found on our website.

Contents

1 About the permit

1a Discussions before your application

If you have had discussions with us before your application, give us the case reference or details on a separate sheet.

Case or document reference	N/A

1b Is the permit for a site or for a mobile plant?

Note: The term 'mobile plant' does not include mobile sheep dipping unit.

Site ☒ *Go to section 2*

Mobile Plant ☐ *Go to section 1c*

1c Have we told you during pre-application discussions that we believe that a mobile permit is suitable for your activity?

No ☐

Yes ☐

1d Have there been any changes to your proposal since this discussion?

No ☐ *Go to section 3*

Yes ☐ Send us a description of the activity you want to carry out, highlighting the changes made since our pre-application discussions. Give us the reference, below.

Document reference		*Go to section 3*

2 About the site (not mobile plant)

2a What is the site name, address, postcode and national grid reference?

Site name	Sandycroft Peak Power Electricty Generation Facility
Address	Factory Road
	Deeside

	Sandycroft
Postcode	CH5 2DD
National grid reference for the site (12 digit)	

2b How many regulated facility types are you applying for?

One	☒	*Go to section 2c*
Two or more	☐	*Go to section 2d*

2c What type of regulated facility are you applying for? (For one facility type only.)

Installation	☐	*Tick the relevant box in 2c1*
Waste operation	☐	*Tick the relevant box in 2c2*
Mining waste operation	☐	*Tick the relevant box in 2c3*
Water discharge activity (all)	☐	*Go to section 3d*
Medium Combustion Plant Only	☐	*Tick the relevant box in 2c4*
Medium Combustion Plant/Specified Generator combined	☐	*Tick the relevant box in 2c4*
Specified Generator Only	☒	*Tick the relevant box in 2c4*

What is the national grid reference for the regulated facility? (See the guidance notes on part B1 and note the different requirement for water discharge activities.)

As in 2a above	☐	
Different from 2a	☐	Please fill in the national grid reference below
National grid reference for the facility		

What is the type of activity?

2c1 Installation		**2c2**	**Waste Operation**	
Intensive farming installation	☐		Landfill gas facility (closed landfill)	☐
Local authority (Part A (2) and Part B)	☐		Opra charged activity	☐
Low impact installation (see question 2e below)	☐		Tier 2 charged bespoke activity (see charging guidance for list)	☐
Opra charged activity	☐		Pet cemetery	☐
Directly associated activity	☐			
Paragraph-17 installation	☐			
2c3 Mining waste operation		**2c4**	**Medium Combustion Plant/Specified Generator**	
Non-Opra charged activity	☐		Tier 2 charged complex bespoke activity (see charging guidance)	☒
Opra charged activity ***Go to section 2e***	☐		Tier 2 charged simple bespoke activity (see charging guidance)	☐

2d What types of regulated facilities are you applying for? (For two or more facility types.)

Regulated Facility 1

National grid reference (12 digit)		
Installation	☐	*Tick the relevant box in 2d1*
Waste operation	☐	*Tick the relevant box in 2d2*
Mining waste operation	☐	*Tick the relevant box in 2d3*
Water discharge activity (all)	☐	*Go to section 3d*
Medium Combustion Plant only	☐	*Tick the relevant box in 2d4*
Medium Combustion Plant/ Specified Generator combined	☐	*Tick the relevant box in 2d4*
Specified Generator only	☐	*Tick the relevant box in 2d4*

2d1 Installation		**2d2**	**Waste Operation**	
Intensive farming installation	☐		Landfill gas facility (closed landfill)	☐
Local authority (Part A (2) and Part B)	☐		Opra charged activity	☐
Low impact installation (see question 2e below)	☐		Tier 2 charged bespoke activity (see charging guidance for list)	☐
Opra charged activity	☐		Pet cemetery	☐
Directly associated activity	☐			
Paragraph-17 installation	☐			

2d3 Mining waste operation		**2d4**	**Medium Combustion Plant/Specified Generator**	
Non-Opra charged activity	☐		Tier 2 charged complex bespoke activity (see charging guidance)	☐
Opra charged activity	☐		Tier 2 charged simple bespoke activity (see charging guidance)	☐

Regulated Facility 2

National grid reference (12 digit)		
Installation	☐	*Tick the relevant box in 2d1*
Waste operation	☐	*Tick the relevant box in 2d2*
Mining waste operation	☐	*Tick the relevant box in 2d3*
Water discharge activity (all)	☐	*Go to section 3d*
Medium Combustion Plant only	☐	*Tick the relevant box in 2d4*
Medium Combustion Plant/Specified Generator combined	☐	*Tick the relevant box in 2d4*
Specified Generator only	☐	*Tick the relevant box in 2d4*

2d1 Installation		**2d2**	**Waste Operation**	
Intensive farming installation	☐		Landfill gas facility (closed landfill)	☐
Local authority (Part A (2) and Part B)	☐		Opra charged activity	☐

Low impact installation (see question 2e below)	☐	Tier 2 charged bespoke activity (see charging guidance for list)	☐
Opra charged activity	☐	Pet cemetery	☐
Directly associated activity	☐		
Paragraph-17 installation	☐		

2d3 Mining waste operation		**2d4 Medium Combustion Plant/Specified Generator**	
Non-Opra charged activity	☐	Tier 2 charged complex bespoke activity (see charging guidance)	☐
Opra charged activity	☐	Tier 2 charged simple bespoke activity (see charging guidance)	☐

Regulated Facility 3 etc.

Do you want three or more facilities?

No ☐ *Go to section 2e*

Yes ☐ Use a separate sheet and send it to us with your application form. Tell us below the reference you have given this separate sheet.

Document reference | | *Go to section 2e*

2e Low impact installations (installations only)

Are any of the regulated facilities low impact installations?

No ☒ *Go to section 2f*

Yes ☐

Please give us a description of your proposed activity telling us how you meet the conditions for a low impact installation and send it to us with your application form.

Document reference |

Tick the box to confirm you have filled in the low impact installation checklist in Appendix 1 for each regulated facility. ☐

2f Treating batteries

Are you planning to treat batteries? (See the guidance notes on part B2.)

No ☒

Yes ☐ Tell us how you will do this, send us a copy of your explanation and tell us the reference you have given this explanation.

Document reference |

2g Multi-operator installation

If the site is a multi-operator site (that is there is more than one operator of the installation) then fill in the table below the application reference for each of the other permits.

Table 1 – Other permit application references

3 Your ability as an operator

If you are only applying for a water discharge activity, you only have to fill in question 3d.

3a Relevant offences – installations, waste operations, medium combustion plant and specified generators (See the guidance notes on part B2)

Have you, or any other relevant person, been convicted of any relevant offence?

No ☒ *Go to section 3b*

Yes ☐ Please give details below

Title	
First name	
Last name	
Date of birth (DD/MM/YYYY)	
Position held at the time of the offence	
Name of the court where the case was dealt with	
Date of conviction (DD/MM/YYYY)	
Offence and penalty set	
Date any appeal against the conviction will be heard (DD/MM/YYYY)	

If necessary, use a separate sheet to give us details of other relevant offences, and tell us below the reference number you have given the extra sheet.

Document reference	

3b Technical ability - relevant waste operations only (See the guidance notes on part B2)

3b1 Which approved scheme are you using to show you have the suitable technical skills and knowledge to manage your facility?

CIWM / WAMITAB ☐

ESA / EU ☐

3b2 Do you already hold the relevant, formal qualifications to manage your facility?

Yes ☐ Tick to confirm you've included all original and continuing competence evidence. ☐

No ☐ Tick to confirm you've included evidence you've registered with a Scheme. ☐

3c Finances (installations, waste operations, medium combustion plant, specified generators and mining waste operations only)

Do you or any relevant person have current or past bankruptcy or insolvency proceedings against you?

No ☒ *Go to section 3d.*

Yes ☐ Please give details below of the required set-up costs (including infrastructure), maintenance and clean up costs for the proposed facility against which a credit check may be assessed.

Please note: We may want to contact a credit reference agency for a report about your business's finances.

Landfill, Category A mining waste facilities and mining waste facilities for hazardous waste only

How do you plan to make financial provision (to operate a landfill or a mining waste facility you need to show us that you are financially capable of meeting the obligations of closure and aftercare)?

Bonds ☐

Escrow account ☐

Trust fund ☐

Lump sum ☐

Other ☐

Provide a plan of your estimated expenditure on each phase of the landfill or mining waste facility.

Document reference

3d Management systems (all)

You can find guidance on management systems in our 'How to Comply' document. We have also developed environmental management toolkits for some business sectors which you can use to produce your own management system. You can get this by calling 0300 065 3000 or by downloading it from our guidance webpages.

3d1 Does your management system meet the conditions set out in our guidance?

Yes ☒

No ☐

3d2 What management system will you provide for your regulated facility?

EC Eco-Management and Audit Scheme (EMAS) ☐

ISO 14001 ☐

BS 8555 (Phases 1–5) ☐

Green Dragon ☐

Own management system ☒

3d3 Make sure you included a summary of your environment management system with the application. Tick the box to conform you've done this and tell us the document reference, below. ☐

Document reference 777292-MLM-ZZ-XX-RP-J-0004

Water discharge activities: *Go to section 5.*

4 Consultation (fill in 4a to 4c for installations and waste operations and 4d for installations only. Fill in 4e for medium combustion plant and specified generators only)

Could the waste operation or installation involve releasing any substance into any of the following?

4a A sewer managed by a sewerage undertaker

No ☐

Yes ☐ Please name the sewerage undertaker

4b A harbour managed by a harbour authority

No ☐

Yes ☐ Please name the harbour authority

4c Direct into relevant territorial waters or coastal waters within the sea fisheries district of a local fisheries

No ☐

Yes ☐ Please name the fisheries committee

4d Is the installation on a site for which:

4d1 a nuclear site licence is needed under section 1 of the Nuclear Installations Act 1965?

No ☐

Yes ☐

4d2 a policy document for preventing major accidents is needed under regulation 5 of the Control of Major Accident Hazards?

No ☐

Yes ☐

4e Is the medium combustion plant or specified generator located within an Air Quality Management Area (AQMA)?

No ☒

Yes ☐ What is the name of the AQMA?

What is the name of the Local Authority?

5 Supporting information

5a Provide a plan or plans for the site (but not mobile plant)

Mark the site boundary in green (See guidance notes on part B2 for more information on what should be included)

Document reference: Appendix A – 777292-MLM-ZZ-XX-RP-J-0004

5b Provide the relevant sections of a site condition/baseline report, if this applies

Document reference: N/A

If you are applying for an installation, tick the box to confirm that you have sent in a baseline report. ☐

5c Provide a non-technical summary of your application (see the guidance notes on part B2)

Document reference: 777292-MLM-ZZ-XX-RP-J-0004

6 Environmental risk assessment

Provide an assessment of the risks each of your proposed regulated facilities poses to the environment. The risk assessment must use H1 or an equivalent method.

Document reference: Appendix D and E – 777292-MLM-ZZ-XX-RP-J-0004

Appendix 1 – Low impact installation checklist (see guidance notes on part B2)

Installation reference					
Condition	**Response**				**Do you meet this?**
A – Management techniques	Provide references to show how your application meets A.				Yes ☐ No ☐
	References				
B – Aqueous waste	Effluent created		m3/day		Yes ☐ No ☐
C – Abatement systems	Provide references to show how your application meets C.				Yes ☐ No ☐
	References				
D - Groundwater	Do you plan to release any hazardous substances or non-hazardous pollutants into the ground?		Yes ☐ No ☐		Yes ☐ No ☐
E – Producing waste	Hazardous waste		Tonnes per year		Yes ☐ No ☐
	Non-hazardous waste		Tonnes per year		
F – Using energy	Peak energy consumption		MW		Yes ☐ No ☐
G – Preventing accidents	Do you have appropriate measures to prevent spills and major releases of liquids? (See 'How to comply'.)		Yes ☐ No ☐		Yes ☐ No ☐
	Provide references to show how your application meets G.				
	Reference				
H - Noise	Provide references to show how your application meets H.				Yes ☐ No ☐
	Reference				
I - Emissions of polluting substances	Provide references to show how your application meets I.				Yes ☐ No ☐
	Reference				
J – Odours	Provide references to show how your application meets J.				Yes ☐ No ☐
	Reference				
K – History of keeping to the regulations	Say here whether you have been involved in any enforcement action as described in Compliance History Appendix 1 explanatory notes.		Yes ☐ No ☐		

Application for an environmental permit: Part B3 – New bespoke installation permit

Fill in this part of the form, together with parts A, B2 and F1, if you are applying for a new bespoke permit for an installation.

Please check that this is the latest version of the form available from our website.

Please read through this form and the guidance notes that came with it. All relevant guidance documents can be found on our website.

Contents

1 About your activities

1a Tell us about the activities you want to do.

Fill in Table 1a below with details of all the activities listed in schedule 1 of the Environmental Permitting Regulations (EPR) and all directly associated activities (DAAs) (in separate rows) that you propose to carry out at the installation. Please also use this table if you are applying for a new Medium Combustion Plant(s) and/or a Specified Generator(s).

Fill in a separate table for each installation you are applying for. Use a separate sheet if you have a long list and send it to us with your application form. Tell us the document reference.

Document reference	777292-MLM-ZZ-XX-RP-J-0004

Notes to help you complete Table 1a:

1 Quote the section number, part A1 or A2 or B, then paragraph and sub paragraph number as shown in part 2 of schedule 1 to the regulations.

2 Use the description from schedule 1 of the regulations. Include any extra detail that you think would help to accurately describe what you want to do.

3 By 'capacity', we mean:

- the total incineration capacity (tonnes every hour) for waste incinerators;
- the total landfill capacity (cubic metres) for landfills;
- the total treatment capacity (tonnes each day) for waste treatment;
- the total storage capacity (tonnes) for waste storage operations;
- the processing and production capacity for manufacturing operations; or
- the thermal input capacity for combustion activities.

4 The R (recovery) and D (disposal) codes are as set out in Annex I and/or Annex II of the European Waste Framework Directive (as amended).

5 Fill this in as a separate line for each directly associated activity and give an accurate description of any other activities associated with your schedule 1 activities.

Please note: You cannot have DAAs as part of a mobile plant application.

6 By 'total storage capacity', we mean the maximum amount of waste, in tonnes, you are able to store on the site at any one time.

Table 1a – Types of activities

Important: Put your main activity first, when listing all of the activities you want to do. Note; some questions only apply to activities involving the acceptance of waste.

Schedule 1 listed activities				**For installations that take waste only**		
Installation / Activity name	Schedule references (See note 1)	Description of the Activity (See note 2)	Activity capacity (See note 3)	Annex I and Annex 2 (disposal and recovery) codes (See note 4)	Hazardous waste treatment capacity (if this applies) (See note 3)	Non-hazardous waste treatment capacity (if this applies) (See note 3)
Specified Generator	Schedule 2B	Please refer to 777292-MLM-ZZ-XX-RP-J-0004	13.17			

Directly associated activities (See note 5)

Name of DAA	Description of the DAA (please identify the schedule 1 activity it serves)

For installations that take waste	Total storage capacity of non-hazardous waste (See note 6)	
	Total storage capacity of hazardous waste (See note 6)	
	Annual throughput (tonnes each year)	

1b Do you intend to accept waste as part of your activities?

No ☒ *Go to section 2*

Yes ☐ Tell us about the waste types you want to accept. See notes below.

For each line in Table 1a (including DAAs), fill in a separate document to list those types of waste you will accept onto the site for that activity. Give the List of Wastes catalogue code and description.

If you need to exclude wastes from your activity or facility by restricting the description, quantity, physical nature, hazardous properties, composition or characteristic of the waste, include these in the document. Send it to us with your application form.

If you want to accept any waste with a code ending in 99, you must provide more information and a full description in the document. You can use Table 1b as a template.

Document reference

Table 1b – Template example: types of waste accepted and restrictions	
Waste code	Description of waste
Example	Example
02 01 08*	Agrochemical waste containing dangerous substances
06 01 02*	Hydrochloric acid

2 Emissions to air, water and land

Fill in Table 2 below with details of the emissions that result from the operating techniques at each of your installations.

Fill in one table for each installation. You can use Table 2 as a template. Please provide the reference for each document.

Document references: Appendix D and E – 777292-MLM-ZZ-XX-RP-J-0004

Table 2 – Emissions (releases)				
Installation / Activity name	Sandycroft Peak Power Electricity Generation Facility			
Point source emissions to air				
Emission point reference and location	Source	Parameter	Quantity Unit	Unit
Please refer to Appendix D and E – 777292-MLM-ZZ-XX-RP-J-0004				
Point source emissions to water (other than sewers)				
Emission point reference and location	Source	Parameter	Quantity Unit	Unit
n/a				
Point source emissions to sewers, effluent treatment plants or other transfers off site				
Emission point reference and location	Source	Parameter	Quantity Unit	Unit
n/a				

Point source emissions to land				
Emission point reference and location	Source	Parameter	Quantity Unit	Unit
n/a				

3 Operating techniques

3a Technical standards

Fill in Table 3a for each activity at the installation you have referred to in Table 1a above, and list the relevant technical guidance note (TGN) or notes you are planning to use. If you are planning to use the standards set out in the TGN, there is no need to justify using them.

You must justify your decisions in a separate document if:

- there is no technical standard;
- the technical guidance provides a choice of standards; or
- you plan to use another standard.

This justification could include a reference to the Environmental Risk Assessment provided in section 6 of part B2 (General Bespoke Permit) of the application form. The documents in Table 3a should summarise the main measures you use to control the main issues identified in the H1 assessment, or technical guidance. For MCP/Specified Generators please use the Environment Agency's Specified Generator Tranche B Screening Tool (See the guidance notes on Part B3 for Tranche B Specified Generators).

For each of the activities listed in Table 3a, describe the type of operation and the options you have chosen for controlling emissions from your process.

Fill in one table for each installation. You can use Table 3a as a template. Please provide the reference for each document.

Document references	777292-MLM-ZZ-XX-RP-J-0004

Table 3a – Technical standards		
Installation / activity name	Sandycroft Peak Power Electricty Generation Facility	
Schedule activity or directly associated activity description	Relevant technical guidance note/document or best available techniques as described in BAT conclusions under IED*****. You will need to refer to 'How to comply' for all permits.	Document reference (if appropriate)
	'How to comply'	
Specified Generator	NRW Medium Combustion Plant and Specified Generator Guidance	777292-MLM-ZZ-XX-RP-J-0004
Specified Generator	Specified Generator Tranche B Screening Tool	777292-MLM-ZZ-XX-RP-J-0004
*****Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control).		

If appropriate, use block diagrams to help describe the operation and process. Give the document references you use for each diagram and description.

Document reference	

3b General requirements

Fill in a separate Table 3b for each installation. You can use Table 3b as a template. Please provide the reference for each document.

Document reference	777292-MLM-ZZ-XX-RP-J-0004

Table 3b – General requirements	
Installation / activity name	Sandycroft Peak Power Electricity Generation Facility

If the TGN or H1 assessment shows that emissions of substances not controlled by emission limits are an important issue, send us your plan for managing them	Document reference or references
If the TGN or H1 assessment shows that odours are an important issue, send us your odour management plan	Document reference or references
If the TGN or H1 assessment shows that noise or vibration are important issues, send us your noise or vibration management plan (or both)	Document reference or references
If our fire prevention guidance or H1 assessment shows that fire risk is an important issues, send us your fire management plan	Document reference or references
If the Environment Agency's Specified Generator Tranche B Screening Tool shows that dispersion modelling is not required to assess the risk to the environment, please send us a completed copy of the tool to support your decision	Document reference or references
If the Environment Agency's Specified Generator Tranche B Screening Tool shows that dispersion modelling is required to assess the risk to the environment, please send us a completed copy of the tool and your completed modelling report and modelling input files to support your application.	Document reference or references Appendix C – 777292-MLM-ZZ-XX-RP-J-0004

3c Types and amounts of raw materials

Fill in Table 3c for all schedule 1 activities. Fill in a separate table for each installation. You can use Table 3c as a template. Please provide the reference for each document.

Document reference	n/a

Table 3c – Types and amounts of raw materials				
Installation name				
Capacity (See note 1 below)				
Schedule 1 activity	Description of raw material and composition material	Maximum amount (tonnes) (See note 2 below)	Annual throughput (tonnes per year)	Description of how the raw material is used including any main hazards (include safety information sheets)

Notes

1 By ‘capacity’, we mean the total storage capacity (tonnes) or total treatment capacity (tonnes each day).

2 By ‘maximum amount’, we mean the maximum amount of raw materials on your site at any one time.

Use a separate sheet if you have a long list of raw materials, and send it to us with your application form. Tell us the reference for the extra sheet.

Document reference	

3d Information for specific sectors

For some sectors, we need more information to be able to set appropriate conditions in the permit. This is as well as the information you may provide in sections 5, 6 and 7.

For those activities listed below, you must answer the questions in the related appendices.

See guidance notes for Part B3 for medium combustion plant and specified generators.

Table 3d – Questions for specific sectors

Sector	Appendix
Combustion	See the questions in appendix 1
Chemicals	See the questions in appendix 2
Intensive farming	See the questions in appendix 3
Clinical waste	See the questions in appendix 4
Hazardous and non-hazardous waste recovery and disposal	See the questions in appendix 5
Incinerating waste	See the questions in appendix 6
Landfill	See the questions in appendix 7
Medium Combustion Plant (includes mobile plant)	See the questions in appendix 8
Combined Medium Combustion Plant/Specified Generator (includes mobile plant)	See the questions in appendix 8 and 9
Specified Generator only (includes mobile plant)	See the questions in appendix 9

4 Monitoring

4a Describe the measures you use to monitor emissions by referring to each emission point in Table 2 above

You should also describe any environmental monitoring. Tell us:

- how often you use these measures;
- the methods you use; and
- the procedures you follow to assess the measures.

Tell us the reference for the document.

Document reference	777292-MLM-ZZ-XX-RP-J-0004

4b Point source emissions to air only

Provide an assessment of the sampling locations used to measure point source emissions to air. The assessment must use Technical Guidance Note M1 (Monitoring). This is available in the Guidance section on our Website.

Document reference	n/a

5 Environmental impact assessment

5a Have your proposals had an environmental impact assessment under Council Directive 85/337/EEC of 27 June 1985 [Environmental Impact Assessment] (EIA)?

No ☒ Now go to section 6

Yes ☐ Please provide a copy of the environmental statement and, if the procedure has been completed:

- a copy of the planning permission; and
- the committee report and decision on the EIA.

Document reference

6 Resource efficiency and climate change

If the site is a landfill, you only need to fill in this section if the application includes landfill gas engines.

6a Describe the basic measures for improving how energy efficient your activities are

Document reference n/a

6b Provide a breakdown of any changes to the energy your activities use and create

Document reference n/a

6c Have you entered into, or will you enter into, a climate change levy agreement?

No ☐ Describe the specific measures you use for improving your energy efficiency.

Document reference n/a

Yes ☐ Please give the date you entered (or the date you expect to enter) into the agreement.

Please also provide documents that prove you are taking part in the agreement.

Document reference

6d Tell us about, and justify your reasons for, the raw and other materials, other substances and water you will use

Document reference n/a

6e Describe how you avoid producing waste in line with Council Directive 2008/98/EC on waste

If you produce waste, describe how you recover it.

If it is technically and financially impossible to recover the waste, describe how you dispose of it while avoiding or reducing any effect it has on the environment.

Document reference n/a

7 Medium Combustion Plant

7a Is the total aggregated thermal input of the MCP 20 MW thermal or more?

No ☐

Yes ☐ You must either submit a report which shows how your MCP also meets the requirements of Schedule 24 of the Environmental Permitting Regulations which implement the relevant requirements of the Energy Efficiency Directive (2012/27/EU), or an explanation of why Schedule 24 does not apply in your case.

Tell us the reference for this document, below.

Document reference

7b Is the MCP either (a) an individual unit greater than or equal to 20MWth, or (b) one that burns waste biomass as described in Article 3(18) (b) of MCPD?

Yes ☐ An individual unit greater than or equal to 20MWth *Go to section 7c*

Yes ☐ Burns waste biomass as described in Article 3(18) (b) of MCPD. *Go to section 7c*

No ☐

7c Do any of the MCPs on site meet the criteria of a Chapter 1, Section 1.1 Part B activity or Chapter 5, Section 5.1 Part B activity?

Yes ☐ Chapter 1, Section 1.1 Part B activity.

Yes ☐ Chapter 5, Section 5.1 Part B activity.

No ☐

If you have ticked 'Yes' to either Chapter 1 or 5 above you must complete a Best Available Techniques assessment in line with the relevant Environmental Permitting technical guidance note. Tell us the reference for this document, below.

Document reference

8 Combined Medium Combustion Plant/Specified Generators

8a Is the total aggregated thermal input of the Specified Generators 20 MW thermal or more?

No ☒

Yes ☐ You must either submit a report which shows how your MCP/Specified Generator also meets the requirements of Schedule 24 of the Environmental Permitting Regulations which implement the relevant requirements of the Energy Efficiency Directive (2012/27/EU) or an explanation of why Schedule 24 does not apply in your case.

Tell us the reference for this document, below.

Document reference

8b Is the Specified Generator an individual unit with thermal input greater than or equal to 20 MWth?

No ☒ Now complete all relevant appendices.

Yes ☐ *Go to section 8c*

8c Does the Specified Generator meet the criteria of a Chapter 1, Section 1.1 Part B activity?

No ☒ Now complete all relevant appendices.

Yes ☐ This is a Chapter 1, Section 1.1 Part B activity.

You must complete a Best Available Techniques assessment in line with the relevant Environmental Permitting technical guidance note. Tell us the reference for this document, below.

Document reference

Appendix 1 – Specific questions for the combustion sector (Not for use for Medium Combustion Plant)

1 Identify the type of fuel burned in your combustion units (including when your units are started up, shut down and run as normal). If your units are dual fuelled (that is, use two types of fuel), list both the fuels you use

Fill in a separate table for each installation.

Installation reference			
Type of fuel	When run as normal	When started up	When shut down
Coal			
Gas oil			
Heavy fuel oil			
Natural gas			
WID waste			
Biomass (see notes 1 and 2 below)			
Biomass (see notes 1 and 2 below)			
Biomass (see notes 1 and 2 below)			
Biomass (see notes 1 and 2 below)			
Biomass (see notes 1 and 2 below)			
Other			

Notes

1 Not covered by Industrial Emissions Directive 2010/75/EU.

2 'Biomass' is referred to in The Renewables Obligation Order 2002 (SI 2002 No. 914).

Give extra information if it helps to explain the fuel you use.

Document reference

2 Give the composition range of any fuels you are currently allowed to burn in your combustion plant

Fill in a separate table for each installation.

Installation reference	Click here to enter text.				
Parameter	Unit	Fuel 1	Fuel 2	Fuel 3	Fuel 4
Maximum percentage of gross thermal input	%				
Moisture	%				
Ash	% wt/wt dry				
Sulphur	% wt/wt dry				
Chlorine	% wt/wt dry				
Arsenic	% wt/wt dry				
Cadmium	% wt/wt dry				
Carbon	% wt/wt dry				
Chromium	% wt/wt dry				
Copper	% wt/wt dry				

Hydrogen	% wt/wt dry				
Lead	% wt/wt dry				
Mercury	% wt/wt dry				
Nickel	% wt/wt dry				
Nitrogen	% wt/wt dry				
Oxygen	% wt/wt dry				
Vanadium	mg/kg dry				
Zinc	mg/kg dry				
Net calorific value	MJ/kg				

3 If NOx factors are necessary for reporting purposes (that is, if you do not need to monitor emissions), please provide the factors associated with burning the relevant fuels

Fill in a separate table for each installation.

Installation reference	
Fuel	NOx factor (kgt–1)
Fuel 1	
Fuel 2	
Fuel 3	
Fuel 4	
Note: kgt–1 means kilograms of nitrogen oxides released for each tonne of fuel burned	

4 Will your combustion plant be subject to Chapter III of the Industrial Emissions Directive 2010/75/EU? (see Government guidance)

No ☐ This Annex is complete.

Yes ☐

5 Is your plant (tick an option)

an existing plant (a plant licensed before 1 July 1987)? ☐

a new plant (a plant licensed on or after 1 July 1987 but before 27 November 2002, or a plant for which an application was made before 27 November 2002 and which was put into operation before 27 November 2003)? ☐

a new-new plant (a plant for which an application was made on or after 27 November 2002)? ☐

6 If you run more than one type of plant or a number of the same type of plant on your installation, please list them in the table below.

Fill in a separate table for each installation.

Installation reference	
Type of plant	Number within installation
Existing	
New	
New-new	
Gas turbine (group A)	

Gas turbine (group B)	

7 If you run an existing plant, have you submitted a declaration for the 'limited life derogation' set out in Article 33 of Chapter III of the Industrial Emissions Directive?

No ☐ *Go to section 9*

Yes ☐

8 Have you subsequently withdrawn your declaration?

No ☐

Yes ☐

9 List the existing large combustion plants (LCPs) which have annual mass allowances under the National Emission Reduction Plan (NERP), and those with emission limit values (ELVs) under the LCPD

Installation reference	
LCPs under NERP	LCPs with ELVs

10 Do you meet the monitoring requirements of Chapter III of the Industrial Emissions Directive?

Yes ☐

Tell us how you meet the monitoring requirements of Chapter III and give us the reference for this document.

Document reference

Appendix 2 – Specific questions for the chemical sector

1 Please provide a technical description of your activities

The description should be enough to allow us to understand:

- the process;
- the main plant and equipment used for each process;
- all reactions, including significant side reactions (that is, the chemistry of the process);
- the material mass flows (including by products and side streams) and the temperatures and pressures in major vessels;
- the all emission control systems (both hardware and management systems), for situations which could involve releasing a significant amount of emissions – particularly the main reactions and how they are controlled;
- a comparison of the indicative BATs and benchmark emission levels standards in Technical Guidance Notes (TGNs) EPR 4.01, EPR 4.02 and EPR 4.03, and chemical sector BREFs.

Document reference

2 If you are applying for a multi-purpose plant, do you have a multi-product protocol in place to control the changes?

No ☐

Yes ☐ Provide a copy of your protocol to accompany this application

Document reference

3 Does Chapter V of the Industrial Emissions Directive (IED) apply to your activities?

No ☐ This Annex is complete.

Yes ☐ Fill in Table 3a – listing each of the activities controlled under the IED.

Table 3a – activities controlled under the IED.	
Installation reference	
Activities	

3b Describe how the list of activities in question 3a above meets the requirements of the IED

Document reference

Appendix 3 – Specific questions for the intensive farming sector

1 For each type of livestock, tell us the number of animal places you are applying for

Installation reference	
Type of livestock	Number of places

2 Is manure or slurry exported from the site?

No ☐

Yes ☐

3 Is manure or slurry spread on the site?

No ☐

Yes ☐

Appendix 4 – Specific questions for the clinical waste sector

If you are applying for an activity covered by the Waste Incineration Directive and wish to accept clinical waste you should fill in questions 1, 2 and 3 of this appendix.

Note: If your procedures are fully in line with the standards set out in EPR5.07 then you should tick the 'yes' box and provide the procedure reference. There is no need for you to supply a copy of the procedure.

1 Are pre-acceptance procedures in place that are fully in line with the appropriate measures set out in section 2.2 of EPR 5.07 and which are used to assess a waste enquiry before it is accepted at the installation?

No ☐ Provide justification for departure from EPR 5.07 and submit a copy of the procedures

Document reference

Yes ☐ Document reference

2 Are waste acceptance procedures in place that are fully in line with the appropriate measures set out in section 2.2 of EPR 5.07, and which are used to cover issues such as loads arriving and being inspected, sampling waste, rejecting waste, and keeping records to track waste?

No ☐ Provide justification for departure from EPR 5.07 and submit a copy of the procedures

Document reference

Yes ☐ Document reference

3 Are waste storage, handling and dispatch procedures, and infrastructure in place that are fully in line with the appropriate measures set out in section 3.2 of EPR 5.07?

No ☐ Provide justification for departure from EPR 5.07 and submit a copy of the procedures

Document reference

Yes ☐ Document reference

4 Are monitoring procedures in place that are fully in line with the appropriate measures set out in section 3.3 of EPR 5.07?

No ☐ Provide justification for departure from EPR 5.07 and submit a copy of the procedures

Document reference

Yes ☐ Document reference

5 Are you proposing to either

- accept an additional waste not included in Table 2.1 of section 2.1 of EPR 5.07, or
- apply a permitted activity to a waste other than that identified for that waste in Table 2.1?

No ☐

Yes ☐ Provide justification: Document reference

6 Please provide a summary description of the treatment activities undertaken on the installation. This should cover the general principles set out in section 2.1.4 of EPR 5.07

Document reference

7 Please provide layout plans detailing the location of each treatment plant and main plant items and process flow

Document reference

Appendix 5 – Specific questions for the hazardous and non-hazardous waste recovery and disposal sector

Note: If your procedures are fully in line with the standards set out in SGN 5.06 then you should tick the 'yes' box and provide the procedure reference. There is no need for you to supply a copy of the procedure.

1 Are pre-acceptance procedures in place that are fully in line with the appropriate measures set out in section 2.1.1 of SGN 5.06, and which are used to assess a waste enquiry before it is accepted at the installation?

No ☐ Provide justification for departure from SGN 5.06 and submit a copy of the procedures

Document reference

Yes ☐ Document reference

2 Are waste acceptance procedures in place that are fully in line with the appropriate measures set out in section 2.1.2 of SGN 5.06, and which are used to cover issues such as loads arriving and being inspected, sampling waste, rejecting waste, and keeping records to track waste?

No ☐ Provide justification for departure from SGN 5.06 and submit a copy of the procedures

Document reference

Yes ☐ Document reference

3 Are waste storage procedures and infrastructure in place that are fully in line with the appropriate measures set out in section 2.1.3 of SGN 5.06?

No ☐ Provide justification for departure from SGN 5.06 and submit a copy of the procedures

Document reference

Yes ☐ Document reference

4 Provide a layout plan giving details of where the installation is based, the infrastructure in place (including areas and structures for separately storing types of waste which may be dangerous to store together) and capacity of waste storage areas and structures

Document reference

5 Provide a summary of the treatment activities carried out on the installation. This should cover the general principles set out in section 2.1.4 of SGN 5.06 and the specific principles set out in sections 2.1.5 to 2.1.15 as appropriate of SGN 5.06

Document reference

6 Provide layout plans giving details of where each treatment plant is based, the main items at each plant, and process flow diagrams for the treatment plant

Document reference

Appendix 6 – Specific questions for the waste incineration sector

If you are proposing to accept clinical waste please also fill in questions 1, 2 and 3 of appendix 4 above.

1a Do you run incineration plants as defined by Chapter IV of the Industrial Emissions Directive (IED)?

No ☐ You do not need to answer any other questions in this appendix.

Yes ☐ WID applies

1b Are you subject to IED as an incinerator or co-incinerator?

As an incinerator ☐

As a co-incinerator ☐

2 Do any of the installations contain more than one incineration line?

No ☐ *Go to section 4*

Yes ☐

3 How many incineration lines are there within each installation?

Fill in a separate table for each installation

Installation reference	
Number of incineration lines within the installation	
Reference identifiers for each line	

You must provide the information we ask for in questions 4, 5 and 6 below in separate documents. The information must at least include all the details set out in section 2 ('Key Issues') of TGN S5.01 (under the subheading 'European legislation and your application for an EP Permit').

4 Describe how the plant is designed, equipped and will be run to make sure it meets the requirements of IED, taking into account the categories of waste which will be incinerated

Document reference

5 Describe how the heat created during the incineration and co-incineration process is recovered as far as possible (for example, through combined heat and power, creating process steam or district heating)

Document reference

6 Describe how you will limit the amount and harmful effects of residues and describe how they will be recycled where this is appropriate

Document reference

For each line identified in question 3, answer questions 7 to 13 below

Question 3 identifier, if necessary

7 Do you want to take advantage of the Article 45 (1)(f) allowance (see below) if the particulates, CO or TOC continuous emission monitors (CEM) fail?

No ☐ *Go to section 8*

Yes ☐ This article allows 'abnormal operation' of the incineration plant under certain circumstances when the CEM for releases to air have failed. Annex VI, Part 3(2) sets maximum half hourly average release levels for particulates (150mg/m3), CO (normal ELV) and TOC (normal ELV) during abnormal operation.

Describe the other system you use to show you keep to the requirements of Article 13(4) (for example, using another CEM, providing a portable CEM to insert if the main CEM fails, and so on).

8 Do you want to replace continuous HF emission monitoring with periodic hydrogen fluoride (HF) emission monitoring by relying on continuous hydrogen chloride (HCl) monitoring as allowed by IED Annex VI, Part 6 (2.3)?

Under this you do not have to continuously monitor emissions for hydrogen fluoride if you control hydrogen chloride and keep it to a level below the HCl ELVs.

No ☐ *Go to section 9*

Yes ☐ Please give reasons for doing this.

9 Do you want to replace continuous water vapour monitoring with pre-analysis drying of exhaust gas samples, as allowed by IED Annex VI, Part 6 (2.4)?

Under this you do not have to continuously monitor the amount of water vapour in the air released if the sampled exhaust gas is dried before the emissions are analysed.

No ☐

Yes ☐ Please give reasons for doing this.

10 Do you want to replace continuous hydrogen chloride (HCl) emission monitoring with periodic HCl emission monitoring, as allowed by IED Annex VI, Part 6 (2.5), first paragraph?

Under this you do not have to continuously monitor emissions for hydrogen chloride if you can prove that the emissions from this pollutant will never be higher than the ELVs allowed.

No ☐

Yes ☐ Please give reasons for doing this.

11 Do you want to replace continuous HF emission monitoring with periodic HF emission monitoring, as allowed by IED Annex VI, Part 6 (2.5), first paragraph?

Under this you do not have to continuously monitor emissions for hydrogen fluoride if you can prove that the emissions from this pollutant will never be higher than the ELVs allowed.

No ☐

Yes ☐ Please give reasons for doing this.

12 Do you want to replace continuous SO_2 emission monitoring with periodic sulphur dioxide (SO_2) emission monitoring, as allowed by IED Annex VI, Part 6 (2.5), first paragraph?

Under this you do not have to continuously monitor emissions for sulphur dioxide if you can prove that the emissions from this pollutant will never be higher than the ELVs allowed.

No ☐

Yes ☐ Please give reasons for doing this.

13 If your plant uses fluidised bed technology, do you want to apply for a derogation of the CO WID ELV to a maximum of 100 mg/m_3 as an hourly average, as allowed by IED Annex VI, Part 3?

No ☐

Does not apply ☐

Yes ☐ Please give reasons for doing this.

Appendix 7 – Specific questions for the landfill sector

1 Provide your Environmental Setting and Installation Design (ESID) report

Document reference	

2 Provide your hydrogeological risk assessment (HRA) for the site

Document reference	

3 Provide your stability risk assessment (SRA) for the site

Document reference	

4 Provide your landfill gas risk assessment (LFGRA) for the site

Document reference	

Templates for these four reports can be found using the links on our Guidance Webpages.

5 Provide your proposed plan for closing the site and your procedures for looking after the site once it has closed

Document reference	

Appendix 8 – Medium Combustion Plant ('MCP') and combined MCP/Specified Generator Check List

Please provide the information below for each new medium combustion plant or combined MCP/Specified Generator as identified in Annex I of the Medium Combustion Plant Directive (EU/2015/2193).

Questions	**Answers**		
1 What is the MCPD identifer[1] (As shown on site plan)?			
2 What is the rated thermal input (MWth) of the medium combustion plant. Where there is more than one medium combustion plant, please provide the individual and aggregated total thermal input for all plants.		MWth (only one)	
		MWth (If more than one)	
3 Please indicate the type of medium combustion plant by ticking the appropriate option	Diesel engine		☐
	Gas turbine		☐
	Dual fuel engine		☐
	Other engines		☐
	Other medium combustion plant		☐
4 Please state the type of fuels used	Fuel type	Tick relevant options	Share of fuels used (%)
	Solid Biomass	☐	
	Other Solid Fuels	☐	
	Gas Oil (Diesel)	☐	
	Liquid fuels other than gas oil	☐	
	Natural Gas	☐	
	Gaseous fuels other than natural gas	☐	
5 Please state the start date of the operation of the Medium Combustion Plant. Or where the exact start date is unknown, provide proof that the operation started before 20th December 2018.		Start date	
	Or, if start date unknown; provide proof:		
		Document reference	
6 Please state the sector of activity of the Medium Combustion Plant or the facility in which it is applied (NACE code[2])			
7 Please state the expected number of annual operating hours of the Medium Combustion Plant, and average load in use.		Hours	
		Average load in use	
8 Please confirm that where the option of exemption under article 6(3) or article 6(8) of the medium combustion plant directive is used, the medium combustion plant will not be operated more than the number of hours referred to in those paragraphs.	Yes, I/We confirm that where the option of exemption under article 6(3) or article 6(8) of the medium combustion plant directive is used, the medium combustion plant will not be operated more than the number of hours referred to in those paragraphs		☐

9 Please confirm that the operator name, registered office address and in the case of stationary medium combustion plant, the address where the plant is located is as stated in Form Part A and Form Part B1.	Yes, I/We confirm that the operator name, registered office address and in the case of stationary medium combustion plants, the address where the plant is located is as stated in Form Part A and Form Part B1.	☐

Explanatory notes to checklist

1. Identifier – the MCP must be traceable via a serial number or other unique identifier, name plate, manufacturer and/or model.

2. NACE code* means Nomenclature of Economic Activities and is the European statistical classification of economic activities.

Appendix 9 – Specific questions for Specified Generators

Please provide the information below for **each** generator identifier, which comprises the Specified Generator (Excluded generators are not required to be included in this appendix).

If your application is for a specified generator that is also a new medium combustion plant, you will also need to complete appendix 8 for each new medium combustion plant.

Questions	**Answers**	
1 What is the generator identifier[1] (As shown on the site plan)?	2 x CAT 3520 and 1 x CAT 3516	
2 What is the rated thermal input (MW) of the generator?	13.17	MWth
3 Please provide details of any capacity agreement(s) or balancing service agreement(s) for each individual generator, i.e. if they are Tranche A or Tranche B generators.	Tranche B	
4 Please state the total rated thermal input of all generators on site.	13.17	MWth
5 Please indicate if the operating hours for each individual Tranche A generator be restricted to 50 hour or less per year.	Yes	☐
	No	☐
6 Please indicate if the aggregated operating hours for all Tranche A generators be restricted to 50 hour or less per year.	Yes	☐
	No	☐
7 Will the NOx emissions of any individual Tranche A generator will be greater than 500mg/Nm3 per year (STP, 15% O_2)?	Yes	☐
	No	☐

Explanatory notes to checklist

1. Identifier – the gnerator must be traceable via a serial number or other unique identifier, name plate, manufacturer and/or model

Application for an environmental permit: Part F1 – Opra, charges and declarations

Fill in this part for all applications for installations, waste operations, mining waste operations and groundwater discharges onto land.

Please check that this is the latest version of the form available from our website.

For applications for water discharge and point source groundwater discharge activities you need to fill in part F2 instead.

Please read through this form and the guidance notes that came with it. All relevant guidance documents can be found on our website.

Contents

1 Working out charges (you must fill in this section)

You have to submit an application fee with your application. You can find out the charge by looking at our current environmental permitting charging scheme. This can be found on our 'How we regulate you' webpages. Please remember that the charges are revised on 1 April each year and that there is an annual subsistence charge (for site based permis) to cover the costs we incur in the ongoing regulation of the permit.

Examples: We have included examples to help you complete the table. The Tier 2 charge example is for an application for a 'New standard rule' permit. The Tier 3 charge example is for an installation Opra based charge for a normal variation (multiplier) application.

Note: for Opra charged Tier 3 Facilities you also need to complete an Opra profile (see section 2).

Table 1 – Working out charges				
Type of application	Specified Generator			
	Summary of charges			
Tier 2 facilities (including Part A(2) and Part B)	Charge identifier	Number of facilities	Charge for each facility (£)	Charges due (£)
EXAMPLE: SR2010 No12	S060A (W)	1	1,630.00	1,630.00
Bespoke Specified Generators		1	£4,056	£4,056
Tier 3 facilities				
EXAMPLE: Total Opra charging score for installations	90	× charge multiplier	57	5,130.00
Total Opra charging score for installations		× charge multiplier		
Total Opra charging score for waste operations		× charge multiplier		
Total Opra charging score for mining waste facilities				
Other charges (such as one-off assessments or fixed charge applications etc.)				
			Total charges due	£4,056

2 Opra profile (does not apply to standard facilities, or other tier 2 permit applications)

If you are submitting a bespoke application, you must include a completed electronic copy in Excel of the *current* Opra spreadsheet. You can find the current Opra spreadsheet in the 'Our charges' section on our 'How we regulate you' webpages.

For all variations, full and partial surrenders: you will need to submit a copy of your current Opra profile based on your existing profile, not a new profile following the variation or surrender.

For transfers: you will need to submit a revised Opra profile to include your own operator performance. Note: this will not change the set transfer fee.

Important: your Opra profile (score) must match our records. If you are unsure about your current Opra profile (score), you should talk to your regulatory officer before submitting your application.

Tick this box to confirm that you have included the electronic OPRA spreadsheet ☐

3 Payment

3a How do you want to pay?

Tick an option below to show how you will pay.

Electronic transfer (for example, BACS)	☒	*Go to section 3b*
Credit or Debit card	☐	*Go to section 3c*
Cheque	☐	*Go to section 3d*
Postal order	☐	*Go to section 3d*

3b Paying by electronic transfer

If you choose to pay by electronic transfer use the following information to make your payment.

Company name:	Natural Resources Wales
Company address:	Income Dept., PO BOX 663, Cardiff, CF24 0TP
Bank:	RBS
Address:	National Westminster Bank Plc, 2 ½ Devonshire Square, London, EC2M 4BA
Sort code:	60-70-80
Account number:	10014438

Reference number

You can use any reference number but we prefer the number to be 'EPR' followed by the first nine letters of your organisation name followed by a four-digit number.

For example, for a company named Joe Bloggs Ltd, the reference number might be EPRJOEBLOGGS0001. (Remember you can use any four-digit number at the end.)

The reference number you will provide will appear on our bank statements so we can check your payment. We may need to contact your bank to make sure the reference number is quoted correctly.

You should also email your payment details and payment reference number to banking.team@naturalresourceswales.gov.uk / banking.team@cyfoethnaturiolcymru.gov.uk or fax it to 0300 065 3001 and enter it in the space provided below.

BACS reference	EPRCONRADSAN0001
Amount paid	£4,056

Making payments from outside the UK

These details have changed. If you are making your payment from outside the United Kingdom (which must be received in sterling), our IBAN number is GB70 NWBK6070 8010 0144 38 and our SWIFT/BIC number is NWBKGB2L.

If you do not quote your payment reference number, there may be a delay in processing your payment and application.

3c Paying by credit or debit card

If you are paying by credit or debit card, please fill in the separate form CC1.

You can download this from our website or you can ask for one of our customer service providers to send one by post. We will destroy your card details once we have processed your payment. We can accept payments by Visa, MasterCard or Maestro UK card only.

3d Paying by cheque or postal order

You should make cheques or postal orders payable to Natural Resources Wales and they should be marked 'A/c Payee'.

We *will not* accept post-dated cheques (cheques with a future date written on them).

Cheque/ postal order number	
Amount paid	

4 The Data Protection Act 1998 and General Data Protection Regulations

We, the Natural Resources Body for Wales (hereafter "Natural Resources Wales"), will process the information you provide so that we can:

- deal with your application;
- make sure you keep to the conditions of the licence, permit or registration;
- process renewals; and
- keep the public registers up to date.

We may also process or release the information to:

- offer you documents or services relating to environmental matters;
- consult the public, public organisations and other organisations (for example, the Health and Safety Executive, local authorities, the emergency services, the Department for Environment, Food and Rural Affairs) on environmental issues;
- carry out research and development work on environmental issues;
- provide information from the public register to anyone who asks;
- prevent anyone from breaking environmental law, investigate cases where environmental law may have been broken, and take any action that is needed;
- assess whether customers are satisfied with our service, and to improve our service; and
- respond to requests for information under the Freedom of Information Act 2000 and the Environmental Information Regulations 2004 (if the Data Protection Act allows). We may pass the information on to our agents or representatives to do these things for us.

5 Confidentiality and national security

We will normally put all the information in your application on a public register of environmental information. However, we may not include certain information in the public register if this is in the interests of national security, or because the information is confidential

Confidentiality

You can ask for information to be made confidential by enclosing a letter with your application giving your reasons. If we agree with your request, we will tell you and not include the information in the public register. If we do not agree with your request, we will let you know how to appeal against our decision, or you can withdraw your application.

Only tick the box below if you wish to claim confidentiality for your application.

Please treat the information in my application as confidential ☐

Tick the box to confirm you have provided evidence to support your confidentiality claim and give us the document reference, below. ☐

Document reference

National security

You can tell the Welsh Ministers that you believe including information on a public register would not be in the interests of national security.

You must enclose a letter with your application telling us that you have told the Welsh Ministers and you must still include the information in your application. We will not include the information in the public register unless the Welsh Ministers decides that it should be included.

You can find guidance on national security in 'Core Environmental Permitting Guidance' published by Defra and available via the .Gov website.

You cannot apply for national security via this application.

6 Application checklist (you must fill in this section)

Tell us about the supporting evidence and information you have sent with this application.

Application fee - You must submit the correct application fee in line with our current charging scheme.

Tick the box to say you have included the correct fee. ☐

List all the documents you have included in Table 2. Please see the guidance notes for examples on how to complete the checklist.

If the relevant information for a question forms part of a larger document, please specify the relevant section(s) of the document. This will speed up the process of checking your application and making decisions.

If necessary, continue on a separate sheet and tell us the reference you have given the document below.

Document reference 777292-MLM-ZZ-XX-RP-J-0004

Table 2 – application checklist

Question reference	Document title/ reference	Document section
All questions	Non-Technical Summary	777292-MLM-ZZ-XX-RP-J-0004

7 Declaration

You must read this section before making the declaration and sending your form to us.

For transfer applications - Both you and the person receiving the permit must make the declaration.

Section 7d must be completed by the current holder *and* Section 7e must be completed by the proposed new holder.

A relevant person should make the declaration. You must be a relevant person or have the authority of a relevant person to sign this application on their behalf.

Relevant people means each applicant, and in the case of a company, a director, manager, company secretary or any similar officer or employee listed on current appointments in Companies House. In the case

of a Limited Liability Partnership (LLP), it includes any partner. If the permit holder is an organisation of individuals, each individual (or individual trustee) must complete the declaration.

To simplify and speed up the application process we recommend that the declaration is filled in by an officer of a company or one of the partners in a Limited Liability Partnership (LLP).

If you wish a manager, employee or consultant etc. to sign the declaration on behalf of a relevant person, we will need written confirmation from a relevant person; that is, an officer of the company, a partner in the LLP or the individual, confirming that the person has the authority to fill in the declaration.

If you are joint permit holders you should each fill in your own declaration. We have provided extra spaces for this below. Please send in a separate sheet with your application if you need more room for signatories.

Where the operator is the subject of any insolvency procedure, the declaration must be filled in by the official receiver/appointed insolvency practitioner.

7a Are you signing the form on *behalf of* a relevant person?

If you are *not* a relevant person, but want to sign the application on their behalf, you must include confirmation that you can do this.

I have included written confirmation from a relevant person to confirm I can sign on their behalf. ☐

7b Does your application include a standard facility?

If your application includes a standard facility, you also need to confirm that you are able to meet all relevant criteria of the standard rule set/sets for which you are applying.

I confirm that my standard facility will fully meet the rules that I have applied for. ☐

7c Does your application include ecological survey information?

If your application includes ecological survey information, please see the guidance notes on part F1 and tick the box below to confirm that you have no issue with us using information from any ecological survey you have supplied with your application.

I confirm I am happy for the ecological survey information I have supplied to be used as set out in the guidance. ☐

7d Declaration

If you're transferring the permit, the current holder or holders should sign this section of the declaration, and the proposed new holder or holders of the permit should sign the declaration in section 7e.

If you knowingly or recklessly make a statement which is false or misleading to help you get an environmental permit (for yourself or another person), you are committing an offence under the Environmental Permitting (England and Wales) Regulations 2016.

I declare that the information in this application is true to the best of my knowledge and belief. I understand that this application may be refused or approval withdrawn if I give false or incomplete information.

I understand that if I knowingly or recklessly make a false or misleading statement:

- **I may be prosecuted; and**
- **if convicted, I may have to pay a fine and/or go to prison.**

By signing below, you are confirming that you understand and agree with the declaration above.

Title	Mr	
First name	Steven	
Last name	Hardman	
On behalf of (if relevant)	Conrad (Sandycroft) Ltd	
Today's date	17/12/2018	

If you knowingly or recklessly make a statement which is false or misleading to help you get an environmental permit (for yourself or another person), you are committing an offence under the Environmental Permitting (England and Wales) Regulations 2016.

I declare that the information in this application is true to the best of my knowledge and belief. I understand that this application may be refused or approval withdrawn if I give false or incomplete information.

I understand that if I knowingly or recklessly make a false or misleading statement:

- **I may be prosecuted; and**
- **if convicted, I may have to pay a fine and/or go to prison.**

By signing below, you are confirming that you understand and agree with the declaration above.

Title		
First name		
Last name		
On behalf of (if relevant)		
Today's date		

7e Declaration for the person or persons *receiving* the permit (transfers only)

The persons 'receiving the permit' is the proposed new permit holder.

Note: If you cannot trace a person or persons holding the permit you may be able to transfer the permit without their declaration (in section 7d above). Please contact us to discuss this and supply evidence in your application to confirm you are unable to trace one or all of the permit holders.

If you knowingly or recklessly make a statement which is false or misleading to help you get an environmental permit (for yourself or another person), you are committing an offence under the Environmental Permitting (England and Wales) Regulations 2016.

I declare that the information in this application is true to the best of my knowledge and belief. I understand that this application may be refused or approval withdrawn if I give false or incomplete information.

I understand that if I knowingly or recklessly make a false or misleading statement:

- **I may be prosecuted; and**
- **if convicted, I may have to pay a fine and/or go to prison.**

By signing below, you are confirming that you understand and agree with the declaration above.

Title		
First name		
Last name		
On behalf of (if relevant)		
Today's date		

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By signing below, you are confirming that you understand and agree with the declaration above.

Title		
First name		
Last name		
On behalf of (if relevant)		
Today's date		

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