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PAS 111:2012

Specification for the requirements and test methods for processing waste wood



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Foreword

This Publicly Available Specification (PAS 111:2012) has been commissioned by WRAP¹⁾ in collaboration with the British Standards Institution (BSI).

The aim of this PAS is to provide a specification for individuals and organizations recovering and processing post-industrial and post-consumer waste wood into wood products such that potential customers will be assured that they are procuring a material of consistent and verifiable quality.

If the minimum specification is met or exceeded then the material is PAS 111 compliant; if the minimum requirements are not met, then the material is non-compliant, even if an end user's specification is met.

The following markets account for the majority of recovered wood consumed in the UK and are covered by PAS 111:

- Panelboard manufacture²⁾;
- Biomass energy generation³⁾;
- Animal bedding;
- Mulches;
- Equine surfaces;
- Pathways and coverings; and
- Industrial and commercial applications.

¹⁾ WRAP (Waste & Resources Action Programme) works in England, Scotland, Wales and Northern Ireland to help businesses and individuals reap the benefits of reducing waste, develop sustainable products and use resources in an efficient way. www.wrap.org.uk.

²⁾ For convenience, the term "panelboard manufacture" is used in this PAS, however, the term "wood-based panel manufacture" is more accurate.

³⁾ "Biomass energy generation" includes treatment processes that convert the energy in biomass into useful forms of energy, including electrical power, process steam, hot water, and combined heat and power processes.

Under current legislation, all forms of waste wood covered by this PAS are classified as waste until incorporated into an end use application. It follows that handling, transportation storage and use of these materials must comply with all regulations arising from the Waste Framework Directive (WFD)⁴⁾ [1].

NOTE 1 *Regulators may provide guidance on waste legislation and how it applies to waste wood e.g. the Environment Agency has a regulatory position statement which advises when wood is considered to be waste and what regulatory controls apply.*
www.environment-agency.gov.uk/static/documents/Research/PS_005_Regulation_of_wood_v3.0.pdf.

NOTE 2 *The Waste Protocols Project is working on the development of a Quality Protocol where waste wood processed in accordance with its requirements for specific end-uses would be considered a non-waste.*

Acknowledgement is given to the following organizations that have been instrumental in the development of this PAS:

- Association for Organics Recycling (AFOR);
- AW Jenkinson Forest Products;
- Consulting With Purpose;
- Environment Agency;
- Fichtner Consulting Engineers Limited;
- Hadfield Wood Recyclers & UK Wood Recycling;
- National Farmers' Union (NFU);
- Sembcorp Utilities (UK);
- SITA Power;
- Timber Research and Development Association;
- Wood Panel Industries Federation (WPIF);
- Wood Protection Association (WPA);
- Wood Recyclers' Association (WRA).

⁴⁾ EU Waste Framework Directive (2008/98/EC) [1].

Wider comments from other interested parties were invited by BSI. The expert contributions made by organizations and individuals consulted in the development of this PAS are gratefully acknowledged.

Technical authorship for this PAS has been provided by Oakdene Hollins⁵).

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This PAS will be reviewed at intervals not exceeding two years and any amendments arising from that review may be published as an amended PAS and publicized in *Update Standards*. Feedback on this PAS will be gratefully received.

This PAS is not to be regarded as a British Standard. It will be withdrawn upon publication of its contents in, or as, a British Standard.

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Publishing information

Presentational conventions

The provisions of this PAS are presented in upright, roman type. Its requirements are expressed in sentences in which the principal auxiliary verb is shall.

Commentary, explanation (guidance) and general informative material is presented in smaller italic type, and does not constitute normative elements (requirements). Much of this appears as notes in this PAS, each beginning with NOTE, and other such material appears in the annexes marked informative.

Requirements in this PAS are drafted in accordance with *The BSI guide to standardization – Section 2: Rules for the structure, drafting and presentation of British Standards*.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. In addition, nothing in this publication implies that any product is fit for any particular end purpose.

Users are responsible for the correct application of the PAS.

Compliance with a PAS cannot confer immunity from legal obligations.

⁵) Oakdene Hollins Limited is an independent company specializing in consultancy and research in sustainable technologies, waste management and remanufacturing (www.oakdenehollins.co.uk).

Introduction

In 2010 the UK's annual arising of waste wood generated by households and businesses was estimated at 4.1 million tonnes⁶⁾. About 2 million tonnes were diverted or recovered from the waste stream for recycling or energy recovery, but the remainder continues to be sent to landfill, resulting in considerable environmental and economic costs.

NOTE WRAP's Closed Loop Economy Directorate is working with the wood recycling industry to boost the landfill diversion rate for waste wood.

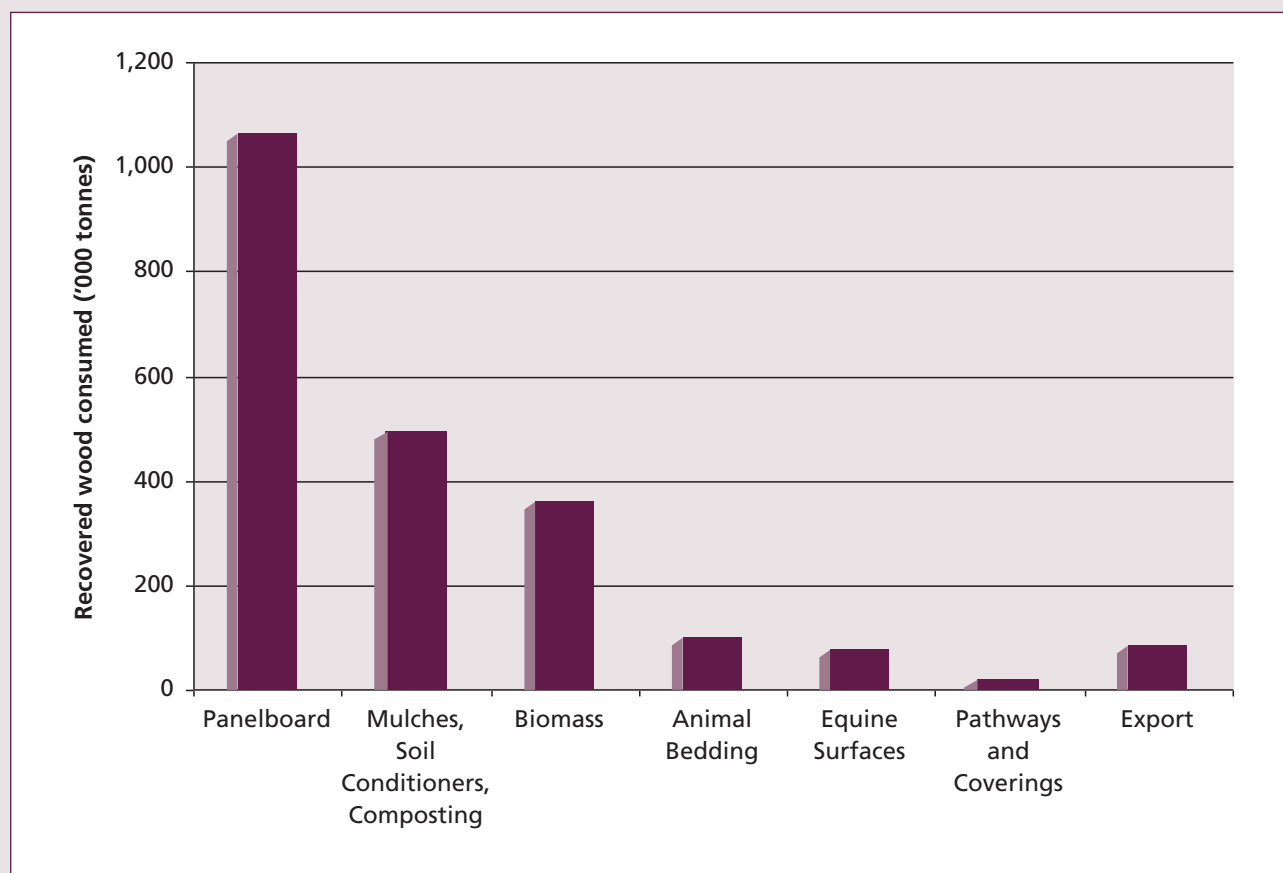
As Figure 1 shows, the panelboard manufacturing industry recycles most of the recovered material, with biomass energy generation and animal bedding production being the next largest markets⁷⁾. A large number of wood reprocessing companies of varying sizes and levels of sophistication have emerged in the UK to collect, grade, and process waste wood in order to supply these end markets.

Waste wood arises in a multitude of forms, and a lack of consistency in the way waste wood is accepted, graded and processed is a barrier to the industry's objective of increased recovery rates. Moreover, waste wood reprocessors supply material to a number of markets using unpublished (and sometimes confidential) agreements and, within a single end use market, specified material acceptance criteria may vary from customer to customer and from supplier to supplier. In more mature and well regulated markets, end users work with national and international standards, whereas many end users in less well regulated markets do not work to a single well recognized standard. End users need confidence in the uniformity and quality of recovered wood, while waste wood reprocessors need to know how to design their operations to meet the requirements of their customers and the regulators.



⁶⁾ WRAP, 2011. Wood Waste Market Situation Report.

⁷⁾ Wood Recyclers' Association. 2009. Waste Wood to Markets Statistics.

Figure 1 – Major end markets for recovered post-consumer waste wood in the UK, 2009

Source: Wood Recyclers' Association, Waste wood to markets statistics, 2009.

This PAS does not seek, therefore, to override other published standards or customer-specific material specifications. Its aim is to harmonize with such standards and regulations, and to establish a minimum set of criteria and processing requirements for material to be deemed to be suitable for onward sale, albeit as a waste derived material. PAS 111 only prescribes absolute limits on physical and chemical attributes of the recycled wood materials where such limits are not elsewhere established by the end user or by regulations. However, for the avoidance of doubt PAS 111 sets out minimum requirements. If the minimum is met or exceeded then the material is PAS 111 compliant; if the minimum requirements are not met, then the material is not PAS 111 compliant, even if the limits established elsewhere such as by the end user or regulations are met.

In addition, waste wood other than that from virgin sources, such as forestry operations, sawmills, etc, comes under waste controls. As such, the processing and use of the material will be subject to waste regulations in order to ensure that there is no risk to the environment or to animal or human health from these operations until such time as it has ceased to be a waste.

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1 Scope

This Publicly Available Specification (PAS) provides the definitions, minimum requirements and test methods for processing waste wood into materials intended for use in suitable new applications or end products. It is applicable to the receipt, storage, grading, preparation and testing of waste wood intended for use in end markets, as outlined in Figure 2.

The primary audience for this PAS is the waste wood processing sector comprising companies of any operational size or level of sophistication.

NOTE 1 *Secondary audiences may include individuals and organizations generating waste wood and those end users of recovered wood.*

Major end markets include:

- panelboard manufacture (more accurately known as “wood-based panel manufacture”);
- biomass energy generation; and
- animal bedding.

Other end uses for recycled wood can be divided into:

- products for placement on porous soil surfaces, where the product will degrade (e.g. mulches, or for composting), following which the material may be incorporated under the surface (see Note 2);
- products for use on sealed surfaces where the intention may be to remove or to top-up the product at a later date (e.g. equestrian surfaces, paths and some mulches); and
- industrial and commercial applications (e.g. absorbents and odour filtration).

NOTE 2 *PAS 100:2012, sets out clear processing and testing requirements for composted materials using source-segregated biowastes, including waste wood. For this reason, the processing of waste wood for compost has been excluded from the requirements of PAS 111.*

This PAS does not apply to the reuse of wood products or to the processing of pre-consumer wood waste.

NOTE 3 *The term “pre-consumer” refers to wood products and residues from the forestry and saw mill industry, and not to wood waste arising from*

manufacturing or sub-manufacturing processes⁸⁾. For the purposes of this PAS, the latter is termed “post-industrial” wood wastes as many waste wood reprocessors in the UK will be handling significant quantities of such material.

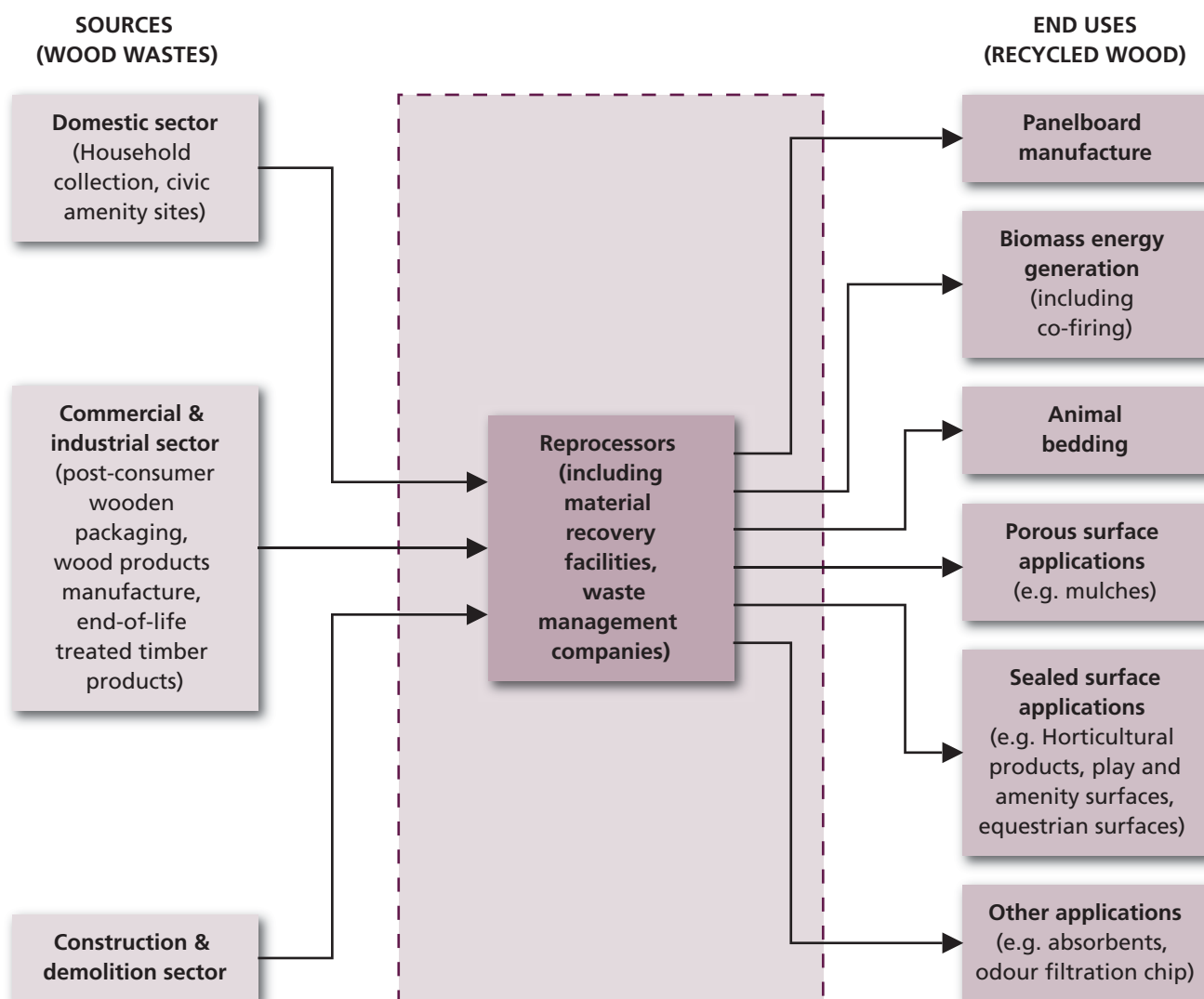
This PAS is not applicable to the growers of virgin biomass material.



⁸⁾ It is noted that ‘The European Panel Federation Standard for delivery conditions for recycled wood’ uses the term “pre-consumer wood” to refer to “by-products from processing and manufacturing sites”, i.e. “post-industrial” material in the terminology of this PAS.



Figure 2 – Applicability of the PAS in the waste wood collection and recycling supply chain



2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

PAS 104:2004, *Wood recycling in the panelboard industry*



3 Terms and definitions

For the purposes of this PAS the following terms and definitions apply.

3.1 animal bedding

material, cut or shredded, to provide bedding and soiling material for livestock and domestic pets



3.2 biomass

fuel source derived from any recently living material, commonly plant or animal matter

3.3 chipboard

panel material manufactured under pressure and heat from particles of wood

3.4 collector

organization that aggregates post-consumer wood from various sources and delivers it to the reprocessor

3.5 compost

solid particulate material that is the result of composting, that has been sanitized and stabilized and that confers beneficial effects when added to soil, used as a component of a growing medium, or is used in another way in conjunction with plants

3.6 contaminant

non-wood item, material or chemical present in or on waste wood or recycled wood product

3.7 CCA

chromated copper arsenate

3.8 equine surfaces

surface comprising wood chips upon which horses are exercised or trained

3.9 feedstock

raw material for a wood processing facility

3.10 fibreboard

NOTE See 3.43.

3.11 grading

arranging of materials into categories according to quality, weight or size

3.12 hardboard

fibreboard made in a wet process where the primary bond is typically derived from the felting of fibres which are subsequently subjected to heat and pressure

3.13 hardwood

wood from broadleaved trees

NOTE Such as oak, beech, ash, birch, maple, iroko, rubberwood; it is often darker in colour, longer lasting, denser and more decorative than the wood of coniferous trees.

3.14 hazardous waste wood

waste wood that is covered by legislation on hazardous waste and subject to the associated controls

NOTE 1 Waste wood that has been treated with CCA or creosote is likely to be classified as hazardous waste.

NOTE 2 See also 3.20 for definition of non-hazardous treated waste wood.

NOTE 3 The classification of waste wood as non-hazardous or hazardous is in most cases a complex matter requiring information on the specific chemicals in the wood and their concentration⁹⁾.

3.15 heavy metal

a member of a loosely defined subset of elements with a high relative atomic mass and which exhibit 'metallic properties'

NOTE Heavy metals can have a high impact on human and animal life, due to their persistence and propensity to accumulate.

3.16 load

material from a collection or shipment that is presented as one delivery

3.17 medium density fibreboard (MDF)

fibreboard manufactured in a dry process with the application of heat and pressure and where the primary bond is formed by the addition of a synthetic binder

3.18 moisture content

mass of water contained in wood, expressed as a percentage of the total mass of the wood, including the water

3.19 mulch

material spread and allowed to remain on the soil surface to conserve soil moisture, suppress weeds and shield soil particles from the erosive forces of raindrops and runoff

⁹⁾ See Wood Protection Association Guidance Note Dealing with treated wood related waste streams. Third edition, October 2009.

3.20 non-hazardous waste wood

waste wood that is not covered by legislation on hazardous waste and is not subject to the associated controls

NOTE See also 3.14 for definition of hazardous treated waste wood.

3.21 oriented strand board (OSB)

multi-layered board made from strands of virgin wood of a predetermined shape and thickness, together with a binder

NOTE The strands in the external layers are aligned and parallel to the board length or width; the strands in the centre layer or layers can be randomly oriented, or aligned, generally at right angles to the strands of the external layers.

3.22 packaging recovery note (PRN)

document issued by accredited reproprocessors to show how much of a certain type of recyclable packaging material has been recovered or recycled

NOTE Attention is drawn to the Producer Responsibility Obligations (Packaging Waste) Regulations 1997 [2].

3.23 packaging

products made of wood and used for the containment, protection, handling, delivery and preservation of goods, from the producer to the user or consumer

NOTE Packaging waste includes pallets, cases and drums.

3.24 panelboard

wood-based panel

NOTE Examples include chipboard, fibreboard, hardboard, MDF, OSB, particleboard, plywood and softboard.

3.25 plywood

wood-based panel consisting of an assembly of layers glued together with the direction of the grain in adjacent layers usually at right angles

3.26 porous-surface application

product derived from recovered waste wood intended for use in or on a porous surface where the product will be allowed to breakdown naturally

NOTE Examples include some mulches and soil conditioners.

3.27 post-consumer wood

waste wood that is recovered from a consumer or commercial wood product that has been used for its intended purpose by individuals, households or by commercial, industrial and institutional facilities in their role as end users of the product

NOTE Definition taken from Forest Stewardship Council (FSC).

3.28 post-industrial wood

waste wood that is derived from a manufacturing or sub-manufacturing process

3.29 pre-consumer wood

waste wood that is recovered from a process of secondary manufacture, or further downstream industry, in which the material has not been intentionally produced, is unfit for end use and not capable of being reused on-site in the same manufacturing process that generated it

3.30 reprocessor

organization that recovers wood from the waste stream and converts it into a form suitable for use in a new product or other application

NOTE Reprocessing may include size reduction and contaminant removal.

3.31 recovered wood

wood diverted from the waste stream and prepared for incorporation into a new product or other application

NOTE This definition is used here for convenience. The strict legal definition is that waste is not recovered until it has been incorporated into a new product or other application.

3.32 recycled wood

recovered wood that has been processed (usually by mechanical means) to be used in the manufacture of a new product or to produce energy

NOTE This definition is used here for convenience. The strict legal definition is that a waste derived material is not recycled until it has ceased to be waste.

3.33 reuse

reutilization of products or components, in original form

NOTE Such as the salvage and reuse of floorboards and other architectural timber.

3.34 sealed surface application

product derived from recycled wood for temporary use on a surface from where it is intended to be removed and replaced prior to the opportunity for decomposition

NOTE Examples include, play surfaces, pathways and equestrian surfaces.

3.35 sharps

man-made contaminants that are greater than 1 mm in any dimension that can cause physical injury to a person or animal who comes into contact with recovered wood, including a person who handles these materials without protective gloves

3.36 softwood

wood from coniferous trees

NOTE For example, such as Scots pine, European larch, Douglas fir and Sitka spruce.

3.37 source

organization or sector that supplies waste wood to wood reprocessors

3.38 timber

natural or sawn wood in a form suitable for building or structural purposes

3.39 treated wood

wood that has been chemically treated to enhance the performance of the original wood

NOTE 1 Such treatment may be invisible.

NOTE 2 Treatments include coatings (e.g., paint and varnish), preservatives and flame retardants. The latter two can be applied by superficial application processes (e.g. brush or spray) or by penetrating processes (e.g. timed immersion and vacuum pressure in a pressure vessel). Treatments, such as heat treatment, which do not add to the potential risk to the environment, are not covered by this definition.

3.40 waste wood

wood-based material or object which the holder discards or intends, or is required, to discard

3.41 wood

hard fibrous substance which comprises the body of trees, shrubby plants and their branches

NOTE Wood consists chiefly of the carbohydrates cellulose and lignin.

3.42 wood chips

particles of wood derived from a mechanical size reduction process

3.43 wood fibreboard

panel material, with a nominal thickness of 1.5 mm or greater, manufactured from lignocellulosic fibres with the application of heat and pressure



4 Wood waste grades, sources, and end uses

4.1 Grades of wood for recycling

Wood entering the waste stream is placed into four grades, A, B, C and D, according to its general suitability for certain end uses. The grades are dependent upon the composition, chemical treatment, physical condition, levels of non-wood contamination, and other characteristics of the waste wood.

Annex A sets out the wood grading system to be used. It describes the main forms of wood material included in each grade and lists typical sources and typical end uses or markets.

NOTE 1 *This grading system has been developed by the Wood Recyclers' Association (see Annex A).*

NOTE 2 *Waste regulatory requirements may further limit inputs for specific end-uses. Check with the regulator for the most up to date information.*

NOTE 3 *Some waste wood is subject to various forms of chemical treatment. Although some of these chemicals are no longer added to new wood products in the UK, the waste wood reprocessing industry will continue to encounter material treated with older, previously-used chemicals for many years to come, as treated materials and products reach end-of-life and are disposed of, especially when recovered from civic amenity sites¹⁰⁾*

Each end use of recycled wood will have specific requirements for wood materials which are acceptable. In particular, some treated wood waste will contain chemical compounds which are not acceptable to some end use applications.

At the present time it is not technically or commercially viable to reliably identify and remove treated wood waste material during processing. Neither is it practical to test recycled materials for all chemicals that could be present.

The reprocessor shall maintain a formal schedule of the specification required by each end user which shall clearly list acceptable and unacceptable materials. The specification shall be either agreed between the reprocessor and each end user, or where no such agreement exists, shall meet the requirements of this PAS for each intended end use (see 4.3).¹¹⁾

4.2 Sources and qualities of waste wood

Some sources of waste wood may contain treated waste wood which might not be acceptable materials for the end-use. These items should be removed prior to processing.

Some wood treatments are visible to the naked eye and these items shall be removed from the waste, if hazardous, or if required by the end use application, following visual inspection on receipt at the reprocessing site (see 5.6), or prior to processing (see 5.7).



¹⁰⁾ A WRAP study on waste composition (Seabrook, Bridgewater and Network Recycling, 2004) found that, including laminated and veneered wood, on average 85% of the wood from the observed civic amenity sites and 23% from the observed C&D sites was treated. These figures should be treated as indicative only, and may not be representative of the national situation.

¹¹⁾ PAS 111 sets out minimum requirements. If the minimum is met or exceeded then the material is PAS 111 compliant; if the minimum requirements are not met, then the material is not PAS 111 compliant, even if the end user's specification is met.



4.3 End uses and acceptable feedstock materials

4.3.1 Panelboard manufacture

Sourcing waste wood feedstock for panelboard manufacture shall be in accordance with the requirements of PAS 104.

NOTE Panelboard products are sheet materials in which wood is predominant in the form of strips, veneers, chips, strands or fibres. They are manufactured to a series of European Standards, published as national standards in the UK as BS ENs.

4.3.2 Biomass energy generation

The regulatory controls on emissions from biomass energy generation operations mean that risks and hazards are controlled through emission limits. The emission limits may be set as part of the Environment Permit required for the site.

NOTE 1 It should be noted that Waste Incineration Directive (WID) could apply to biomass energy generation from waste wood Grades B, C and D.

Recovered wood intended for biomass energy recovery may, therefore, be of any grade, assuming that the biomass plant has a permit¹²⁾ to process this material.

NOTE 2 The European Waste Incineration Directive (2008/98/EC) [3] applies to all combustion of waste for energy generation. Wood waste is exempted from the scope of the WID, with the exception of wood containing halogenated organic compounds or heavy metals as a result of treatment with wood preservatives or coatings, and includes in particular wood originating from construction and demolition sites, unless the user proves that his biomass fuel does not contain such treatments.

¹²⁾ The Environmental Permitting Regulations (England and Wales) 2010 [4].

4.3.3 Animal bedding

Recovered wood intended for PAS 111 compliant animal bedding shall meet minimum testing requirements as set out in PAS 111. Only grade A wood should be used as input, and should be tested in accordance with 6.3.1 and 6.3.2.¹³⁾

4.3.4 Porous-surface applications

Recovered wood intended for porous surface applications shall be either Grade A waste only, or, if lower grades (with the exception of Grade D) of feedstock are accepted, the reprocessor shall implement a material output testing programme. Such a testing programme shall be agreed with each end user, or, if no such agreement exists, shall be in accordance with Clause 6.¹⁴⁾

NOTE 1 It is recognized that some porous-surface products could be supplied in the form of a 'multi-use' product.

NOTE 2 A clear distinction exists between the use of recycled wood as a mulch or soil conditioner in agriculture, for the growing of food, and its use in horticultural or domestic applications.

4.3.5 Sealed surface applications

NOTE The Government, Health & Safety Executive (HSE) and Royal Society for the Prevention of Accidents (RoSPA) recommend that all materials, including recovered wood products, used for play surfaces should comply with BS EN 1177.¹⁴⁾

Recovered wood intended for sealed surface applications shall meet minimum testing requirements as set out in PAS 111. Grade A wood wastes shall be sampled and tested, after processing, in accordance with 6.3.1 and 6.3.2. Wood recovered from Grades B or C wood wastes shall be sampled and tested, after processing, in accordance with all of the Clause 6 requirements applicable to sealed surface applications.¹⁴⁾

¹³⁾ PAS 111 sets out minimum requirements. If the minimum is met or exceeded then the material is PAS 111 compliant; if the minimum requirements are not met, then the material is not PAS 111 compliant, even if the end user's specification is met.

¹⁴⁾ WRAP (2004), Characterisation of emerging higher value markets for recycled wood products.

5 Processing waste wood

5.1 Background

Clause 5 describes good practice at each key stage of the receipt, storage, processing, preparation and testing of waste wood. Where appropriate it also provides the minimum requirements for key elements of the process to ensure that the end product is deemed to be suitable for onward sale for its intended use, albeit as a waste. Figure 3 shows the main processes involved.

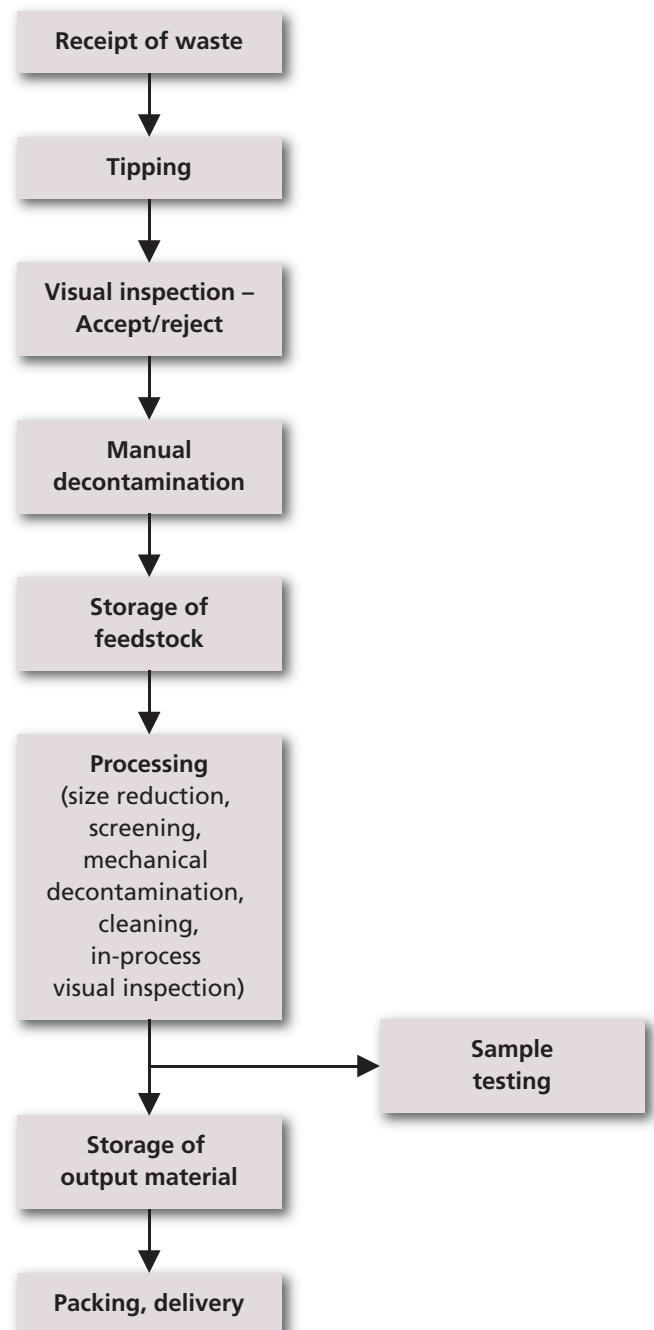
In all markets, the requirements set out in this PAS for the processing of waste wood, applicable to its receipt, storage, size reduction and quality control shall apply.

The requirements of this PAS for the testing of material outputs do not apply to well established markets, which include panelboard manufacture and biomass for energy generation, but shall apply in less well regulated markets where no agreed specification exists between the reprocessor and the end user.¹⁵⁾

NOTE 1 Attention is drawn to the requirements of the provisions of the Environmental Protection Act 1990, Part II [5], as amended, which define the legal framework of the Duty of Care for waste that should be complied with when storing, handling, recovering or disposing of waste, and the Waste (England and Wales) Regulations 2011.

NOTE 2 Where the requirements of Clause 5 refer to paper-based systems, it is noted that such systems may also be delivered electronically so long as the procedural and information recording requirements are met.

Figure 3 – Producing products from waste wood



¹⁵⁾ PAS 111 sets out minimum requirements. If the minimum is met or exceeded then the material is PAS 111 compliant; if the minimum requirements are not met, then the material is not PAS 111 compliant, even if the end user's specification is met.

5.2 Output material specification and testing

In well-established markets, where a material specification is contractually agreed between the end user and the reprocessor, the material testing regime to be followed by the reprocessor shall meet the requirements of the contractually agreed specification.¹⁶⁾

Where there is no contractually agreed material specification, the minimum testing regime set out in Clause 6 shall apply.

5.3 Collection and delivery of waste wood

When sourcing waste wood, the reprocessor shall provide the following:

- a) written specification of feedstock materials (4.1); and
- b) documented procedures covering collection, transportation and delivery.

5.4 Receipt of waste wood at the reprocessor

If waste wood is coming from a supplier with whom the reprocessor has no previous trading experience, a representative of the reprocessor may, where practical, visit the supplier in advance to check that the material is of the correct form.

The reprocessor shall ensure that the carrier delivering the material possesses valid waste carrier's registration.

Where the delivery to the reprocessor is to be made by the supplier, the supplier shall confirm, in advance to the wood reprocessor, the following:

- a) the form and estimated mass of material;
- b) the form of container in which it is to be transported; and
- c) the existence of valid waste carrier's registration.

Site conditions at the reprocessor, including lighting if deliveries are accepted out of daylight hours, shall allow a delivery of the material to be properly and safely inspected on receipt.

The net mass of input material accepted on the site shall be recorded. The net mass may be taken from the delivery note, and checked with weighbridge records where available.

Where the input material indicated on the delivery note is not acceptable under the conditions of the wood reprocessor's Environmental Permit, the load shall not be tipped at the site, and the driver shall be requested to remove the load from the site.

5.5 Tipping

Each load shall be fully deposited at the designated tipping area which shall be a clear area of the site, with a concrete or equivalent hard floor. The input material shall be tipped so as to ensure that there is no contact with any previous loads and that the supplier of the load may be identified.

When receiving material, the reprocessor should, where appropriate, operate to *Materials Handling Guidance Note No.1 Mechanised unloading of wood fibre products from curtain-sided vehicles*.¹⁷⁾

NOTE This provides guidance on unloading wood fibre products, including sawmill chips, sawdust, bark and recycled wood fibre from curtain sided vehicles, also known as 'chipliners'.



¹⁶⁾ PAS 111 sets out minimum requirements. If the minimum is met or exceeded then the material is PAS 111 compliant; if the minimum requirements are not met, then the material is not PAS 111 compliant, even if the end user's specification is met.

¹⁷⁾ Published by the Wood Panel Industries Federation, the Wood Recyclers' Association and the UK Forest Products Association.



5.6 Visual inspection of received material

5.6.1 Inspection procedure

The visual inspection shall be sufficient to determine, as far as is practical by visual means, that the load conforms to all end user, regulatory and site-specific requirements in that it:

- a) only contains material matching the form or grade entered on the Waste Transfer Note (WTN) or Delivery Ticket and the Waste Validation Form, and that, where visible, the physical and chemical contaminants are within agreed limits;
- b) contains no material for which the reprocessor has no licence or permit to handle;
- c) contains no material deemed unacceptable under the terms of the agreement between supplier and reprocessor or by 4.3, and by the site's schedule of acceptable materials (see 4.1).

The material may be spread out prior to inspection; for health and safety reasons, where it occurs, the spreading shall be performed by mechanical means. The spread-out material shall not be in contact with previously unloaded material.

The visual inspection of physical contamination shall be conducted by a trained member of staff working with the Waste Validation Form.

NOTE A portable metal detector can help to find large pieces of ferrous metal if set to low sensitivity; high sensitivity will detect every incoming nail.

5.6.2 Contaminant materials that could be present in waste wood

5.6.2.1 Physical contamination

The following materials represent examples of physical contaminants that could be present in waste wood:

- a) waste wood of a form not conforming to agreements between supplier and reprocessor, or which is not permitted under the conditions of the reprocessor's site Environmental Permit and is listed in the feedstock materials schedule for the site;
- b) hazardous waste including:
 - waste electrical and electronic equipment (WEEE);
 - oil, tar;
 - other hazardous waste.¹⁸⁾

¹⁸⁾ www.environment-agency.gov.uk/business/topics/waste/32180.aspx

c) organic material including:

- paper, cardboard, hardboard;
- food and other non-wood biodegradable waste;
- foliage and twigs.

d) plastic, including:

- bottles;
- films and bags;
- foam;
- plastic planks on the blue GKN pallets;
- plastics from old kitchen carcasses.

e) felt, rubber and silicone in all formats;

f) metal (ferrous and non-ferrous);

g) minerals, including:

- hardcore;
- aggregate;
- rubble;
- bricks;
- concrete;
- grit;
- glass;
- putty.

h) soil, stones;

i) plasterboard;

j) cane furniture, sofas, and textiles.

NOTE Information on identifying and separating out different forms of wood and contaminants is available in the *Guidance on separating wood for recycling at source. Step by step guide to understanding wood for recycling*.¹⁹⁾

5.6.2.2 Chemical contamination

A list of chemical compounds used in wood treatments that are of potential concern to human and animal health and to the environment are listed in Annex B. Table B.1 identifies which of these treatments are visible.

With a few exceptions where chemical wood treatment imparts a distinctive colour, most types of wood preservative cannot be identified by visual means. Identifiable items include utility transmission poles, railway sleepers, both typically though not exclusively creosote treated and wooden fencing products which

are typically treated with creosote or chromated copper arsenate or other copper-containing preservative.

The reprocessor shall remove for safe disposal material visibly treated with such chemicals identified during this inspection stage.

NOTE Other treatments listed in Table B.1 are invisible and non-odorous and are only detectable by laboratory analysis. Items that have been subjected to these treatments are not expected to be identified at this stage.

5.6.3 Acceptance of waste wood

On completion of the inspection, the inspector shall sign the Waste Validation Form for the load. The details shall be recorded onto the reprocessor's management system.

The driver or supplier shall be informed where the visual inspection reveals that the forms of material within the load do not conform to the information entered on the WTN or delivery ticket. The European Waste Catalogue List of Wastes (LOW) code shall be changed accordingly on the WTN and a Non-Conformance Report created.

NOTE It is recommended that in the case of repeated non-conformance events, the reprocessor should visit the site supplying the offending material to train the supplier in correct grading. Where economically viable, reprocessors can benefit from placing their own staff at a supplier's site (e.g. at a civic amenity site) to ensure grading is done properly at source. Ultimately, the reprocessor should refuse further trading with problematic suppliers.

Where non-conforming material does not contravene the conditions of the reprocessor's Environmental Permit, the reprocessor may choose to accept or reject the load depending upon an estimate of the proportion of the load which is not conforming to any contracts agreed between the reprocessor and the supplier.²⁰⁾ Where the load is rejected the reprocessor shall, either, return the non-conforming material to the delivery vehicle, or store it for subsequent, appropriate disposal.

Where the form of non-conforming material (e.g. hazardous waste) contravenes the conditions of the reprocessor's Environmental Permit and the waste has been supplied by an external party, the entire load shall be returned to the delivery vehicle and rejected from the site. Where the waste is supplied by a vehicle

¹⁹⁾ www.wrap.org.uk/recycling_industry/information_by_material/wood/guidance_on.html

²⁰⁾ PAS 111 sets out minimum requirements. If the minimum is met or exceeded then the material is PAS 111 compliant; if the minimum requirements are not met, then the material is not PAS 111 compliant, even if the end user's specification is met.

belonging to the reprocessor, the entire load shall be photographed and quarantined.

The supplier from whom the reprocessor collected the material shall be informed by electronic mail with a digital photo included as an attachment and the supplier shall be given the chance to inspect the load within 24 hours of notification, prior to final disposal.

5.7 Initial de-contamination and picking stations

Prior to movement of input material to the appropriate stockpile for further processing, any larger visible contaminants not practically removed during the visual inspection shall be removed.

NOTE When accepting mixed waste inputs from sources where physical contamination is likely to be significant, such as civic amenity (CA) sites or the construction and demolition sector, manual decontamination is safer when done by a picking station.

Contaminants and non-conforming material removed at this stage shall be disposed of correctly or, where agreed by contract, returned to the supplier for disposal.

5.8 Storage of input material

Where the input material is not to be immediately processed, it shall be moved to a storage area of the processing site set aside for that specific grade. A stockpile of a certain input grade shall not be in contact with a stockpile of a different grade.

Material shall be stored on hard surfaces in storage areas of an adequate size to prevent overflows. Storage areas shall be physically separated from each other and signed.

The storage areas shall be swept to avoid re-contamination.

NOTE 1 Attention is drawn to the appropriate fire regulations in relation to the storage of input materials.

NOTE 2 See PAS 104 for further guidance on storing and transporting material at wood processing sites.





5.9 Size-reduction, screening and mechanical de-contamination

Input material shall be reduced in size, where necessary, to facilitate handling and storage, to make transportation more economic, and to meet the end use specification.

NOTE 1 Various terms refer to size reduction processes employed by recovered wood reprocessors including shredding, chipping, milling, crushing and comminution. In practice, these words are used interchangeably and arise from the types of technology employed.

NOTE 2 The precise size threshold to which the material is reduced varies as specified by the end user, or as required for the intended general end uses.

Smaller items of physical contamination and visibly chemically treated wood items shall be removed to the extent required by the end use specification.

Where the same shredder is used to process different grades of wood, a risk of cross-contamination between grades may exist. Before processing higher grade material, any lower grade material remaining in the machine from a previous shredding may, if required, be “flushed out”. This may be done by passing through sufficient quantities of the higher grade material and transferring the resulting mix of high and low grade chip to the lower grade stockpile.

Where tests show that a batch of material falls outside the size or quality specification for the appropriate end use, it shall be re-entered into to the shredder or other relevant machines for further processing.

5.10 Storage of output material

5.10.1 Background

The material shall be stored to minimize quality loss through contamination or water ingress. The length of time for which chip can be stored may be prescribed by the customer.

NOTE Attention is drawn to the appropriate fire regulations in relation to the storage of processed materials.

5.10.2 Loose output material

When stored in loose form, the material shall be kept in storage bays with a concrete or other equivalent hard floor. The material shall be stored short of the full length and height of the bay to avoid spillage of the contents of the bay into adjacent bays and exposure to excess rainfall.

Different loose output material types shall be stored separately from one another to prevent cross-contamination.

5.10.3 Packaged output material

When the moisture content of the material is acceptable, as proven by the test described in 6.3.5, it shall be placed in packaging that will prevent water ingress.

Each package shall be labelled with the following information:

- a) material specification (including description of the material and the LOW code, taken from the applicable List of Waste Regulations, where the material is still classed as waste);
- b) material description;
- c) nominal particle size;
- d) weight or volume of package content;
- e) batch number; and
- f) reference to PAS 111.

NOTE Separate Lists of Waste Regulations apply in each country within the UK.

5.11 Dispatch and transport of output material

Output material shall be loaded for onward shipment to the end user on secure vehicles.

The material shall be accompanied by a delivery note which complies with relevant legislation and which includes reference to PAS 111.

5.12 Export of output material

NOTE Any organization wishing to export recovered wood material has a statutory duty to comply with the rules of the recipient territory's competent authority. In addition, export of any form of waste is governed by the Transfrontier Shipment of Waste Regulations 2007 [7].

5.13 Fire risk

Fire safety regulations and guidance vary from region to region, so the reprocessor shall consult with the local fire authority for guidance on safe procedures and to obtain a Fire Safety Certificate.

The following precautions shall be implemented:

- a) Smoking shall be forbidden throughout the site.
- b) Appropriate heat detection apparatus shall be available to measure the temperature of stockpiles.
- c) Remotely operated internal fire monitor stations shall be in place.
- d) Water, at sufficient pressure, shall be available to these stations.
- e) Spark arrestors shall be installed at appropriate locations.
- f) Stockpile heights shall be controlled and appropriate fire breaks shall be in place.

NOTE 1 Given that quantities of flammable material (both inputs and outputs) are being handled and stored, fire is a significant safety, environmental and economic risk. If left for a sufficient length of time in damp conditions, a small risk exists that a pile of wood chip could self-ignite due to exothermic reactions occurring within the pile. In addition, where significant quantities of dust are present in the air, a risk of explosion exists.

NOTE 2 Attention is drawn to the minimum statutory fire prevention regulations.

5.14 Health, safety and environmental issues

NOTE 1 See PAS 104, Annex A.6.2 for guidance on controlling and minimizing health and safety and environmental risks at waste wood processing sites.

NOTE 2 Reprocessors should refer to appropriate HSE (Health & Safety Executive) regulations and also the conditions of their site permit. Relevant legislation includes:

- a) Health and Safety at Work Act 1974 [8];
- b) Management of Health and Safety at Work Regulations 1999 [9];
- c) Provision and Use of Work Equipment Regulations 1998 (PUWER) [10];
- d) Control of Substances Hazardous to Health Regulations 2002 (COSHH) [11];
- e) Manual Handling Operations Regulations 1992 [12].

Reprocessors shall have the following documents available to present to end users, suppliers and regulators:

- a) Environmental Policy Statement; and
- b) Health & Safety Policy Statement.

NOTE 3 The reprocessors' attention is drawn to the Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR) [13] for airborne wood dust presents a risk of unwanted and dangerous explosions. DSEAR is the UK enactment of the following two EU Directives:

- a) Directive 99/92/EC (also known as "ATEX 137" or the "ATEX Workplace Directive") on minimum requirements for improving the health and safety protection of workers potentially at risk from explosive atmospheres [14]; and
- b) Directive 94/9/EC (also known as "ATEX 95" or "the ATEX Equipment Directive") on the approximation of the laws of Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres [15].

NOTE 4 Compliance with the ATEX directives has been mandatory for new equipment since June 2003, and for existing equipment since July 2006 ²¹⁾.

²¹⁾ Further information on ATEX and DSEAR is available at: <http://www.hse.gov.uk/fireandexplosion/>.

6 Output material testing

6.1 Background

Visual inspection of material outputs shall be carried out and reported once per operating shift as a minimum. This is to ensure that the recycling process is under control and that the apparent quality of the output material meets the requirements of PAS 111 for its end user.

Sample testing of a range of quality parameters of recycled wood chip shall be carried out in accordance with a formalized sample testing procedure.

Where an agreed specification exists, the sample testing procedure shall be agreed contractually in writing between the reprocessor and the end user.²²⁾

Where no agreed specification is in place, the minimum sample testing procedure set out in 6.3 shall be applied on samples taken from the reprocessor's material output stream.

6.2 Material attributes

The attributes of recycled wood that could require sample testing are:

- a) particle size range, including fines content;
- b) moisture content;
- c) colour;
- d) calorific value;
- e) non-wood physical contamination, including grit;
- f) chemical contamination;
- g) pathogen content; and
- h) biomass content.

NOTE Some of the attributes of the recycled wood identified may not be critical to either the intended application or end use or for regulatory, health, safety and environmental considerations. In addition, the limit of, or the acceptable range of values, for any given attribute will depend on the end use market.

Recycled wood shall contain no more than the maximum specified levels of non-wood physical

particles, hazardous chemicals and pathogens, and it shall have a moisture content appropriate to the end use. Test procedures for these attributes shall be tested in accordance with 6.3.

Whilst not mandatory, test procedures for the other attributes listed, i.e. particle size range, colour, calorific value and grit (non-wood physical contamination particles less 2 mm in size), are included for completeness, and these tests may be carried out by, or on behalf of the reprocessor at regular intervals to ensure that the recycling process is under control.

6.3 Sample testing programme for output material where there is no procedure within an agreed specification

6.3.1 Testing programmes

The reprocessor shall carry out regular sample testing of batches of output material in order to ensure that quality parameters for the batch are either within limits set by this PAS or, if no limit is set by this PAS, that measures do not vary excessively.

The sample testing procedure in operation shall be formalized in the reprocessor's quality management system.

The frequency of sample testing shall be a minimum of one test per month. However, the frequency shall be increased if:

- a) there is a significant change in feedstock mix and quality, as could be the case when switching to a new source of supply; or
- b) there is a significant change in processing parameters; or
- c) testing demonstrates that the sample fails the limit set by this PAS for any attribute.

To ensure that each sample for testing shall be representative of the throughput of the reprocessor during the period between tests (nominally one month), an adequately sized sample shall be taken from each production shift for each product type during the period. Each sample taken shall be representative of the batch from which it is obtained. Each sample shall be captured in such way as to ensure that no undue contamination is introduced during the procedure (e.g. concrete

²²⁾ PAS 111 sets out minimum requirements. If the minimum is met or exceeded then the material is PAS 111 compliant; if the minimum requirements are not met, then the material is not PAS 111 compliant, even if the end user's specification is met.



scrapings from the storage bay), and shall be prepared in accordance with Annex C. At the end of the period, all samples shall be added together and mixed and a final representative sample for testing shall be selected from the mix.

Final sample size shall be appropriate to the test being applied.

Where sample testing is to be carried out by a third party laboratory (e.g. for testing for pathogens or chemical contamination), all batch samples shall be taken and supplied to the testing laboratory within 1 working day.

NOTE For pathogen testing, sample transit is recommended under chilled conditions.

For each sample tested, the following information shall be included in the records kept by the reprocessor:

- a) sampling date;
- b) product description;
- c) identity of the batch or batches from which the sample was taken;
- d) name of the person who carried out the sampling, or, if the sample taker is not employed by the reprocessor, on whose behalf the sample taker is acting and his/her contact details; and
- e) full test results.

6.3.2 Physical contamination

Given the variety of sources from which waste wood is recovered, wood products may still contain a range of

physical contaminants (see Introduction). These may be clearly visible objects or smaller particles, present as grit.

NOTE 1 Testing for grit contamination is excluded from the requirements of this PAS and, therefore, no limit has been set for grit content.

Upon visual inspection the output material shall contain no sharps. Sharps are unacceptable in any application where recycled wood is bagged or supplied for any use where it is handled without protective gloves.

Upon visual inspection the output material shall contain no particles of contamination greater than 1 mm in size and minimal volumes of any combination of the following contaminants:

- a) inorganic material (e.g. bricks, stones, ceramics and glass);
- b) non-wood organic materials (e.g. plastics, rubber and paper);
- c) ferrous and non-ferrous metals; and
- d) material treated with CCA or creosote-like substances.

The percentage by weight of physical contaminants shall be determined in accordance with the methodology set out in Annex F.

NOTE 2 The procedure described in Annex F is derived from PAS 104.

The total quantity of physical contaminants in the sample tested, shall be less than 0.5% by weight of the

sample, for particles less than 1 mm in any dimension. There shall be no particles in the tested sample that are greater than 1 mm in any dimension.

The percentage by weight of grit shall be determined in accordance with the methodology set out in Annex H.

NOTE 3 *The procedure described in Annex H is derived from PAS 104.*

The total grit contamination of the sample shall be recorded.

6.3.3 Chemical contamination

Clauses 4 and 5 sets out requirements in the selection of varying grades of wood waste from diverse sources, depending on the intended end use of the recycled wood. A key element of good practice is for the reprocessor to ensure that all wood waste feedstocks are from known sources and of a consistent mix of waste wood forms, suitable for the intended end market applications. Together with visual inspection of incoming feedstocks and initial decontamination procedures, as set out in 5.6 and 5.7, the risk of unacceptable levels of potentially toxic elements (PTEs) being present in the recycled wood should be minimized.

Virgin wood contains naturally occurring chemical contaminants²³⁾ and wood waste can contain a variety of chemical treatments. Many of these chemicals cannot be detected visually either at the inspection stage or by the methodology used for assessing physical contamination (see 6.3.2).

Some hazardous chemicals could remain in the wood presented for reprocessing and these will, therefore, remain in the recycled wood. It is not commercially viable, given current technology, to test recycled material for all chemicals that may be present. Sample testing of output materials shall be carried out to establish the levels of the most common PTEs and hazardous chemical compounds present in waste wood.

Chemical testing for invisible contaminants is unlikely to be practical for reprocessors at the present time. Samples for testing, therefore, may be sent to accredited third party organizations.²⁴⁾

The range of, and acceptable upper limits for PTEs and hazardous chemical compounds to be tested shall depend on the end use application.

The chemical contamination of wood waste intended for biomass energy recovery is controlled by emissions limits which are set as part of the Environmental Permit required for the site.

The upper limits for chemical contamination for other end use applications are, where agreed by the appropriate industry and the regulators, set out in Table 1.



²³⁾ WRAP (2005) Assessment of types of naturally occurring contaminants in virgin wood sources.

²⁴⁾ Third party laboratories may be accredited by UKAS, the United Kingdom Accreditation Service. See www.ukas.com/ for more information regarding UKAS.

Table 1 – Chemical contamination – upper limits

Main contaminants in treated wood	Upper limit for each end use (mg/kg dry matter)		
	Panelboard manufacture [Source: WPIF & EPF Standards]	Porous surface applications (excluding agriculture) [Source: PAS 100]	Non-porous surface applications
PTEs			
Arsenic (As)	25	–	–
Cadmium (Cd)	50	1.5	1.5
Chromium (Cr)	25	100	100
Copper (Cu)	40	200	200
Fluorine (F)	100	–	–
Chlorine (Cl)	1,000	–	–
Lead (Pb)	90	200	200
Mercury (Hg)	25	1.0	1.0
Nickel (Ni)	–	50	50
Zinc (Zn)	–	400	400
Compounds			
Heavy metal compounds (e.g. CCA) and halogenated organic compounds (e.g. Lindane)	4,000 combined	Trace	Trace
Creosote (Benzoapyrene)	0.5	Trace	Trace
Pentachlorophenol (PCP)	5	–	–

NOTE The test results for PTEs may vary with the method used. The upper limits for mercury for porous surface applications are based on the method of test set out in BS ISO 16772. The upper limits for the other listed PTEs for porous surface applications are based on the method of test set out in BS EN 13650.

6.3.4 Pathogens

Pathogens present in recycled wood can pose a risk to human and animal health. *Salmonella* spp. and *Escherichia coli* (E. coli) are commonly used indicator species for human and animal pathogens.

Sample biological testing for the presence of pathogens shall be carried out on recycled wood intended for animal bedding and porous surface applications only.

Where sample testing is to be carried out, it should be carried out by an independent third party laboratory. The method of test and the associated upper limits are set out in Table 2.

Table 2 – Biological testing – Test methods and upper limits

Parameter	Method of test	Unit	Upper limit
<i>Escherichia coli</i>	BS ISO 16649-2	CFU/g fresh mass	1,000
<i>Salmonella</i> spp	Schedule 2, Part II of BS EN ISO 6579	25 g fresh mass	Absent

6.3.5 Moisture content

Moisture is a natural constituent of recycled wood, but high levels of moisture can lead to rapid deterioration of the product and will serve to accelerate the growth of mould and pathogens.

Upon visual inspection of the output material there shall be no visible water on the surface and the batch shall not have a generally wet appearance.

The percentage by weight of moisture in test samples taken from any batch shall be determined in accordance with the methodology set out in Annex E.

NOTE The procedure described in Annex E is derived from PAS 104.

The moisture content of the sample shall not be more than 30% by wet weight.

6.4 Particle size range

Particle size range is an important measure of consistency for recovered waste wood since it often directly affects the performance of the material in the end use application. The range of particle size required will vary by end use and therefore this PAS does not set limits for this.

Given that the process will control the particle size range, the need for testing is limited.

Where required, however, the percentage by mass of particles within a given size range may be determined in accordance with the methodology set out in Annex D.

NOTE The procedure described in Annex D is derived from PAS 104.

The percentage of particles in the sample within the given size range shall be recorded.

6.5 Calorific value

The need for the testing for calorific value of recycled wood is limited to the biomass energy sector and is carried out by, or on behalf of, the end user.

6.6 Colour

For certain end users, the recycled wood may need to meet specific colour requirements. The colour of the test sample may be determined in accordance with the methodology set out in Annex G.

NOTE The procedure described in Annex G is derived from PAS 104.



Annex A (informative) Grades of recycled wood

Grade	Typical markets	Typical sources of raw material for recycling	Typical materials	Typical non – wood content prior to processing	Notes
Grade A “Clean” recycled wood	A feedstock for the manufacture of professional and consumer products such as animal bedding and horticultural mulches. May also be used as fuel for renewable energy generation in non-WID installations, and for the manufacture of pellets and briquettes.	Distribution. Retailing. Packaging. Secondary manufacture, e.g. joinery. Pallet reclamation.	Solid softwood and hardwood. Packaging waste, scrap pallets, packing cases, and cable drums. Process off-cuts from the manufacture of untreated products.	Nails and metal fixings. Minor amounts of paint, and surface coatings.	Some visible particles of coatings and light plastics will remain. Is a waste for the requirements of Waste Management Regulations. Does not require a WID installation. Should not contain lower grade material.
Grade B Industrial feedstock	A feedstock for industrial wood processing operations, such as the manufacture of panel products, including chipboard and medium density fibreboard.	As Grade A, plus construction and demolition operations transfer stations.	May contain up to 60% Grade A material as above, plus building and demolition materials and domestic furniture made from solid wood.	Nails and metal fixings. Some paints, plastics, glass, grit, coatings, binders and glues. Limits on treated or coated materials as defined by WID.	The Grade A content is not only costly and difficult to separate, it is essential to maintain the quality of feedstock for chipboard manufacture, and for PRN revenues. Some feedstock specifications contain a 5% to 10% limit on former panel products such as chipboard, MDF and plywood. Should not contain lower grade material. Is a waste for the requirements of Waste Management Regulations. May require a WID installation, unless the operator of the biomass energy plant can demonstrate to the Regulator adequate quality controls in the supply chain to ensure no Grade C material is included.
Grade C Fuel	Biomass fuel for use in the generation of electricity and/or heat in WID compliant installations.	All above, plus municipal collections, recycling centres transfer stations and civic amenity recycling sites.	All of the above plus fencing products, flat pack furniture made from board products and DIY materials. High content of panel products such as chipboard, MDF, plywood, OSB and fibreboard.	Nails and metal fixings. Paints coatings and glues, paper, plastics and rubber, glass, grit. Coated and treated timber (non CCA or creosote).	Suitable only For WID installations. Material coated and treated with preservatives as defined by WID may be included. Should not contain lower grade material. Is a waste for the requirements of Waste Management Regulations.
Grade D Hazardous waste	Requires disposal at facilities licensed to accept hazardous waste.	All of the above plus fencing, track work and transmission pole contractors.	Fencing, transmission poles, railway sleepers, cooling towers.	Copper / chrome / arsenic (CCA) preservation treatments and creosote.	Is a waste for the requirements of Waste Management Regulations. Requires disposal as a hazardous waste incinerator.

Source: Derived from Wood Recyclers' Association

NOTE 1 There will be some coated or treated wood in all grades, as it is impossible to identify or exclude every particle of such material.

NOTE 2 Waste regulatory requirements may further limit inputs for specific end-uses. Check with the regulator for the most up to date information.

Annex B (informative) Chemicals used in wood preservatives and their identification

Chemical	Preservative types	Possibilities of identification in a waste stream
Creosote	Derived from tar oil. Waste wood treated with creosote is likely to be classified as hazardous waste.	Distinctive odour, golden to dark brown colour.
Copper	<p>Present in chromated copper arsenate (CCA). Waste CCA-treated wood is likely to be classified as hazardous waste.</p> <p>Present in non-arsenical copper based preservatives such as chromated copper, chromated copper boron, chromated copper phosphate and copper-organic types. The waste classification of these types of treated wood depends on the concentration of component substances in treated wood.</p> <p>Present in copper naphthenate and acypetacs copper. Treated wood is a distinctive deep green colour.</p>	<p>Pale green or blue/green colour (these colours are imparted to treated wood by both copper and chromium compounds).</p> <p>Colour reagents are available to identify copper in treated wood but they do not distinguish CCA from other copper-containing types.</p>
Other inorganic chemicals	<p>Chromium: when present always occurs with copper.</p> <p>Boron: may be mixed with copper and chromium or is used alone when it is colourless.</p> <p>Phosphorus: when present is always mixed with copper and chromium.</p> <p>The waste classification of these types of treated wood depends on the concentration of component substances in treated wood.</p>	Chromated copper mixtures impart a pale green or blue/green colour.
Organic insecticides and fungicides	<p>Many different compounds used in treated wood. May be entirely organic or may be metallo-organic. Widely-used examples of the latter are organotin compounds typically tri-n-butyl tin oxide (TBTO) and acypetacs zinc. Formulated in VOC or water-diluted emulsions. Do not impart a colour to treated wood.</p> <p>The waste classification of these types of treated wood depends on the concentration of component substances in treated wood.</p>	Identification of individual substances requires laboratory facilities.

NOTE A dye (typically red, blue or yellow) is sometimes added to clear preservative treatments for commercial identification and marketing purposes. Such dyes are normally light fugitive but wood retaining a colour from dye could enter waste streams. Such colours are not useful for identification purposes.

Annex C (normative)

Preparation of test samples

C.1 Principle

A bulk sample is collected from the tipped load and then reduced to appropriately sized test samples.

C.2 Apparatus

C.2.1 *Shovel or trowel.*

C.2.2 *Balance(s)*, calibrated and accurate to within 0.1% of the initial or maximum test sample.

C.2.3 *Containers*, for collecting the increments of a sample, clean and non-absorbent, such as a plastic bucket.

C.2.4 *Containers*, clean and impervious, such as clear bags made of plastic at least 100 µm thick, for sending samples to laboratories.

C.3 Procedure

C.3.1 Collect a bulk sample of at least 3 kg from the tipped load using a suitable tool (**C.2.1**) and suitable containers (**C.2.3**), ensuring that the sample is representative of the load.

C.3.2 Determine the required testing sample weight, based on the test(s) to be conducted.

C.3.3 Place the bulk sample on a dry, clean non-absorbent surface where material will not be lost and foreign material will not be introduced.

C.3.4 Thoroughly mix the bulk sample.

C.3.5 Weigh out each test sample and place in a suitable container (**C.2.4**). Record the weight of the test samples. Label the test samples and the remainder of the bulk sample.

C.4 Labelling of samples

C.4.1 Store the retained portion of the bulk sample in suitable containers (**C.2.4**). Label with the date, sample number, load number and/or reference number from the delivery note.

C.4.2 Store and label test samples in suitable containers (**C.2.4**) with the date, load number and/or reference number from the delivery note, a description of the load, a unique test sample number, sample weight and name and signature of the sampler.

Annex D (informative)

Determination of particle size range

D.1 Principle

From a test sample, pieces smaller than the minimum permitted size are removed by sieving and pieces larger than the maximum permitted size are removed by hand sorting. The mass of the removed material is determined and the percentage of particles within the permitted range is expressed as a percentage by mass of the test sample.

D.2 Apparatus

D.2.1 *Drying oven*, ventilated, capable of being controlled at $(103 \pm 2) ^\circ\text{C}$.

D.2.2 *Balance(s)*, calibrated and accurate to 1 g.

D.2.3 *Test sieve*, perforated plate with square holes, conforming to BS 410-2, with an aperture size equal to the specified minimum permitted size, with a lid and receiver.

D.2.4 *Accessories for cleaning sieves*, such as brush, vacuum cleaner, air hose.

D.2.5 *Mechanical sieve shaker* (optional).

D.3 Procedure

D.3.1 Obtain a test sample of (500 ± 25) g in accordance with Annex C. Dry the test sample in an oven (**D.2.1**) at $(103 \pm 2) ^\circ\text{C}$ for not less than 16 h.

D.3.2 Weigh the dried test sample to the nearest 1 g (**D.2.2**). Record this mass as m .

D.3.3 Spread the test sample out on a clean, flat surface. Separate by hand any pieces larger than the specified maximum permitted size.

D.3.4 Weigh the separated material to the nearest 1 g and record the mass as m_1 .

D.3.5 Ensure the test sieve (**D.2.3**) is clean and dry.

D.3.6 Place the test sieve (**D.2.3**) on the receiver, add the test sample and cover with the lid.

D.3.7 Either by hand or using the mechanical sieve shaker (**D.2.5**), shake the sieve assembly for a sufficient time (see Note), using a vibratory or side-to-side motion, to separate out the material under the specified minimum permitted size.

NOTE Allow 10 minutes for mechanical sieving and up to 30 minutes for hand sieving.

D.3.8 Carefully open the assembly, avoiding spillage.

D.3.9 Weigh the material that passed through the sieve screen to the nearest 1 g. Record mass as m_2 .

D.4 Calculations

D.4.1 Calculate the percentage mass of oversize material ($\% m_1$) using the formula:

$$\% m_1 = \left(\frac{m_1}{m} \right) 100$$

D.4.2 Calculate the percentage mass passing through the screen ($\% m_2$) using the formula:

$$\% m_2 = \left(\frac{m_2}{m} \right) 100$$

D.4.3 Calculate the percentage mass of particles within the permitted size range as:

$$100\% - \% m_1 - \% m_2$$

Annex E (normative)

Determination of moisture content

E.1 Principle

Determination, by weighing, of the loss of mass of a test sample between its state at the time of sampling and its state after drying to constant mass, and calculation of this loss of mass as a percentage of the mass of the test sample before drying.

E.2 Apparatus

E.2.1 *Balance*, scale interval 0.1 g.

E.2.2 *Drying oven*, ventilated, capable of being controlled at $(103 \pm 2) ^\circ\text{C}$.

E.3 Procedure

E.3.1 Take a (100 ± 5) g test sample in accordance with Annex C.

E.3.2 Weigh the test sample in the as sampled state to an accuracy of 0.1 g. Carry out this initial weighing immediately after sampling or, where this is impossible, take precautions to avoid changes in the moisture content of the test sample after sampling.

E.3.3 Place the test sample in the drying oven (E.2.2) at a temperature of $(103 \pm 2) ^\circ\text{C}$ for not less than 16 hours.

E.3.4 After the test sample has been cooled to approximately room temperature, weigh the test sample to an accuracy of 0.1 g, rapidly enough to avoid an increase in moisture content greater than 0.1%.

E.4 Expression of results

Calculate the moisture content H of each test sample, as being the percentage of total moisture in the sample to the total wet mass of the sample, to the nearest 0.1%, in accordance with the following formula:

$$H = \left(\frac{m_H - m_0}{m_H} \right) \times 100$$

where

m_H is the initial mass of the test sample, in grams;

m_0 is the mass of the test sample after drying, in grams.

Annex F (normative)

Determination of physical contamination levels

F.1 Principle

A test sample of a load is hand sorted into its constituent types of particles. The mass of each of these types of particles is determined and expressed as a mass fraction of the test sample.

F.2 Apparatus

F.2.1 *Ventilated oven*, thermostatically controlled to maintain a temperature of $(40 \pm 5) ^\circ\text{C}$.

F.2.2 *Balance*, calibrated, and accurate to 1 g.

F.2.3 *Horseshoe magnet* (or equivalent), with lift strength of at least 100 g.

F.2.4 Sampling and preparation of test portions

F.2.5 Obtain a test sample of (1 ± 0.1) kg in accordance with Annex C.

F.2.6 Dry the test sample to constant mass at a temperature of $(40 \pm 5) ^\circ\text{C}$ (F.2.1).

NOTE *Constant mass is considered to be reached when the results of two successive weighing operations, carried out at an interval of 24 h, do not differ by more than 0.1% of the mass of the test pieces.*

F.3 Procedure

F.3.1 Weigh and record the mass of the test sample as W_{total}

F.3.2 Spread the particles of the test sample onto a flat surface and separate by hand into the following types of particles:

- wood chips;
- inorganic contaminants (e.g. bricks, stones, ceramics and glass);
- non-wood organic contaminants (e.g. plastics, textiles, rubber and paper);
- ferrous metals;
- non-ferrous metals;
- treated wood.

NOTE *Upon a visual inspection only the most obvious of treated timbers will be found.*

Identify and separate any particles of contaminants from the above list that are greater than 1 mm in size in any dimension. Such contaminants will cause the batch to be rejected.

Where no such particles exist, proceed to step F.3.3.

F.3.3 In order to separate the ferrous metals, hold a clean sheet of paper between a magnet and the sample.

Pass the magnet slowly over the test sample. Hold the paper and magnet above a weighing container, then lift the magnet from the paper, transferring the magnetic materials into the container. Continue this process until all the sample has been exposed to the covered magnet. Non-magnetic ferrous metals, such as stainless steel, should be searched for visually and removed by hand.

F.3.4 Weigh the separated pile of each type of particle listed in F.3.2 less than 1 mm in size and record the result, $W_{\text{subscript}}$, where the subscript is one of the contaminants, i.e., inorganic, non-wood organic, ferrous, non-ferrous or treated wood material.

F.3.5 Calculate the mass fraction expressed as a percentage by mass of each group of contaminant particles from the equation:

$$\% W_{\text{subscript}} = \left(\frac{W_{\text{subscript}}}{W_{\text{total}}} \right) \times 100$$

where the subscript is as specified in F.3.4.

F.4 Expression of results

Record the test result for each type of particle less than 1 mm in size. The total contamination level of the sample, $\%W$, is the sum of these values.

Annex G (informative)

Determination of acceptability of colour of load

G.1 Principle

A clear plastic bag containing a reference sample is compared visually, in natural daylight, to a clear plastic bag containing a test sample.

G.2 Apparatus

G.2.1 Clear plastic bags, made of plastic at least 100 µm thick, large enough to hold (1 ± 0.1) kg of wood chip.

G.3 Procedure

G.3.1 Take a (1 ± 0.1) kg test sample in accordance with Annex C and place it in a plastic bag (G.2.1).

G.3.2 Place a (1 ± 0.1) kg reference sample in a plastic bag (G.2.1).

NOTE The reference sample is a sample that has been agreed between the reprocessor and the panelboard manufacturer as being representative of the main source of post-consumer wood.

G.3.3 Place the bags next to each other. View them under natural daylight. Visually compare the colours of the samples.

G.3.4 The test sample is deemed unacceptable if it is noticeably darker in colour than the reference sample.

G.4 Expression of result

The result of the test is expressed as "accept" or "reject" as determined in G.3.4.

G.5 Test report

The test report shall include the following information:

- a) identification of the sample;
- b) date of testing;
- c) persons present during sampling;
- d) result of testing (G.3.4).

Annex H (informative)

Determination of grit content

H.1 Principle

The mass of incombustible, acid-insoluble residue, remaining after ignition of the test specimen, is measured.

H.2 Reagents

H.2.1 *Hydrochloric acid solution*, one part concentrated hydrochloric acid to one part distilled water, by volume.

H.2.2 *Distilled water*.

H.3 Apparatus

H.3.1 *Ventilated oven*, thermostatically controlled to maintain a temperature of $(40 \pm 5) ^\circ\text{C}$.

H.3.2 *General*, where the accuracy of the apparatus is specified, the apparatus shall be calibrated at least annually.

H.3.3 *Flat bottomed stainless steel pan*, approximately 1 litre.

H.3.4 *Gas ring*.

H.3.5 *Furnace*, capable of maintaining a temperature of $(800 \pm 50) ^\circ\text{C}$.

H.3.6 *Balance*, capable of determining mass to the nearest 0.01 g.

H.3.7 *Ceramic crucible*, capacity approximately 50 ml.

H.3.8 *Glass beaker*, capacity 250 ml.

H.3.9 *Air circulating oven*, capable of maintaining an internal temperature of $(103 \pm 2) ^\circ\text{C}$.

H.4 Test specimen

H.4.1 Obtain a test sample of (100 ± 5) g in accordance with Annex C.

H.4.2 Dry the test sample to constant mass at a temperature of $(40 \pm 5) ^\circ\text{C}$ (H.3.1).

NOTE *Constant mass is considered to be reached when the results of two successive weighing operations, carried out at an interval of 24 h, do not differ by more than 0.1% of the mass of the test pieces.*

H.5 Procedure

H.5.1 Weigh and record the mass of the test sample to the nearest 0.01 g (H.3.6).

H.5.2 Place the test specimen in the pan (H.3.3) over the lighted gas ring (H.3.4) and continue heating until the wood chips are reduced to ash.

H.5.3 Transfer the ash residue to the crucible (H.3.7). Place the crucible containing the ash in the furnace (H.3.5) for approximately 1 h until the sample is free from carbon.

H.5.4 Cover with 75 ml of the hydrochloric acid solution (H.2.1). Boil gently for 2 min. Allow to cool. Add 75 ml of distilled water and then decant as much water as possible without the loss of solid residue.

WARNING Hydrochloric acid is corrosive. Suitable skin and eye protection should be worn when carrying out this procedure.

H.5.5 Dry the residue in the oven (H.3.9) and determine the mass to the nearest 0.01 g.

H.6 Calculation and expression of results

The grit content of the test sample G , expressed as a percentage by mass, shall be calculated from the following equation:

$$G = \left(\frac{m_o}{m_i} \right) \times 100$$

where

m_i is the mass of the dried wood chips before ignition, (in g);

m_o is the mass of the residue after drying, (in g).

The result shall be expressed to the nearest 0.01%.

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Wood Waste Landfill Restrictions in England: Call for Evidence

Summary of Responses

February 2013

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Introduction and background

The 2011 Review of Waste Policy in England announced Government's intention to consult on introducing a restriction on the landfilling of wood waste in 2012. In July 2012, we launched a consultation in the form of a Call for Evidence on restricting wood waste to landfill. The Call for Evidence invited views on the management of wood waste and measures to divert wood waste from landfill. The Call closed on 28 September.

This report summarises responses to the Call for Evidence (CfE). The report does not seek to offer an opinion on the comments received. In writing this summary, we have tried to reflect the views of and mainly used the language/terminology of the respondents. Evidence from the Call will improve the evidence base and help develop policy options. Our aim is to ensure wood waste is managed in a way that delivers the best outcome for the environment and the economy.

Summary of responses

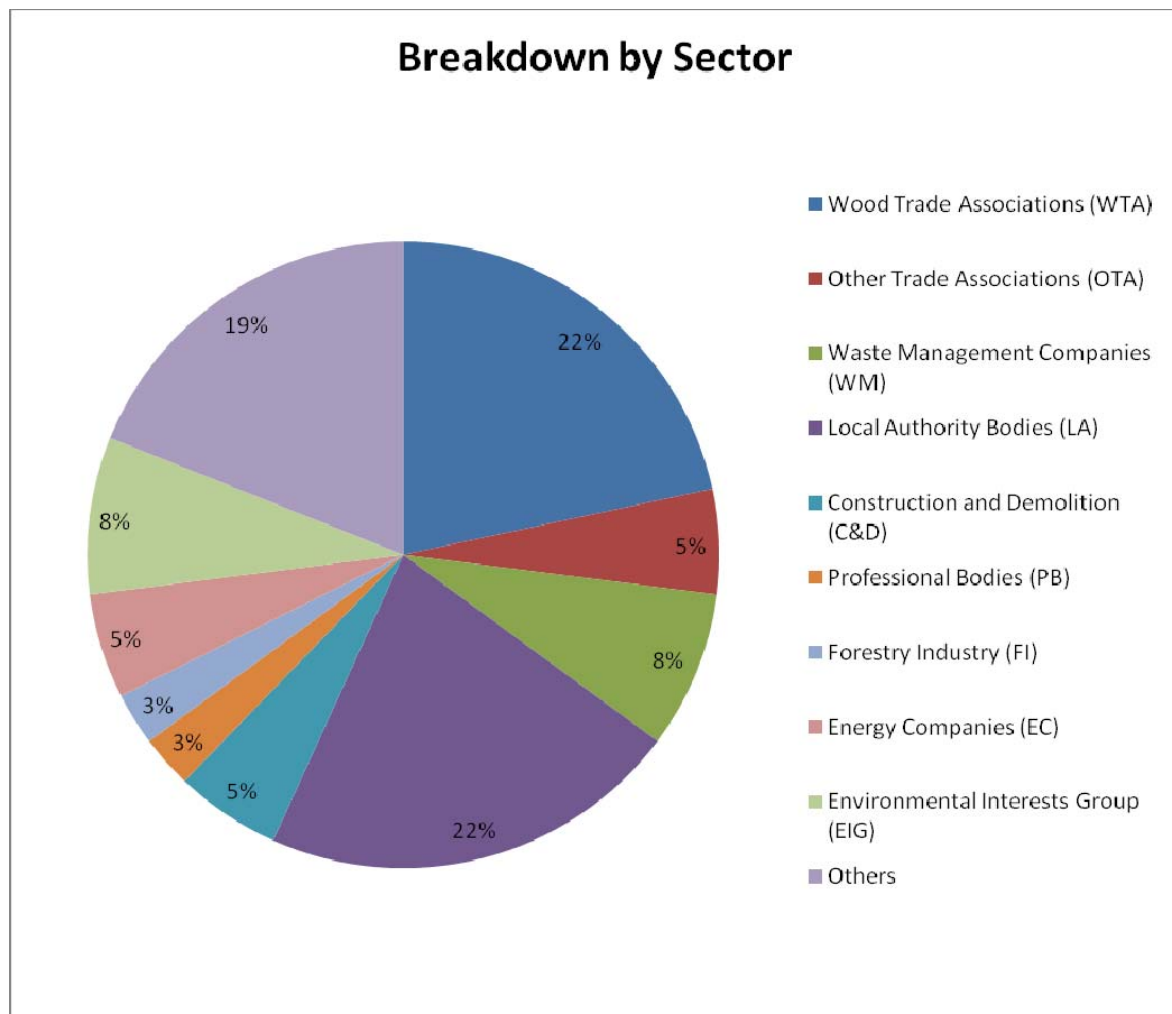
The summary of responses sets out numbers of responses received, and the types of organisations who responded by sector, but does not attribute specific comments to individuals or organisations.

This summary is organised by question.

Breakdown by sector (more detailed list can be found at annex A)

37 responses were received to the call for evidence. 8 responses from wood trade associations (WTA), 2 responses from other trade associations (OTA), 8 responses from local authority bodies (LAs), 2 responses each from energy and construction and demolition (C&D) companies, 3 each from Environmental interest groups (EIG) and waste management (WM) companies, 1 response each from the forestry industry and a professional body and 7 from “others” consisting of companies and individuals with interest in wood waste.

The pie chart below shows the breakdown by sector in more detail.



Question 1: Do you know of any reasons why any of these types of wood waste, or any others should not be included in any potential restrictions?

Who responded?

24 responses. 7 wood trade associations, 1 other trade association, 5 LA bodies, 2 waste management companies, 2 construction and demolition, 2 energy companies, 1 environmental interest group, 1 forestry industry and 3 “others”.

How they responded

Wood trade associations (2 responded yes, 3 responded no and 2 did not indicate a choice)

Those who responded yes would like to see all types of wood waste included in a restriction although clarity on the definition of ‘waste wood’ is necessary. For them and for those who responded no a particular issue was that by-products such as sawmill products should not be considered waste as per Defra’s [Definition of Waste Guidance](#).

One WTA responded neither yes or no to this question but thought that before any ban is put in place on low grade wood there needs to be sufficient biomass potential in the UK to deal with treated, laminated chipboard etc.

Other trade associations (1 responded yes)

One other trade association is in support of diverting all wood waste from landfill as long as alternative cost effective management options can be identified. It identifies wood treated with halogenated compounds, paints or lacquers as less straight forward and concludes that WID¹-compliant power plant capacity would be needed otherwise such materials may need to be exempt from any restriction.

LA bodies (4 responded no, 1 responded yes)

Whilst one LA body didn’t see any reason why the types of wood waste mentioned should not be included, they felt that greater detail is required to aid understanding of the implications, for example, on whether waste made up of composite materials such as an upholstered chair would be in scope.

¹ **Waste Incinerator Directives:** <http://www.environment-agency.gov.uk/business/regulation/31969.aspx>

One LA body stated that a landfill ban on its own will be ineffective in driving change and that consideration should be given to increasing landfill tax beyond 2014/15 accompanied by a phased introduction of a complete ban on biodegradable waste. Another LA felt that fiscal incentives and quality standards are beginning to align to increase opportunities for the reuse, recycling and recovery of wood waste.

Another was of the view that appropriate (particularly reliable landfill alternatives) infrastructure needed to be in place first before including all wood waste in a restriction.

In addition, the only LA body who responded yes stated that consideration should be given as to whether the cost and practical implications of restricting certain materials within the 'wood waste' definition are justified by the associated benefit. They also pointed out that the practicalities of applying such restrictions may be easier if more (or all) wood waste materials are in scope.

Construction and demolition (2 responded yes)

The primary concern raised was the treatments on waste wood. They believe if the appropriate treatment or incineration facilities are not available for these types of wood waste then landfill may be the only option.

Waste management companies (2 responded no)

The waste management companies responded no but one was of the opinion that a distinction needed to be made between clean wood and contaminated wood waste if a landfill ban is to be considered. Their view was that markets exist for grade A and B wood waste, whilst grade C and D are more difficult to deal with. They stated that before a landfill ban can be considered the Government must give a clear indication of how it expects the low grade wood to be dealt with.

Energy companies (2 responded no)

One was of the opinion that the policy objective of reducing GHG emissions from waste wood should be fulfilled to the maximum and the implementation of the restriction should be simple.

Environmental interest groups (1 responded yes)

Concerns were raised about the practical implications of a ban covering wood from industrial sources, arboriculture and green garden waste. The respondent states that it is unclear how diverting waste wood from arboriculture and green garden waste would fit into the BAU. It notes that the waste wood data sources do not appear to include virgin wood waste from forestry or park and garden waste. They conditionally support a ban on biogenic waste to landfill.

Forestry industry (1 responded yes)

Responded yes but was of the opinion that a clearer definition of wood waste is needed.

Others (1 responded yes, 2 responded but did not indicate their preference)

One responded yes however was of the opinion that wood panel waste should not be treated as wood waste but treated separately. One respondent was of the opinion that all the wood wastes would need to be considered separately due to the different opportunities and threats that the streams pose, and that wood panel waste should not be treated as waste. One thought that legal clarity over which types of wood waste would be covered by any restrictions needed to be provided.

Question 2: Do you have any additional evidence that could improve our estimate of greenhouse gas emissions from wood waste in landfill?

Who responded?

16 responses. 6 wood trade associations, 4 LA bodies, 1 waste management companies, 2 construction and demolition, and 3 environmental interest groups.

How they responded**Wood trade associations** (2 responded yes, 4 responded no)

One WTA did not have any evidence but refers to the use of wood waste for soil improvement/creation in land restoration. This would result in significant greenhouse gas emission savings when compared to both landfill and combustion due to carbon sequestration in soil organic matter and the soil microbial biomass, resulting in locking in of carbon in soil for hundreds of years.

One WTA did not have any evidence but mentions that it is essential that only waste wood which could not have been reused or recycled should be incinerated. Energy plants will naturally gravitate towards the cheapest and easiest material to use – namely, uncontaminated wood – unless specific measures are put in place to focus incentives (and restrictions) around contaminated wood.

One WTA made reference to journals (see list at Annex B question 2).

One WTA referred to various studies that cover the behaviour of wood in landfill (see list under Annex B, question 2). They believe that there is evidence that although the cellulose and hemicellulose components of wood can degrade under anaerobic landfill conditions, the lignin component does not. As the cellulose and hemicellulose components are embedded in the lignin, they are afforded a degree of protection

against degradation. To understand fully the behaviour of wood in UK landfill and the implication for greenhouse gas emission, there is a need for research to be undertaken.

LA bodies (3 responded no, 1 responded yes)

Two LA bodies cited a report on Zero Wood Waste to Landfill which concluded that the highest carbon benefits are obtained from disposing of waste wood through Energy from Waste routes particularly for the more contaminated waste wood.

Another LA body thought that the overall environmental impact (not just GHG emissions) from restricting wood waste to landfill should be considered including the resource depletion value of wood. The issue of carbon sequestration was mentioned and reference was made to a UNEP report. See Annex B, question 2 for the cited report and studies.

One LA body referred to two studies; one on wood products and the other on protocol for the quantification of greenhouse gas emissions from waste management activities (see Annex B, question 2 for the relevant table and websites)

Waste management companies (1 responded no)

One WM company was of the opinion that carbon emissions of wood to landfill seem to have been overestimated (and rates will be slower given diversion of organic materials from landfill).

Construction and demolition (1 responded yes, 1 responded no)

See Annex B, question 2 for sources provided.

Environmental interest groups (3 responded yes)

One environmental interest group is of the opinion that there is ample evidence that the rate of decomposition of wood under anaerobic conditions in landfill is very limited in comparison with the assumptions adopted in WRATE². See Annex B, question 2 for listed sources.

One environmental interest group believes the issue of methane capture rates from landfill is controversial. Without robust monitoring data over the course of the lifetime of UK landfills, no direct determination of actually captured methane can be made. 75% capture rates are not necessarily excessive; however, these rates are high in comparison to rates in other European countries with Germany and Italy reporting

² WRATE – Waste and Resources Assessment Tool for the Environment: <http://www.environment-agency.gov.uk/research/commercial/102922.aspx>

recovery rates closer to 50%, and Sweden and Denmark reporting recovery rates closer to 25%.

One environmental interest group highlighted that many landfill sites burn the methane, which produces carbon dioxide. However it states that methane production is slow, particularly if the wood is treated with preservatives. This can be compared to the carbon dioxide emitted from a biomass incinerator. Carbon dioxide is a more serious greenhouse gas than methane. They state that burning wood produces 50% more carbon dioxide than burning coal and 330% more carbon dioxide than burning natural gas.

Question 3: Do you agree that approximately 0.6mt of wood waste is going to landfill in England?

Who responded?

20 responses. 6 wood trade associations, 1 other trade association, 4 LA bodies, 2 waste management company, 2 construction and demolition, 2 energy companies, 1 forestry industry, 1 others and 1 environmental interest group.

How they responded

Wood trade associations (2 responded yes, 1 responded no and 3 responded without indicating their preference)

One WTA estimates the figure to be 0.5mt for the whole of the UK, with between 350 and 400,000 tonnes for England. Much of what goes into landfill is Grade D (hazardous) which the wood recycling industry will not take, or is difficult to separate out from other materials, eg upholstered furniture. They are of the opinion that some research is needed first to establish how much wood is actually being land-filled and what it consists of.

One WTA has concerns about the statistics for the total quantity of wood in the waste stream if virgin timber is included in the calculations. There is a need to ensure the definition of waste wood corresponds to the data.

One WTA believes the estimate should be higher than 0.6mt but does not provide any further detail on this.

One WTA identifies that the UK timber industry contains a large number of small operators, which makes gathering accurate statistics on wood waste volumes difficult. However, based on the recently published WRAP report - The Business

Case for Wood Waste Collection Hubs (2012) believes 0.6 million tonnes per year of wood waste to landfill for England alone is a plausible figure.

Related to question 1, one WTA is of the view that sawmill products (wood chips, sawdust and bark), arising from primary conversion of logs should not be considered waste.

Other trade association (1 responded yes)

One other trade association is of the opinion that uncertainty exists in the estimation of quantities of wood waste being landfilled in England. The uncertainty of the estimate should be stated so that policy decisions can take this into account (lower and upper bound analysis).

LA bodies (1 responded yes, 1 responded no)

One LA body suggested that the figure could be an overestimate as there is no evidence or data to base the exact figure on. It was suggested that the definition of wood waste could have an impact.

One LA body estimates that their collected residual wood waste is around 2% of household waste (equivalent to approximately 230K tonnes if extrapolated nationally). This is higher than the figure of 150K presented for household waste.

Waste management companies (2 responded yes)

One WM company believes the tonnages mentioned are accurate whilst the other is unable to provide any information that suggests otherwise.

Construction and demolition (2 responded no)

Two C&D companies refer to various studies on wood waste going to landfill (see Annex B: question 3 for listed studies). They believe a figure of 62, 778 tonnes show a significant amount of mixed waste going to landfill with approximately 20% of this is likely to be wood. If this is taken into account this would mean that the wood waste going to landfill in 2010 is around about 200,000 tonnes.

Energy companies (1 responded yes, 1 responded no)

One energy company believes the figure is unreliable. They are also of the opinion that there are significant quantities of “unreported” wood waste used or tipped in unregulated and un-monitored applications, either fly tipping or informal usage.

One energy company agrees with the assessment that there is 0.6mt of wood waste going to landfill. They are of the opinion that there is not sufficient data available on the nature of this waste wood. This makes it difficult to assess how practical the application of the restriction would be and what sources of demand there will be for the diverted material.

Others (1 responded no)

One organisation from this category believes that the assessment appears to be an overestimate and includes informal markets.

Environmental interest group (1 responded no)

One environmental interest group is of the opinion that whilst the estimates vary upwards from 0.6mt, the uncertainty as to the actual tonnage is not a reason for not banning wood from landfill.

Question 4: Do you agree that wood waste is going to informal markets?

Who responded?

22 responses. 5 wood trade associations, 2 other trade associations, 4 LA bodies, 3 waste management companies, 2 construction and demolition, 1 forestry industry, 2 energy companies, 1 environmental interest groups, 1 professional body and 1 “others”.

How they responded**Wood trade associations** (5 responded yes)

Four agreed that informal markets exist. One WTA suggested informal markets include export and off-cuts given to employees and others in the community. Two suggested Bonfire Night with one of these providing an estimate of about 200,000 tonnes of waste wood burned on Bonfire Night in England. Other markets included unregulated chipping and spreading on land as bedding or compost and unregulated landfill.

One WTA was of the opinion that wood waste is increasingly likely to go to informal markets to supply the increased demand for domestic fuel and small-scale biomass. It also noted that the timber processing industry is recovering co-products for manufacture of wood pellets. Another is of the opinion that the quantities involved in informal markets are relatively low. It considered that the burning of waste on-site and the use of waste wood in land recovery likely to account for the vast majority of wood being diverted to “informal markets”.

Other trade associations (2 responded yes)

One other trade association outlined informal disposal routes including: consumed at source (burning in domestic and non-domestic boilers); burning in gardens, on farms and at “events”; and know of approximately 200,000 tonnes of waste wood burned on bonfire night in England; unregulated chipping and spreading on land as bedding or compost; and unregulated landfill.

One other trade association believes that the burning of waste on-site and the use of waste wood in land recovery is likely to account for the vast majority of wood being diverted to “informal markets”.

LA bodies (3 responded yes, 1 didn't indicate a choice)

One LA body stated that evidence suggests that small quantities of wood e.g forestry residues are left in situ or used as land spread to reduce disposal costs.

One LA body believes that without a clear definition of informal markets it is impossible to offer a definitive list of these markets. They are of the opinion that informal markets include a certain amount of reuse, in and between organisations, as well as reuse at home, home composting and home burning.

One LA body believes that some waste wood is being used as landfill engineering or cover – this appears in national statistics as landfilled MSW rather than separately identified as wood waste.

One LA body is of the opinion that there is no evidence to support the statement that wood waste is going to informal markets.

Construction and demolition (2 responded yes)

One C&D company has used a third party who either sells, re-use for furniture or if in poor condition sends to energy recovery. Over a period of three year they collected over 1000 tonnes of onsite waste wood. None has gone to landfill.

One C&D company gave examples of the destinations of their wood waste as community wood recycling projects such as (www.communitywoodrecycling.org.uk)(www.educationforall.com); Greenworks (www.green-works.co.uk); and Emmaus (www.emmaus.org.uk)

Energy companies (1 responded yes, 1 did not indicate a choice)

One energy company is of the opinion that informal markets exist in the form of on and off site combustion either for process heat or simply disposal, paving and localised land recovery, composting, domestic fires and stoves fly tipping, and in mixed loads to landfill.

One energy company believes that volumes of wood waste going to informal animal bedding markets (such as cattle rearing) and land reclamation has not been accounted for because it is an area that is not closely monitored. They believe other disposal routes that can explain the unaccounted volumes includes Guy Fawkes celebrations, gate fee avoidance by burning of waste wood on demolition and construction sites and the incorporation of waste wood with sewage sludge for

agricultural fertiliser. In addition, some wood waste will be lost in mixed waste loads which will be difficult to quantify.

Forestry industry (1 responded yes)

One forestry industry representative believes that clean solid wood are given away as “wood off-cuts for fuel” similarly, shavings from small joineries/furniture producers are occasionally given for free to poultry smallholders. These are small in volume and typically supplied by small scale companies, mostly in the rural areas.

Others (1 responded but did not indicate a choice)

One organisation in this category is of the opinion that it is likely that informal markets do exist but there is no evidence as to the extent of the initiatives.

Environmental interests group (1 responded yes)

One environmental interest group stated that there are numerous adverts for the sale of second-hand wood. They refer to the BWF's (2010) '[Joinery, a Resource Efficient Action Plan](#)' which offers some relevant data on the deployment of off-cuts and machine waste.

Professional bodies (1 responded but did not indicate a choice)

One professional body would be interested in an explanation of how the remainder is used in land recovery as stated in the Call for Evidence.

Question 5: What other sources of evidence on a) wood waste arisings and b) wood waste management routes are there?

Who responded?

14 responses. 3 wood trade associations, 5 local authority bodies, 2 “others”, 1 energy company, 2 construction and demolition and 1 environmental interest group.

How they responded

Wood trade associations (3 responses)

Related to question one. One WTA was concerned that sawmill by-products is defined in the Call as wood waste but it should not be considered waste. They are of the view that if this type of wood was counted in the wood waste arisings figures then it will not provide a full picture of the state of this market. They are not aware of any of this type of wood going to landfill.

One WTA provided data on the tonnages collected by their network across the UK. They collect nearly 10,000 tonnes a year (20% of which is made available to the

public as second hand timber and timber products. This waste arises largely from the construction industry.

One WTA is content that the main sources of data on wood waste have been identified.

LA bodies (5 responses)

Three of the LA bodies gave wasteflowdata as their source of information. One LA body supported their response with some other evidence such as the compositional analysis of residual waste conducted between autumn 2009 and summer 2010. The compositional analysis showed;

- Average proportion of wood waste in kerbside residual waste across all four seasons: 3.5% (or ~4,500t wood / 130,000t total residual)
- Average proportion of wood waste in Recycling and Household Waste Sites residual waste across all four seasons: 15.8% (or ~3,200t wood / 20,000t total residual). See note³

In addition to using WasteFlowData, one LA body provided evidence gathered through a composition study (residual and recycling collections) which identified estimated treated wood (any painted or treated wood) arisings of 0.11kg/hhld/wk with 0.09kg/hhld/wk from residual waste. Untreated (untreated recyclable wood, DIY off cuts, boxes, fencing, shelves) arisings were 0.02kg/hhld/wk and mainly found in residual waste with a smaller amount in garden waste collections. As a proportion untreated wood made up 0.14% of total kerbside collected household waste. Over the 2010 study waste wood arisings made up 3.7% of HWRC residual waste including MDF and chipboard material. For 2010/11, residual HWRC arisings were 62,223 tonnes, so an estimate of 2010/11 HWRC residual waste wood arisings for Merseyside and Halton can be made of ~2,300 tonnes. Waste furniture arisings made up 9.4% of arisings in the HWRC study but there are no separate estimates for wooden furniture.

Others did not comment further.

Energy companies (1 response)

One energy company believes that existing data is unreliable but that setting up more energy recovery markets will lead to better recovery and better data management.

³ **Note:** Mixed wood separation was already being undertaken at the time of the survey. These figures include wood and cork (packaging and non-packaging), kitchen units, furniture (reusable and non-reusable), and green and woody garden waste from residual waste only.

Construction and demolition (2 responses)

C&D companies are likely to have national agreements with other organisations that will collect all types of wood waste either to be sold on or used to make new furniture. Any waste wood found to be poor condition is sent for energy recovery thereby avoiding it going to landfill. NCWRP have collected 1000 tonnes of waste wood from various sites over a period of three years.

Others (2 responses)

One respondent cited a study by BRE for Defra (2012) which needs to be validated.

Question 6: Will planned facilities be sufficient to deal with wood waste diverted from landfill?

Who responded?

20 responses. 4 wood trade associations, 1 other trade association, 3 local authorities, 3 waste management companies, 2 energy companies, 2 environmental interest groups, 2 construction and demolition, 1 forestry industry and 2 “others”.

How they responded**Wood trade associations (3 responded no, 1 did not indicate a choice)**

Three WTA responded no and did not provide further comments. One responded and was of the opinion that it is unlikely the UK demand for waste wood will exceed supply for at least 5 years because the number of biomass plant projects completed in recent years is small. In addition, they believe that the expected 2014 level of demand is sufficient to consume all waste wood generated north of the southern Midlands. However, Southern England remains heavily reliant on export to mainland Europe. The response flags that there are a number of proposed facilities in the planning and financing stages of development, and should these all become operational there would be a large excess demand for waste wood, easily consuming any material which may be land-filled today. The response mentions that the number of biomass plant projects which have come to fruition in recent years is small and believes that changes in the ROC regime combined with the challenges of raising project finance mean that it is highly unlikely that UK demand for waste wood will exceed supply for at least 5 years, perhaps more.

LA bodies (2 responded yes, 1 responded no)

No further detail provided

Waste management companies (1 responded yes, 2 did not indicate their choice)
One WM company indicated yes whilst 2 others stated they believe that there won't be enough capacity if a landfill bans where to be put in place in the future.
Moreover, the specifications for future plants should be able to handle a more diverse range of wood grades including lower grade wood streams.

Construction and demolition (2 responded no)
Energy companies (1 responded yes, 1 responded no)
Forestry industry (1 responded yes)
No further details provided from these groups

Environmental interests group (1 responded no, 1 did not indicate its choice)
One environmental interest group responded no to this question because it felt that the data gaps do not give it the confidence to respond. However, they believe that the diversion of wood from landfill will result in further capacity and possibly export opportunities. Conversely, if additional capacity is brought online to handle waste wood then existing capacity could cease operation to avoid overcapacity and inefficient recovery.

One environmental interest group believes that wood waste diverted from landfill will create opportunities to ensure that already projected renewable heat installations can provide the necessary infrastructure. They are of the opinion that opportunities will be created for WID compliant heat only biomass boilers which could use a wide range of feedstocks including all treated timber. This would take away the need for sorting of C&D waste and could also process wood from civic amenity sites that contain a higher proportion of contaminated (treated) wood waste. In addition, they believe this type of plant could be an important element in an energy centre serving a site wide power and hot water system in larger new developments as they reduce emissions towards zero carbon and reducing cost.

Others (2 responded but no indication of their choice)
One respondent was of the opinion that planned facilities won't be sufficient to deal with wood waste diverted from landfill. The other was of the opinion that planned facilities could take most of the wood waste in the UK moving waste down the hierarchy from reuse and recycling as the market price for energy recovery could dominate the marketplace without similar incentives that value embodied carbon as well as those that incentivise lower carbon electricity generation.

Question 7: Is it likely that export supply will be diverted to UK facilities?

Who responded?

21 responses. 5 wood trade associations, 2 other trade associations, 3 local authority bodies, 2 waste management companies, 2 construction and demolition, 2 energy companies, 1 forestry industry, 1 environmental interest group, 1 professional body and 2 “others”.

How they responded

Wood trade association (5 responded yes)

Although all the WTA responded yes to this question, one of which was of the view that getting the logistics right is vital. Most of the biomass capacity, existing or planned, is in the North. A high percentage of the wood waste is generated in the South. It makes more commercial sense to export from the South to Europe than to haul it to the north of the UK. Processed wood will usually go “where the money is.” One WTA responded yes to this question but did not provide supporting comments.

Other trade associations (1 responded no, 1 did not indicate their choice)

One other trade association is aware of a significant number of facilities for sorting and processing wood waste into refuse derived fuel (RDF) for UK and overseas use. This network is growing to support new supply contracts. However, they believe that the UK market is currently immature and not able to accept the variety of wood wastes to be recovered or recycled in the UK.

LA bodies (1 responded yes, 2 responded no)

No additional comments to support their answer.

Waste management companies (2 responded yes)

One was of the opinion that Government and the industry should discourage the export of wood waste.

Construction and demolition (2 responded yes)

No additional comments to support their answer.

Energy companies (2 responded no)

One energy company was of the opinion that as demand increases from the growth of the waste incineration sector the export supply market may be squeezed. However, increased UK demand will not necessarily reduce the export demand of c. 600k/t p.a. due to the logistical costs of moving waste wood within the UK. Also, it may well be that the additional wood reclaimed from landfill has a disproportionate

volume of low grade (C/D) that it is best suited to European markets where regulation is less stringent (for example biomass content requirements are lower).

Forestry industry (1 responded yes)

No additional comments to support their answer.

Environmental interest groups (1 responded yes)

One environmental interest group responded yes and was of the opinion that export diversion will depend on the commercial opportunities for UK exploitation and incentives.

Professional body (1 responded yes)

No additional comments to support their answer.

Others (1 responded but did not indicate its choice)

One respondent was of the opinion that evidence supplied shows that export supply will be diverted to UK facilities.

Question 8: Is there any risk that higher grade wood would be displaced from higher up the waste hierarchy to meet the 90% biomass required for ROCs?

Who responded?

16 responses. 4 wood trade associations, 1 other trade association, 2 LA bodies, 1 response from the waste management companies, 2 construction and demolition, 2 energy companies, 1 forestry industry, 1 environmental interest groups and 2 “others”.

How they responded

Wood trade associations (3 responded yes, 1 did not indicate its choice)

None of the three that responded yes to this question provided comments to support their choice.

One WTA is of the opinion that higher grades are unlikely to be diverted from high waste hierarchy applications specifically because of the 90% ROC limit on dedicated waste wood projects. However, diversion of material to biomass is a major concern for the panel-board industry, which sees an uneven playing field: panel-board grade wood being diverted into energy generation because of the financial impact of the government subsidy (RO). Wood from clean origins generally commands a higher market price and therefore is best considered as a substitute for virgin wood.

Historically most large biomass plants have purchased part of their feedstock from chipped round-wood to blend in to maintain the biogenic content. Most new large facilities are looking to be based around 100% Grade C waste wood. However, a potentially significant market for grade A exists in smaller scale non-WID facilities where fuel prices are more likely to be competitive with animal bedding and surface applications.

Other trade associations (1 responded yes)

LA bodies (2 responded yes)

Waste management companies (1 responded yes)

These groups provided no additional comments to support their answers.

Energy companies (2 responded yes)

One was of the opinion that if practices are poor, generators will be forced to increase their intake of higher grade materials to mitigate the risk of missing ROC eligibility criteria. The biomass content purity threshold for ROC eligibility should be revised down as 90% is a very high benchmark that may limit the most efficient use of biomass resource in the future. The percentage of low grade timber products such as MDF, which is difficult to recycle, will continue to grow and dominate the waste wood stream as more furniture products reach the end of their useful life. They believe that as demand for waste wood rises, and more contaminated fractions are recovered, biomass plant operators could be driven to use increasing proportions of virgin wood to ensure the purity threshold is met. They conclude that the Government needs to revisit the case for lowering the threshold to 85%. 85% is well clear of the biomass content for unsorted municipal solid waste (on average MSW in England contains 68% BMW (Defra, 2007)). This threshold would enhance efficiency and enable the industry to maximise use of waste-fuel grade wood.

Forestry industry (1 responded yes)

Provided no additional comments to support their answer.

Others (1 responded yes, 1 did not indicate their choice)

One was of the opinion that if the demand for wood exceeds supply then it would seem feasible that the higher grade wood would be displaced from higher up the waste hierarchy to meet the biomass required for ROCs.

One respondent refers to various studies and quotes (see annex B question 8)

- BigREc surveys (1998, 2007) and MiniREc survey completed for Defra (2012) which shows that the level of reuse of timber has fallen already.

Question 9: Do you agree with the 'business as usual' assessment above?

Who responded?

17 responses. 5 wood trade associations, 1 other trade associations, 4 LA bodies, 1 waste management companies, 2 from construction and demolition, 2 energy companies, 1 forestry industry and 1 environmental interest group.

How they responded

Wood trade associations (2 responded yes, 2 responded no and 1 did not indicate a preference)

One WTA did not indicate a choice but felt the assessment underestimated the impact of recession on wood waste arisings. They believe it should perhaps be in the region of 600,000 tonnes per annum in England. They concluded that it is likely that arisings will increase when the economy recovers.

Of the two WTAs that responded yes, one raised concerns that planned facilities may have an impact on the price of clean wood (because of a short fall in wood waste created by planned facilities). Virgin wood could become a source of electricity generation. In addition, they felt that exports of wood waste could continue especially in areas with no planned facilities. They believe the markets may become regionalised as it is not cost effective to transport wood waste over long distances. The other was of the opinion that any rise in Landfill tax and as the economic downturn continues companies are likely to look for the cheapest route to dispose of their waste.

Two WTAs responded no to the BAU assessment. One was of the opinion that in order for all wood to be diverted from landfill, the appropriate processing facilities/infrastructure needs to be in place for the lower grade material. This would likely be in the form of a network of WID compliant energy from waste units, with the capacity to accommodate a range of low grade combustible material locally. They concluded that establishing this infrastructure will require government support. The other felt that the economic growth and rate of development of WID compliant energy plant will significantly impact the rate of reduction. In addition they felt the recycling rates need to be protected from the move towards incineration of uncontaminated wood waste.

Other trade associations (1 responded yes)

One other trade association is of the opinion that the total quantity of waste wood disposed off via landfill is projected to decrease with time, with the rate of decline variable for different sectors that produce waste wood. They note that there are currently 159 operational installations (33 in planning stages) in the UK that fall

within WID. In 2011, 9 operational plant used recycled/waste wood as feedstock. They concluded that due to the existing incentives in place for renewable energy generation and landfill tax drivers, it is clear that demand for high quality waste wood shall exceed supply as they could potentially be burnt in either dedicated biomass plant or converted power plant which co-combust fossil fuel that do not need to be WID compliant. The demand for lower grades of wood waste is likely to be lower than supply (particularly Grade D) which could result in future problems for this waste stream, unless additional WID compliant incineration plant (with energy recovery) is built.

LA bodies (3 responded yes, 1 responded but did not indicate a choice)

One LA body believes that facilities planned in the UK are likely to be sufficient to deal with the volumes of waste wood diverted from landfill as the quantity of wood is small compared to the amount of planned waste capacity. Export of waste to countries such as Germany and Sweden can be prevented by uplifting the price paid for electricity/heat generated so that it is equivalent to that paid there. Some wood wastes have biomass energy content as low as 80%, so the 90% threshold cannot be met without mixing with higher grade wood. In addition, it was thought that government attention should be better focused on tackling biodegradable waste more widely.

One LA body was of the opinion that although waste production from household sources has been on the decline over recent years, there may be a reverse in this trend after the recession. It would therefore be dangerous to assume the continued decline in waste production without factoring in a 'boom rather than bust' scenario.

One LA body felt that the assessment appears robust, but landfill restrictions may not be the most effective additional policy instrument available. The merits of such available 'instruments' need to be assessed on the basis of specific materials within the wood waste and the sources of these.

One LA body did not indicate a choice but felt that clarity on the long term changes to landfill tax after it achieves the £80 per tonne level in 2014/15 is urgently needed to have any degree of confidence when estimating future wood waste levels (and indeed other waste streams). They concluded that uncertainty in the market place may make it difficult to procure medium or long term waste treatment options leading to a stagnation of diversion.

Waste management companies (1 responded yes)

One WM company responded yes and was of the opinion that there are likely to be end market problems in the short term. They have found that gate fees for grade C are being raised or recyclers are refusing grade C material and taking more of the

higher grade but the completion of the planned facilities should help redress the shortfall.

Construction and demolition (2 responded no)

Two C&D organisations disagree with the BAU assessment. Their view is that the industry has reduced the amount of wood waste produced/sent to landfill and this has been through adopting offsite construction and using wood recyclers to take away waste wood and using the pallet take-back scheme.

Energy companies (2 responded no)

Two energy companies are of the opinion that landfill tax, the end of LATS and a reduction in the ROC support levels for biomass generators are policy changes that could alter the BAU. Whilst they believe that a restriction could send a positive message to the sector, they also felt that monitoring and incentives would help enforce the value of wood waste as a commodity.

Environmental interest groups (1 responded yes)

One environmental interest group agreed with the assessment but believed that commercial incentives should drive the spread of highly efficient energy recovery in practice. They are of the opinion that if a ban is confirmed and implementation timescales set, planning for these developments can commence. They are of the opinion that there is uncertainty over the actual tonnages going to landfill and the BAU assumptions may be based on an under-estimate of benefits in some cases and over-estimates of benefits in others.

Forestry industry (1 responded no)

The respondent believed decline has been driven by reduced waste arising due to recession, export, the energy sector and RO subsidies.

Question 10: How do you see the wood waste producing sectors evolving to 2020 without further policy intervention? Please comment on sectors and treatment routes.

Who responded?

21 responses. 5 wood trade associations, 2 other trade associations, 5 LA bodies, 3 waste management companies, 2 construction and demolition, 1 energy company, 1 forestry industry, 1 “others” and 1 environmental interest group.

How they responded

Wood trade associations (5 responses)

A number mentioned that as the economy improves so will the C&D and C&I industries and wood waste arisings will increase. One believed that segregation of wood waste will improve whilst another thought that improving procedures at Civic Amenities sites and MRFs will reduce the percentage of wood waste going to landfill via that route. Two mentioned the increase in plastic pallets replacing wood, more optimisation of packaging and the likelihood that more wood waste will be burnt on site to generate heat all contributing to a reduction in arisings. One organisation commented that the amount of wood waste will decrease on account of better procurement and wood waste management. One stated that the quality of some wood waste, demolition waste in particular, is likely to decline, reflecting the increasing levels of particleboard and CCA-treated wood in construction. They also believed that Municipal levels will continue to fall as LAs work towards Landfill Directive targets. However, there will remain a need for suitable outlet for the lowest grade material. For the Joinery and furniture manufacture sector their view is that wood waste arisings are likely to fall due to a combination of the Renewable Heat Incentive, general demand for local biomass, increased resource efficiency and possibly better collection techniques that increase the viability of collection and consolidation of wood from scattered small-scale producers of high grade wood waste.

Other trade associations (2 responses)

One gave an analysis of the different sectors. In construction they suggest a linear decline in wood waste produced. The landfill tax will continue to incentivise the recycling of wood waste produced from this sector with lower grade wood waste being disposed of via landfill or sent to WID compliant combustion plant facilities whichever is the most cost-effective. For packaging they suggest that waste wood is likely to decrease with time resulting in increased recycling. For municipal waste they suggest that waste wood is also likely to decrease which may result in increased facilities for recycling, sorting and increased emphasis on segregation at source.

One was of the opinion that larger companies tend to recycle their waste wood while a smaller company will fill a general skip with their waste wood.

The other considers that landfill tax continues to be the main driver for the diversion of wood and the economics of recycling. The waste hierarchy is also a key waste legislation driver for diverting wastes such as wood from landfill however, for many producers this is a “tick box” exercise with no significant enforcement.

LA bodies (5 responses)

Some were of the opinion that activity in the construction and demolition sector is likely to decrease in the short term as the housing market struggles. It is likely that some activity will pick up in the medium term once large scale government backed

infrastructure projects get underway. The volume of high quality wood waste suitable for recycling is likely to decrease in the medium to long term reflecting the increased use of MDF and chipboard over recent years.

Others were concerned about the likely increase in the level of on-site burning of wood waste but more information will be required to ascertain the exact impact on the economy and environment. The use of low grade wood (chip board etc.) in furniture with a short lifespan to reduce manufacturing costs was also a concern. They are of the opinion that this use of low grade wood would place additional cost burdens on local authorities. Local authorities will continue to manage wood waste in line with the waste hierarchy and will seek to identify the best-value for money solutions available. They believe some HWRCs already segregate wood waste and are engaging proactively with furniture reuse services.

Waste management companies (2 responses)

Two of the WM companies believe that landfill tax and the waste hierarchy continue to be the driver for diverting waste from landfill. Of the two, one was of the opinion that a review of the landfill tax would be advisable.

Another stated that they expected wood waste from packaging to fall up to 2020, municipal wood waste to remain the same over the next few years and wood waste from joinery to fall up to 2020.

Construction and demolition (2 responses)

The C&D sector believes the amount of waste wood produced as a result of new construction work will decline. This is because the need for companies to meet their environmental objective to reduce waste and increased waste disposal costs. They are working with their suppliers to move away from “one use” pallets and provide branded reusable pallets returned to the supplier directly, through a third party or take back schemes. They believe clear targets will help reduce waste in the sector.

Energy companies (1 response)

The energy company was of the opinion that without policy intervention to incentivise source segregation and/or penalise landfilling no change is likely to take place in the volumes of material collected from Civic Amenity sites or separated from black bin waste. They also believe that for smaller quantities of waste a reliance on the disposer to take it to a Civic Amenities site or to dispose by burning will not change either without intervention that enables these waste producers to realise the value of waste wood.

Forestry industry (1 response)

The forestry industry representative believes that the increased use of wood products in construction industry is driven by low carbon incentives and that more emphasis is needed at resource efficiency and segregation at source. This will help to minimise the waste management costs for large companies.

It is thought that increasing the focus on re-use, recycling and repair of pallets would be good and a decline in waste arising can be expected. In the municipal sector there is an expectation that more furniture will be re-used. They are of the opinion that any increase in economic activity is likely to be off-set by waste prevention and reduction measures, as well as greater resource efficiency.

Environmental interest group (1 response)

The environmental interest group are of the opinion that evidence seems to be showing that waste volumes in general looks to be declining and that this predates the recession.

Others (1 response)

A respondent from the others category would like to think that the relevant sector would be able to provide a better managed, more reliable quality defined “product”.

Question 11: What evidence do you have regarding any potential for further diversion of wood waste over and above the BAU trend?

Who responded?

13 responses. 1 wood trade association, 3 LA bodies, 1 waste management company, 2 construction and demolition, 1 energy company, 1 forestry industry, 3 “others” and 1 environmental interest group.

How they responded**Wood trade associations** (1 response)

One WTA is of the opinion that unless specific disposal routes are monitored there is no incentive to separate the waste wood from general waste.

LA bodies (3 responses)

One LA body is of the opinion that further diversion over and above the BAU trend will depend on diversion of biodegradable waste from landfill to energy from waste facilities. They believe that the volume of wood waste that will be recovered from a

landfill ban will not be sufficient to financially drive the development of facilities. They urge the Government to consider an increase in landfill tax beyond £80/tonne or a complete ban on biodegradable wastes. However, the LA body is of the view that the relatively small volumes of wood waste landfilled means that a landfill ban on its own will be ineffective in driving changes. Government should instead consider increasing landfill tax beyond £80/tonne in the immediate future (from 2014/15) and announce a phased introduction of a complete ban on biodegradable wastes.

Another expects further developments in the reuse sector which would affect a relatively small tonnage of wood waste but it is appropriate to recognise its importance as a high-profile and growing diversion route.

Energy companies (1 response)

The response mentioned research by Npower which suggests that between now and 2016 there will be 800~1200k/t of increased demand for UK waste wood from UK and EU waste wood power plants under construction.

Forestry industry (1 response)

The forestry industry representative is of the opinion that landfill bans need to be accompanied by regulations on wood waste segregation at source, clear regulations not guidelines on assignment of different types of wood to appropriate grades, regulations on preferred management/disposal routes for different grades, that would take into the account the waste hierarchy, where energy recovery and incineration should be ranked below re-use, recycling and recovery into material products i.e. panel board, animal bedding, mulch etc.

Waste management companies (1 response)

The WM company stated that any growth in MBT in England may help divert more wood waste from landfill. They expect an EFW plant capable of taking low grade wood to be built in their area in approximately two years, but feel that localised public opposition to new incinerators and the current economic situation may impact the development of biomass energy facilities and it may not be possible to build even 25% of planned facilities thereby reducing the availability of this route to replace landfill.

Construction and demolition (2 responded)

One C&D company believes that there are clear target/measures are already in place to reduce packaging waste through the use of more reusable packaging. Both mention that manufacturers are using more branded reusable pallets, which are collected and reused in their current form. This trend is likely to increase with industry pressure.

Another is also of the opinion that the amount of waste wood produced in the sector will decline. This is a result of increased waste disposal costs and the need for companies to meet environmental objectives to reduce waste.

Others

One respondent in this category believes that wood waste can be utilised in land restoration (to ecological but non-agricultural status) on closed mineral (china clay) extraction sites. They state that shredded and chipped wood is a key constituent of the soil manufacture and structure. They are of the opinion that the lack of practical and pragmatic guidelines on the suitability of specific wood waste streams and the lack of traceability of these streams in the wood recycling sector seriously restricts the availability of material and restricts the use of this resource. They believe that suitable wood for their use is frequently sent to other disposal and recycling routes including landfill.

Another respondent states that a considerable quantity of waste woods can be chopped and combined with cement to make a very strong and lightweight building block.

Question 12: Are there any other costs and benefits to consider?

Who responded?

14 responses. 4 wood trade associations, 4 LA bodies, 1 waste management company, 2 construction and demolition, 1 forestry industry, 1 environmental interest group and 1 “others”.

How they responded

Wood trade associations (2 responded yes, 1 responded no and 1 did not indicate a choice)

One WTA added a cost benefit of improved processing to remove ferrous and non-ferrous metals will be a revenue stream for the processor. They state up to 3% metallic content in processed wood, 60% of which is generally aluminium that trades at around £800 per tonne.

Another WTA suggests the economic benefit and job creation facilitated by recycling wood waste should be considered. They say using waste to produce wood products generates more jobs than using that wood for energy and this should be incentivised.

One suggested the cost and benefit of the locking up of carbon, and the use of wood as a raw material for products including joinery, timber frame buildings, furniture, flooring, fuel, and paper.

One WTA believes that there are benefits to local wood recycling organisations who can operate at a level of lower cost and make wood recycling financially viable. Benefits include the reduction of waste going to landfill, the reduction of fossil fuel used in power stations and to the economy in small scale incinerators used for generating local power.

LA bodies (4 responded yes)

One LA body suggests the relative benefit of banning other biodegradable wastes should be considered. Another suggested other benefits from alternative approaches, including many social, environmental and economic benefits resulting from reuse as identified in the WRAP report “Benefits of reusing and recycling bulky waste”. They state this would support the view that reuse should play an important role in wood waste diversion from landfill.

The third was of the view that any alternative facilities to landfill provided need to be equitably spread so that the financial burden to find alternatives to landfill (particularly if economic or legal drivers are introduced or enforced) is not unfairly attributed. As the provision of such alternatives will be driven by the industry, they thought some form of additional Government incentive may need to be introduced to encourage development in those areas of the UK not currently well provided with alternatives.

The fourth proposed the costs of dealing with mixed waste loads arriving in landfills but rejected due to containing a wood waste fraction should be considered.

Waste management companies (1 responded yes)

One WM company stated that local outlets for wood waste have increased their gate fees and/or stopped taking lower grades altogether. A major cost would therefore be a dependence on outlets that may increase prices or stop taking material at short notice, with no other recourse than to stock pile if there is no landfill or local biomass energy facility. This stock piling would also create a fire hazard. A benefit would be an increase in employment in the wood recycling and biofuel sectors with no reduction of employment within landfills.

Construction and demolition (2 responded yes)

Both are of the opinion that there will be increased management and labour costs on site in order to segregate wood waste from other waste streams.

Forestry industry (1 responded yes)

The response suggests benefits include: preservation of natural resources thus minimising habitat destruction and the loss of biodiversity and soil erosion; increased availability of domestically sourced wood for various users; sustainable use of available resources, and wood waste segregation and recycling infrastructure will create new jobs. Costs include: increased transport costs if local supply of wood waste is limited, and developing the infrastructure and training.

Environmental interests group (1 responded yes)

The group stated whilst the benefits of banning wood from landfill may be overestimated there was an underestimation in the potential environmental benefits achievable by best use of the diverted wood. They believe if more wood waste is recycled then wood imports will fall. A landfill ban/restriction is not the only way to reduce (waste) wood import. Any approach that internalises the externalities of waste management/ energy generation would promote more efficient management of waste and more environmentally responsible energy generation.

They are of the opinion that a ban on the landfilling of waste wood could also result in more energy recovery capacity (e.g. due to increased certainty with regards to domestic feedstock) which, in turn, could result in more imports (especially if the domestic feedstock volumes end up not being as much as anticipated). Additional incineration would bring with it additional environmental and social costs. They also state that consideration should be given to evidence that burning treated waste may result in more harmful emissions than burning virgin wood. The environmental and social cost of both incineration and policies that promote incineration should not be underestimated.

Others (1 responded but did not indicate a choice)

One respondent from this category is of the opinion that if wood waste becomes too expensive to utilise in the land restoration activity then more environmentally damaging material (eg commercial manufactured fertilisers) will be used or the land restoration activity will totally cease leading to environmental degradation of the mineral site. The life cycle of each use would ideally be considered in the Cost and Benefits Analysis.

Question 13: Is this a reasonable representative cost (and range) for collection, sorting and onward transportation from HWRCs?

Who responded?

12 responses. 1 wood trade association, 1 other trade association, 6 LA bodies, 1 energy company, 1 forestry industry, 1 waste management company and 1 environmental interests group.

How they responded

Wood trade associations (1 response)

The WTA responded that variations in onward management costs are wide so the reliability of the statistics should be questioned. They suggest an approach that differentiates between the various end markets to take account of different prices and production costs.

Other trade associations (1 response)

The other trade association agreed that the cost ranges appear to be reasonable.

LA bodies (6 responses)

All the LA bodies broadly agreed with the figures quoted. However, 3 of them also provided some additional information.

According to One LA body the figures are historically similar to the gate fees they pay (including transport) however gate fees have recently increased due to a supply and demand mismatch with the current gate fee around £65-£70/tonne. The waste counts as recycling, with 30% recycled into new wood products and 70% prepared as RDF for export abroad. Transport costs are paid in addition.

Another One LA body believes that there may be some hidden contractual costs associated with the diversion of wood waste up the hierarchy. Some contracts have an incentive to recycle or recover. Any contractual costs are bound to have an impact on any decision to introduce a policy instrument.

One also pointed out that in many cases further diversion of this waste from HWRC Residual Waste streams will shift some costs from one stream to the other which should result in savings through reduced disposal fees (although the extent should be estimated with caution).

One LA body believes the costs ranges are likely to be representative of treatment of wood waste to recycling and/or biomass facilities. However, if local composting facilities are available then the costs of treatment and haulage are likely to reduce

the lower end of the range by between £10 and £15 per tonne. The range also assumes no costs have been taken into account for management of the HWRCs and that all types of wood are mixed into one container or area. If separation of wood grades is required then this is likely to have a significant increase in revenue cost for managing the separation as well as increasing the capital costs of providing additional storage areas. In such circumstances the range proposed is likely to be too low.

Energy companies (1 response)

The respondent agrees with the cost range for the management of timber from HWRC's as this reflects their experience. However, they disagreed with the range quoted for gate fees paid for end markets.

Waste management companies (1 response)

The WM company disagreed with the costs cited. They currently pay a higher than cited gate fee of £45/t to two outlets, which they do not expect to fall and have not come across any negative gate fees. They also outline transport costs in the region of £30/t (£300 per lorry holding 10 tonnes of shredded timber waste) which means a higher management fee than the range quoted. They also state that even if the cost of collection, sorting, transport and gate fees combined are less than landfill charges (with tax), if wood reprocessors are unable to accept certain grades as is currently happening, then this material will have to be landfilled.

Forestry industry (1 response)

The respondent disagreed and provided figures. As collection of wood waste is typically within 30 miles from the processing facility transport costs are approximately £10/t. The processing costs range from £7-25/t depending on the quality of the input material. Transport to end-users is usually about 100 miles with transport costs £10-15/t paid by either end-user or either wood recycler.

Environmental interests group (1 response)

One environmental interest group is of the opinion that these costs appear to reflect gate fees for incinerators. If this is the case, they disagree with the assumption that diverted wood waste in general is to be incinerated.

Question 14: Do the cost and benefits estimates in table 6 look reasonable from your knowledge? Please also comment on the variability of costs across and within sectors

Who responded?

12 responses. 3 wood trade associations, 1 other trade association, 4 LA bodies, 2 construction and demolition, 1 waste management company and 1 environmental interest group.

How they responded

Wood trade associations (2 responded yes, 1 did not indicate a preference)

One WTA questioned Defra's preferred model (where the benefits of diversion are lower) to the Eunomia model.

Another WTA supported the analysis that there is an environmental case for recycling wood waste into wood products, ahead of energy recovery, and believes that measures to increase and incentivise recycling must be prioritised.

Other trade associations (1 responded yes)

No additional comments to support their answer.

LA bodies (2 responded yes, 1 responded no and another did not indicate their choice)

One LA body was of the opinion that some waste wood is separated and taken for composting from HWRCs as this is more cost effective than landfilling; hence the additional cost highlighted is correct. If the figures were to include all wood waste currently landfilled or composted then there is likely to be an overall cost increase, but they have no information as to whether the additional cost proposed is reasonable.

One LA body was of the opinion that the estimates were reasonable, although the wood waste costs via household sources may be slightly underestimated.

Construction and demolition (2 responded)

Both C&D companies are of the opinion that waste disposal costs are higher in the South compared to the North.

Environmental interests group (1 responded)

The group disagreed with the assumption and stated that the Government should be ensuring that we get the most energy out of waste and not the most waste into

energy recovery. They want to see the Government put into place systems to prevent or disincentivise energy recovery processes that fail to recover a significant portion of the energy.

Question 15: Is it right to assume that most of the additional landfill diversion is likely to come through energy recovery via incineration, suggesting that most of the available tonnage is likely to be of low grade?

Who responded?

18 responses. 6 wood trade associations, 1 other trade association, 5 LA bodies, 1 response from waste management companies, 1 construction and demolition, 1 energy company, 1 forestry industry, 1 “others” and 1 environmental interest group.

How they responded

Wood trade associations (3 responded yes, 2 responded no and 1 did not indicate their choice)

Three of the responding WTAs felt this was a fair assumption. Of these One was of the opinion that there is a lack of information and data collection on the quantity of wood waste generated by joinery and wood products manufacturers. Higher quality wood waste is rarely taken to landfill, although in summer some manufacturers lack adequate storage space and will be unable to use it for heating. Significant volumes of solid wood have been replaced with wood-based panels and engineered wood products, so panels will feature more prominently in future waste streams. As panels are not readily recyclable back into similar products, incineration is likely to feature strongly in their diversion from landfill. There may be potential to re-use some engineered products.

One felt that there are no ready recycling markets for the lowest grades of wood waste, so incineration is likely to be the main option. They also stated that the quality of the wood waste stream is likely to deteriorate during the next few decades with greater use of panels and engineered products. In addition hazardous CCA treated wood waste is likely to enter the waste stream in growing volumes in the next few decades.

One did not actually state whether they agreed but did respond that they believe there is scope for greater recovery of waste wood from the waste stream and its use as a renewable fuel, for heat and/or power generation purposes.

Of those who responded no, One agreed that most diversion for lower grade wood is likely to come through energy recovery but that there is room for growth in the wood panel market, if suitable wood waste is made available. They also mention non WID biomass plants using higher grade wood waste which has been diverted from recycling.

Another mentioned their experience of construction industry waste since 1998 which showed that 20% of wood waste being thrown away has re-use potential. They believe that there is a large volume of timber that is suitable for recovery and re-use from the construction industry. With the creation of local wood recycling units in every major conurbation this could recover over 20,000 tonnes per year.

Other trade associations (1 responded yes)

One other trade association was of the opinion that additional diversion may come through recovery via incineration assuming that sufficient capacity already exists or will be in place to deal with the quantities of low grade waste wood produced.

LA bodies (3 responded yes, 2 did not indicate their preference)

Most of the LA bodies are of the opinion that incineration will play an increasingly important role in landfill diversion, particularly where wood waste is contaminated or cannot practically be separated into different grades.

One mentions sorting of wood waste can be extremely challenging for particular sectors, and where sorting capacity is not available, this could lead to the waste being incinerated as the quality cannot be guaranteed. However, care must also be taken over assumptions made around available incineration capacity.

One LA body trialled wood only loads to a municipal Energy from Waste (EfW) facility, but this was not successful as the facility was not able to accommodate the high calorific value of the separated mixed wood waste. The trial indicated pre-treatment and mixing with other waste would be required in order for this option to be workable.

Energy companies (1 responded yes)

The company agreed that more wood waste will be diverted to incineration but stated that there is not sufficient data available on the nature of the wood materials going to landfill. They believe that the energy recovery facilities which is planned to come on line should cope with increased volume of low grade timber caution will however need to be exercised if the current 90% biomass threshold is to be maintained. They are of the view that the UK and European market will see considerable new demand created over the next 2 years via energy generation. It consume around 550kt/annum when operational providing a recovery route for the majority of harder

to sort low grade timber waste currently going to landfill. Therefore a restriction would as per The Waste Hierarchy prevent a resource going to landfill, forcing producers to act responsibly.

Forestry industry (1 responded yes)

The forestry industry representative agreed stating that most Grade A and B wood waste is already consumed by panelboard manufacturers, energy, and agricultural users. Some of Grade C is consumed for energy either in the UK or exported to Europe. Some Grade D is incinerated in the UK.

Waste management companies (1 response)

The company agrees with the assumption. For them Grade C material poses the greatest problem as end markets are almost non-existent and it's difficult to separate. It is of the opinion that grade D material will present even greater problems of disposal if there were a landfill ban. They compost large amounts of their wood waste. Municipal wood waste goes to an MBT eventually ending up in landfill although they are investigating its use as an RDF. They know of a contractor who composts all wood waste to produce a material specifically for the restoration of landfill.

Question 16: Do you have any comments on the GHG estimates in table 7?

Who responded?

7 responses. 1 wood trade association, 1 LA body, 1 forestry industry, 1 waste management company, 2 environmental interest groups and 1 "others".

How they responded

Wood trade associations (1 response)

The WTA was of the opinion that recycled wood used in construction products may extend the period of carbon sequestration further by several decades and will still be available for energy recovery at end of life. It believes there is no clear understanding of how wood behaves in UK landfill, although degradation is likely to be low, and further research is needed. Whilst agreeing that wood waste has a clear role to play in the UK energy generation mix, it states that the relative merits of off-setting against fossil fuels will decrease as the UK grid becomes decarbonised.

LA bodies (1 response)

The responding LA body stated that the table presented in the call suggests that wood recycling is more beneficial. They believe the energy benefits of energy from waste and wood recycling are similar.

Forestry industry (1 response)

The respondent stated that too much importance is placed on GHG emissions from landfill and there should be focus on capturing carbon storage benefits from material recycling and/or GHG benefits from avoiding harvesting virgin materials.

Waste management companies (1 response)

One WM company said they were unable to answer this question because they were unable to estimate the GHG emissions from biomass energy facilities versus wood recycling.

Environmental interests group (2 responses)

One of the respondents felt that the AEA assumptions (on behaviour of wood waste in landfill, emissions factors and energy recovery), should be questioned. They believe the benefits from offset imports do not appear to have been considered.

The other is of the opinion that the estimates have ignored the use of wood fuel for heat, believing that using wood for heating is more efficient than using wood to generate electricity. Each tonne of wood used for heat displaces 57 per cent more CO₂ per useful unit of energy than if wood is burned to produce electricity. A table summarising implications for CO₂ savings is available at annex B.

Others (1 response)

The response states that increased recovery to land would not significantly reduce the gross methane production headlined in the table provided in the call but it could alter the rate of production of the gas and it has significant additional environmental benefits by supporting increased vegetative cover and biodiversity – the former serving to potentially offset some of the global warming potential.

Question 17: Can wood waste mixed with other waste streams be separated? Please comment on a) practicality and b) cost

Who responded?

22 responses. 6 wood trade associations, 2 other trade associations, 5 LA bodies, 3 waste management companies, 2 construction and demolition, 1 energy company, 1 forestry industry, 1 “others” and 1 environmental interest group.

How they responded

Wood trade associations (4 responded yes, 2 did not indicate a preference)

Most of the WTAs responded yes stating that in most cases it is technically possible to separate out the bulk of wood waste from other waste streams. A couple flagged the potential extra cost (One mentions needing more specialist staff and training to do so) although two also mentioned that segregation at source is the cheapest route.

One respondent noted that social firms with low overheads can collect and recycle smaller volumes which are not of interest to large commercial skip hire companies or cost prohibitive to the producer.

One respondent provided details of the recycling process where metals can be removed, and the use of picking stations or density based separation systems to remove other waste materials such as plastics. The degree of separation will depend on volumes, cost, perceived benefit and resources (e.g. a recycler will probably decide that it is not worth dismantling upholstery, where the wood element is very difficult to separate out). The respondent also flagged that most end markets for waste wood have tolerances for non-wood contamination under 1-2%.

Other trade associations (1 responded yes, 1 did not indicate a preference)

One other trade association agrees in principle however, it believes that additional costs are associated with undertaking additional sorting and segregation activities. Tests will need to be undertaken to identify different treatments and therefore allow better separation of the grades. It did not provide any comments on the costs associated with different separation options.

One other trade association felt that clarity on what is included in Defra 's definition of wood waste is key to avoiding significant difficulties at the various stage of collection, sorting and processing phase.

LA bodies (2 responded yes, 2 responded no, and 1 did not indicate a preference)

The LA bodies had concerns around the practicality and cost of segregating wood waste. three mention the need for source segregation.

One LA body flagged the bulky nature of wood waste meaning it needs to be shredded before a degree of separation can be achieved. It is common to separate metals from wood, and fairly easy to separate wood from grit/stones using trommel screens. They concluded that shredding waste increases the consistency by reducing differences which allow wastes to be mechanically separated.

Another notes that the extent of the challenge to the industry will depend on the nature of any restriction. Garden waste placed in residual bins will pose challenges

in separating 'woody' material from foliage or grass. It suggests a restriction does not require kerbside collected municipal waste to be sorted, as this will require a significant investment in infrastructure and an on-going cost to local authorities to extract only a very small tonnage of wood waste. Another challenge is the lack of space which will make on-site sorting impractical in many cases. The LA body believes a complete landfill ban on wood waste will result in having to pre-treat all residual household and commercial waste collected or managed by local authorities; this is likely to significantly increase costs to such authorities.

One LA body was of the view that it would not be practical or economic because the majority of waste wood not separated at Household Waste and Recycling Centres (HWRCs) will make up part of the residual waste stream. The residual stream should be used to create solid recovered fuel (SRF) which can be sent to an energy recovery facility, thereby maximising diversion of waste wood to landfill. Under the Renewables Obligation Order (2011), this proportion of fuel would be considered to be biogenic in nature and would therefore contribute significantly towards meeting the UK's renewable energy ambitions.

Another LA body is of the view that some separation of wood waste will always be achievable, and is already being encouraged through drivers such as the landfill tax, minimising treatment fees, and s legislation. For them separation will be limited where wood forms part of bulky items such as furniture, not all which can be re-used. Alternative treatment options will be required if total landfill diversion of wood waste is to be achieved.

Waste management companies (1 responded yes, 2 did not indicate a preference)

One WM company had the view that furniture items, whilst primarily metal or material, had small amounts of wood which would be difficult to separate. When wood waste is contaminated with such other materials this may make it impractical to re-use, recycle or recover. They believe an absolute ban on wood waste going to landfill would provide significant difficulties and increase the cost to UK businesses in comparison to those within the EU and elsewhere in the global economy.

Another was of the opinion that separating wood waste from other waste streams is complex and dependent on a range of factors including volumes, size and types of wood and other materials, and intended end-use. Their view is that apart from being impractical, the environmental, social and economic benefit of applying a restriction to mixed loads is unclear.

One WM company notes that it is only worthwhile separating wood from other wastes if there is a ready market for the material and if it is cost effective.

Construction and demolition (2 responses)

C&D industry respondents are of the opinion that wood waste segregation onsite is bound to incur additional labour and supervisory costs and noted the difficulties of doing so where there is constrained space. Whilst mentioning the increase in segregation of wood waste to meet recycling targets. In addition One flagged the large number of wood composite products that will be extremely difficult and time consuming to separate into different components, meaning that disposal of these items may become very expensive, leading to illegal disposal.

Energy companies (1 response)

The energy company's view was that the current re-processing infrastructure used by the waste and wood recycling industry can be further utilised and expanded to meet the proposed restriction and fresh demand. They believe a restriction is a good idea as it would either force the waste producer to segregate at source or rely on the service of a waste management company to sort on their behalf. Both these options will increase costs but the producer will realise a saving from a decrease in landfill costs. For the purpose of energy recovery, Grade D wood waste needs to be extracted but there is no need for further segregation.

Forestry industry (1 response)

The forestry industry respondent stated that separation at source is the best management option and easily achieved by manufacturing, packaging and construction industries of any scale. Separation of wood from mixed streams would require more manual labour, thus labour costs would rise. They conclude that other industries would not require additional labour but there may be training costs.

Others (1 response)

An organisation from this category felt that there is room for improvement.

Environmental interest groups (1 response)

One environmental interest group is of the opinion that it should be practicable to separate wood from other building/construction waste, dependant on the size(s) of the wood concerned. They believe it is reasonable to expect 100% recovery of waste wood in some industries, in others, such as demolition, a small % loss will have to be accepted as inevitable and this will be 'recycled' in many cases as aggregate. Any mixing of waste streams inevitably brings contamination and loss of value even if it is possible to mechanically separate. Their view is that wood waste must be segregated at source and not mixed with other waste streams. They believe that mechanised detection/separation technologies will develop in due course.

Question 18: Can different grades of wood waste be separated? Please comment on a) practicality and b) cost

Who responded?

19 responses. 6 wood trade associations, 1 other trade association, 5 LA bodies, 1 waste management company, 1 energy company, 1 forestry industry, 2 construction and demolition, 1 environmental interest group and 1 “others”.

How they responded

Wood trade associations (6 responses)

One WTA is of the opinion that it should be possible to separate visually identifiable grade D from other grades. Grade B and C material can also be visually identified and separated but much is dependent upon the practice of wood treatment companies in segregating material at source. Many wood treatments are uncoloured and identification is not easy once it is mixed with clean wood.

One WTA is of the opinion that currently there are no effective technologies to separate the different grades of waste wood on an industrial scale so separation is mainly manual. Differentially priced markets for different grades make it economically sound for either waste generators or wood recyclers to segregate grades. In their opinion as the price differentials between grade B (panel-board) and Grade C (biomass) markets are often small when demand is strong segregation tends to reduce, and when demand is weak (and panel-board mills tighten up their specifications) segregation increases. However, if, as predicted, demand in the market for biomass grade material increases, the degree of segregation is likely to fall unless a significant price differential between panel-board feedstock and biomass fuel is established.

One WTA is of the view that separation depends on the material. If the majority is packaging then it is readily identifiable, but if the wood waste has been through a shredding station then it is impossible to further segregate it. They conclude that in some cases once consolidation has taken place, identifying ‘treated’ wood consistently is virtually impossible.

One WTA writes that whilst there is scope for on-site segregation through provision of specific collection vessels for different grades of wood waste, the effectiveness of segregation depends on available space, training and the capacity to enforce segregation. They noted that whilst manual picking lines provide further opportunities manual segregation is prone to error and some treatments are difficult to distinguish as many modern organic-based wood preservatives are visually undetectable. Although, there are indicator dyes and scanning technologies that

may be able to detect both metal-based and organic-based treatments as wood passes on a conveyor, there is no system that will fully meet the requirements of the UK wood recycling sector without further development.

One WTA described how they separate manually as they deal with small quantities a van load at a time. This allows higher value, re-usable timber to be separated. For them the cost of separation performed as low skill employment creates opportunities within the local economy.

Other trade associations (1 response)

One other trade association is of the opinion that the different grades of waste wood can be separated. However, this is not always straight forward and not undertaken on a consistent basis by all producers or processors. Downstream users of the material need to have confidence in the quality of the waste they receive.

LA bodies (5 responses)

Three LA bodies raised difficulties with separating wood waste grades at HWRC including lack of space.

One LA body is of the view that uncontaminated wood can be separated. It mentions that the problem is separating contaminated wood (Grades C and D) from uncontaminated wood.

One LA body was of the opinion that it may be technically feasible (but expensive) to separate different grades of wood waste if undertaken at treatment facilities; but is unlikely to be feasible at kerbside or at HWRCs (where the public are unlikely to correctly separate wood waste into grades requiring LAs to undertake the separation). If a restriction applied to kerbside wood waste this would result in significant cost and could compromise the efficiency of bulky waste collections.

One LA body outlined their own practice where they do not separate waste wood into different grades because very small quantities of high grade wood waste are collected at HWRCs, the key wood reprocessors in the region do not accept high grade wood waste from HWRCs due to potential contamination. One LA body states significant resources including additional trained staff and the provision of additional space would be required.

One LA body feels that greater choice of outlets available for higher grades of wood waste is already encouraging separation by grade, although this is always dependent on a balance of financial benefits versus the additional practical requirements of separation; containerisation, transportation and available space.

Waste management companies (1 response)

The WM company undertakes minimal sorting of mixed wood waste loads to remove any contaminants of high grade wood waste or remove obvious grade A wood from household material (mainly grade C). They believe this is cost effective since it maintains the value of the high grade wood. After sorting they shred the wood ready for transport to the end processors. They are not aware of any specific machinery that will separate different grades from mixed wood loads.

Construction and demolition (2 responses)

One C&D company state that separating different grades of wood on a construction project can be difficult as operatives may not have the knowledge to segregate high and low grade wood waste. They are of the opinion that it is almost impossible from a visual inspection to separate treated and untreated wood waste off cuts. As some organisations will collect wood waste and sort and stack it on a flat bed truck this is cheaper than using a skip which results in void space which the C&D company ultimately pay for. Disposal costs are normally per skip, rather than per tonne.

The other C&D company is of the view that separation would be very difficult to achieve on construction sites in most cases. The only area of success has been segregating pallets for reuse in their original form.

Energy companies (1 response)

The respondent is of the opinion that separating different grades of wood is technically and commercially feasible. The grading system developed by the wood recycling industry is commonly accepted by producers and end users. Each grade has a commercial value and is priced accordingly throughout the chain. On a practical level for the purpose of energy recovery, Grade D wood needs to be extracted but there is no need for further segregation. In reality this makes the sorting process easier in order to divert the remaining lower grade wood going to landfill.

Forestry industry (1 response)

The respondent is of the view that separation is feasible especially in manufacturing, packaging and construction. The main requirement is segregation at source, as grades can be attributed to wood types and end-use application, similar as in Germany. In case of demolition and municipal waste, some volumes can be separated based on visual inspection, while others may require some sort of testing with hand-held devices (spectrometer). Large volumes of wood waste arising from these streams could automatically be described as grade C. This requires training on wood types, testing methods and recognising contaminated and hazardous wood waste. There will be training and container costs.

Environmental interest groups (1 response)

The respondent is of the opinion that whilst the separation process may not be an exact science, it appears to be well established in many areas, except perhaps with SMEs. Additional training will be required but the advantage of a ban will come from diverting wood from landfill rather than grading of the diverted wood. Detection of treated wood is a key issue. Producers of waste wood will need to install the appropriate procedures at their workplaces.

Others (1 response)

The respondent states that it will make no difference to a [construction] site agent whether he instructs his labourer to put wood in a separate bag or in the skip.

Question 19: Is the grading system effective for identifying suitability for different end uses?

Who responded?

18 responses. 5 wood trade associations, 1 other trade association, 3 LA bodies, 1 waste management company, 2 construction and demolition, 1 energy company, 1 forestry industry, 1 environmental interest group, 1 professional body and 2 “others”.

How they responded

Wood trade associations (5 responses)

Four of the five WTA agree that the grading system is effective, although three responded yes, one states it could go further.

One WTA refers to the quality protocol on wood waste and the idea of taking a de minimis approach to non-visible preservative. They state that materials such as pallets are at risk of being excluded from ongoing discussions on a quality protocol and this is likely to add to the pressure on other disposal routes.

One WTA is of the view that the WRA grading structure is widely although not universally accepted as the best available grading structure.

One WTA is of the opinion that the potential end-uses need to be better highlighted and wood waste grading must be made as easy as possible, with particular emphasis on treated wood, which is often categorised as hazardous due to lack of information. It believes that clear guidance will better incentivise technologies that overcome emissions problems, enabling the UK to find a sustainable use for even the lowest grade of wood waste.

One WTA is of the view that whilst the grading system gives an indication of quality, many purchasers have their own individual specifications which may not be fully aligned with the standard grading system. In addition, high grade recycled wood fibre may be suitable for several applications hence concern from the UK particleboard sector that they may be competing for material with a biomass sector which is supported by the Renewables Obligation.

The WTA which disagreed stated higher grade material can frequently be found mixed with lower grades and that the WRA grading system doesn't on its own meet the purchasing specifications of downstream processors, who have to further process the material to prepare it for use in products.

Other trade associations (1 response)

The other trade association stated that identifying treatment and applying grading is not straightforward due to the different chemical compounds used because visual observation cannot identify them and because some end markets cannot take them. They stated that users need to have confidence in the quality of the waste and in this context the respondent is of the opinion that the development of end-of-waste criteria for selected wood waste streams would be beneficial and would improve alternative non-landfill options to landfill. They believe the EA's Position Statement on the environmental regulation of wood is in contrast to the statement in the Waste Framework Directive (WFD).

LA bodies (3 responses)

Two LA bodies believe the grading system is simple and clear.

One LA body is of the opinion that the system is largely unused for municipal wood waste, with HWRCs using basic separation of either one or two wood waste streams; often referred to as 'wood/timber' and 'chipboard'. This is usually based on a combination of available outlets, cost and available space on each site.

Waste management companies (1 response)

The respondent believes the grading system is suitable.

Construction and demolition (2 responses)

Two C&D companies agreed but didn't provide any comment to support their choice.

Forestry industry (1 response)

The respondent is of the opinion that the grading system needs to be accompanied by regulations on end-use hierarchy. Also subsidies to energy generation could be available to those who use lower quality wood that is not suitable as an industrial raw material.

Environmental interest groups (1 response)

The respondent suggested that customers for waste wood are those who should influence the grading system.

Professional bodies (1 response)

The respondent is of the opinion that the inconsistency of the PAS system is hampering the market. They believe a PAS developed by the industry association will be accepted and resolve the lack of consistency.

Others (1 response)

The respondent is of the opinion that Grade 'A' wood waste should be classified as wood for re-use.

Question 20: What are the key issues in separating wood waste in addition to those mentioned above?

Who responded?

18 responses. 6 wood trade associations, 1 other trade association, 4 LA bodies, 1 waste management company, 2 construction and demolition, 1 energy company, 1 forestry industry, 1 environmental interest group and 1 "others".

How they responded**Wood trade associations** (6 responses)

Most of the WTA agree that cost, identification of wood treatments and an effective supply chain are key issues in separating wood waste. Also identified by some were, waste regulation bureaucracy and confidence in the quality of waste. Some others identified, space to sort waste, seasonality meaning that at some times of the year there was an over-supply of wood waste resulting in lower rates of separation, and developing techniques that are commercially viable for the UK. One outlined that materials that could be re-used are being damaged by extraction or storage.

Other trade associations (1 response)

One other trade association was of the opinion that downstream users of wood waste need to have confidence in the quality of waste that they receive otherwise market confidence is undermined which may deter future investment in infrastructure. They state that it is important that robust, risk based, cost effective solutions can be implemented to separate the waste wood into different fractions which are appropriate for the proposed down-stream uses of this material.

LA bodies (4 responses)

Three of the four LA bodies identified source separation as a solution.

One LA body is of the opinion that the main issue is contamination of higher grade wood waste by lower grades. Once contaminated that usually means it is only suitable for the lower grade applications.

One LA body concludes that the main issues are around practicality and cost, although the extent to which these are an issue will depend on the nature of any restriction. A full restriction on mixed municipal waste will be particularly challenging. Consideration needs to be given to the inherent challenges in sorting waste of a composite nature, the provision of infrastructure for separation, as well as of the on-going costs of utilising these facilities. If producers continue to provide products that include wood that is prohibitively difficult to separate then the burden of cost and management of the waste will fall on the eventual holder of the waste. It believes the current treatment and processing infrastructure could not cope with a complete ban on landfilling of wood waste.

One LA body was of the opinion that clear guidance and grading is needed in order to separate the wood waste fractions effectively. The LA body believes that in the municipal sector separation of wood waste from the residual waste stream is already commonplace encouraged by fiscal and legislative drivers.

Waste management companies (1 response)

The respondent cited the key issues as being around practicality, cost effectiveness and the availability of suitable end markets for the different material being separated.

Construction and demolition (2 responses)

The respondents outlined organisations key issues will be space, cost of labour, and expertise of wood types (quality and treatments, disposal route and the practicality of separating composite materials).

Energy companies (1 response)

The respondent was of the opinion that timing is one key issue simply because the nature of wood waste will change as more MDF and particleboard/lower C grade material enters the waste stream. This material cannot be recycled in such volumes and will need to be used for energy generation if it is to be diverted from landfill. Secondly, they believe regulation of storage limits is another key issue because proposals are currently being considered regarding wood waste disposal fines and storage limits, these regulations should not contradict the restriction policy.

Forestry industry (1 response)

The forestry industry representative believes that labour intensity and cost are the key issues. Wood must be separated at source to ensure the quality of the recycle.

Environmental interest group (1 response)

The respondent believes that the key issues are: instituting source separation; the potential for additional levels of reclamation for reuse (e.g. for building); the reuse / recovery requirements (e.g. size) for individual customers, particularly those requiring clean wood (Grade A); and the judgement of personnel involved in separation.

Question 21: How practical would it be to apply a restriction to mixed loads?

Who responded?

17 responses. 3 wood trade associations, 1 other trade association, 5 local LA bodies, 2 waste management companies, 2 construction and demolition, 1 forestry industry, 1 energy company, 1 “others” and 1 environmental interest group.

How they responded**Wood trade associations (3 responses)**

One WTA was of the opinion that a restriction would encourage segregation at source but this is already practiced where it is easy. It would probably have the effect of increasing pressure on less acceptable disposal routes.

One WTA was of the view that it would be easy provided there is a market. As the majority of loads are mixed, if there were any processing problems downstream then material would back up and there would be a delay before material could be redirected to export.

One WTA concluded that it is practical where recovery routes/facilities are in place and that the existence of local schemes makes it easier.

Other trade association (1 response)

The respondent is of the opinion that it won't be difficult to apply a restriction to mixed loads but it may prove difficult to regulate and enforce.

LA bodies (5 responses)

One LA body stated that it would be very hard to apply a restriction to mixed loads because of the difficulty of making accurate visual checks. However a wider ban on biodegradable waste would be more practical to enforce and deliver.

One LA body is of the view that there is not sufficient infrastructure in place for a complete ban without incurring an unreasonable level of cost. A complete ban would require a network of processing facilities available nationally to sort the waste. They question whether complete separation will ever be achievable as a restriction might only be practically applied to mixed loads where alternative treatment is available.

One LA body was of the opinion that if a restriction was to be implemented a sensible de minimis for waste wood in residual waste should be set.

One LA body concluded that any unjustified restriction on the use of mixed waste wood loads would likely force it (for economic reasons) to landfill, thus defeating the objective.

One LA body believes that a restriction to mixed loads will be an issue primarily for landfill operators, with implications for producers of the waste in terms of the need to separate or divert more mixed load materials from landfill. Thus a restriction can only be practically applied to mixed loads where alternative treatment is available.

Waste management companies (2 responses)

One WM company concluded that it would not be practical to apply such a restriction. They cited that some sites which generate wood waste may be too small to have separate containers for the different grades of wood which is the case for a lot of HWRCs. The other referred to their answer to question 17.

Forestry industry (1 response)

The forestry industry representative is of the opinion that restriction on mixed loads might be feasible if separation is applied at source. A potential for exceptions in some particularly difficult streams should also be explored.

Energy companies (1 response)

One energy company states that a ban would produce more low grade material, the mixed load would still have treated wood extracted from it, but when used for generation would not have to be categorised/processed further.

Others (1 response)

One organisation in this category is of the view that mixed loads will always be defined to the lowest common denominator and would therefore most likely end up currently in landfill and or incineration.

Question 22: Are there any sectors where sorting wood waste would be particularly difficult and why?

Who responded?

11 responses. 3 wood trade associations, 5 LA bodies, 1 energy company, 1 forestry industry and 1 environmental interest group.

How they responded

Wood trade associations (3 responses)

One WTA is of the opinion that demolition and civic amenity waste streams cannot be sorted visually. Instead a de minimis approach to contaminants should be used for mixed waste.

One WTA believes that upholstery is a particular challenge but feasible provided shredding has not taken place.

Another WTA states that limited space (e.g. on urban construction sites) can hinder segregation and sorting capacity. The WTA also believes that the demolition sector will uncover wood containing a wide range of treatments, many of uncertain origin, and which may no longer be sold on the market. In addition, wood will have to be separated from other building materials, and some may be combined with other materials as part of a product. It states that the packaging sector may use visually undetectable organic treatments to prevent mould/stain on wood and packaging material.

LA bodies (5 responses)

All 5 LA bodies are of the view that municipal waste is likely to prove particularly challenging due to its diverse nature and the fact it's often mixed with other materials (furniture). One LA body had conducted trials which showed that separating high grade wood from other wood and mixed waste is a challenge as they are frequently contaminated by a variety of other materials, such as nails and paint – it was costly for the HWRC to manage the quality of the wood waste and so the trial stopped.

One LA body believes that the relatively small quantities of wood waste produced by households and some businesses are impractical to separately collect, and even where recycling services are provided these may be poorly used due to time/space constraints of businesses. For this reasons, mixed residual waste pre-treatment options are the most practical and deliverable solutions.

One LA body pointed out that providing a comprehensive sorting process for municipal wood waste would be constrained by available site space and financial and operational limitations.

Energy companies (1 response)

The respondent is of the view that source segregation is the most effective method but may not be possible at some HWRC's or other businesses due to lack of space.

Forestry industry (1 response)

The representative felt there could be some difficulties in sorting municipal and demolition waste. For municipal waste they believe there is little awareness of wood types and treatment methods among general population, therefore staff at CA sites would need to sort the wood. For demolition waste they are of the opinion that some wood is combined with other materials e.g. windows (glass), or has been treated with hazardous chemicals that cannot be detected by visual inspection due to weathering of wood.

Environmental interest groups (1 response)

The respondent is of the opinion the demolition sector will face difficulty sorting waste wood between grades B, C and D. Identifying wood that should be assigned to grade D depends on identifying CCA etc treated wood, whilst sorting between grades B and C must presumably at present depend largely on individual judgement.

Question 23: Please provide any additional evidence on the nature of wood waste disposal by small businesses.

Who responded?

9 responses. 5 wood trade associations, 2 LA bodies, 1 waste management company and 1 environmental interest group.

How they responded

Wood trade associations (4 responses)

One WTA referenced their response to question 4.

One WTA is concerned that the requirement on small businesses to sort and dispose of wood does not become so burdensome that it disincentives the use of wood in future projects. Wood is an extremely environmentally sustainable construction material (as recognised by the Committee on Climate Change) and the environmental

benefits of this policy would be lost, if complex rules around wood waste disposal lead to wood being replaced by more energy intensive building materials.

One WTA runs a network of local wood recycling organisations that assist small companies dispose of low volumes of wood waste.

One WTA working with SMEs provided information outlining what happens to wood waste based on a 2009 questionnaire of its members.

Off cuts:

- 28% Used by employees for fuel
- 16% Sold as fuel
- 22% Burnt to provide heat for factory
- 8% Put in skip and sold as fuel
- 22% Other uses

Machine waste:

- 56% Used for animal bedding
- 12% Selling for pellet or briquette
- 6% Provide heat for factory
- 4% Used for particle board
- 23% Other uses

One WTA provided information from a variety of studies. Disposal routes identified included landfill; waste management companies; wood recyclers; animal bedding; particleboard manufacture; compost/mulch; on-site energy/power; and off-site energy/power. One of the studies⁴ provided figures on joinery yield of 50%, of which off-cuts are typically used for fuel (28% from company employees) and for machinery waste, 56% is used for animal bedding, with other routes including fuel and particleboard manufacture. Unidentified percentages for both off-cuts and machinery waste were identified as destined for landfill.

LA bodies (2 responded)

One LA body provided a link the following website: [London Energy Partnership](#)

One LA body is of the opinion that an improved collection and sorting infrastructure by way of expanded local authority 'trade waste' services for SMEs will be critical to diverting small amounts of wood waste from landfill.

⁴ Fletcher (2010) Joinery Resource Efficiency Action Plan

Waste management companies (1 response)

The respondent offers waste transfer facilities for small businesses. Small builders and house clearance companies can drop off wood waste and furniture in a contained area. Grounds maintenance and tree surgeons can drop wood waste off in a different area for composting. This is unlikely to happen if waste was collected in a skip or bins where it would be contaminated before collection.

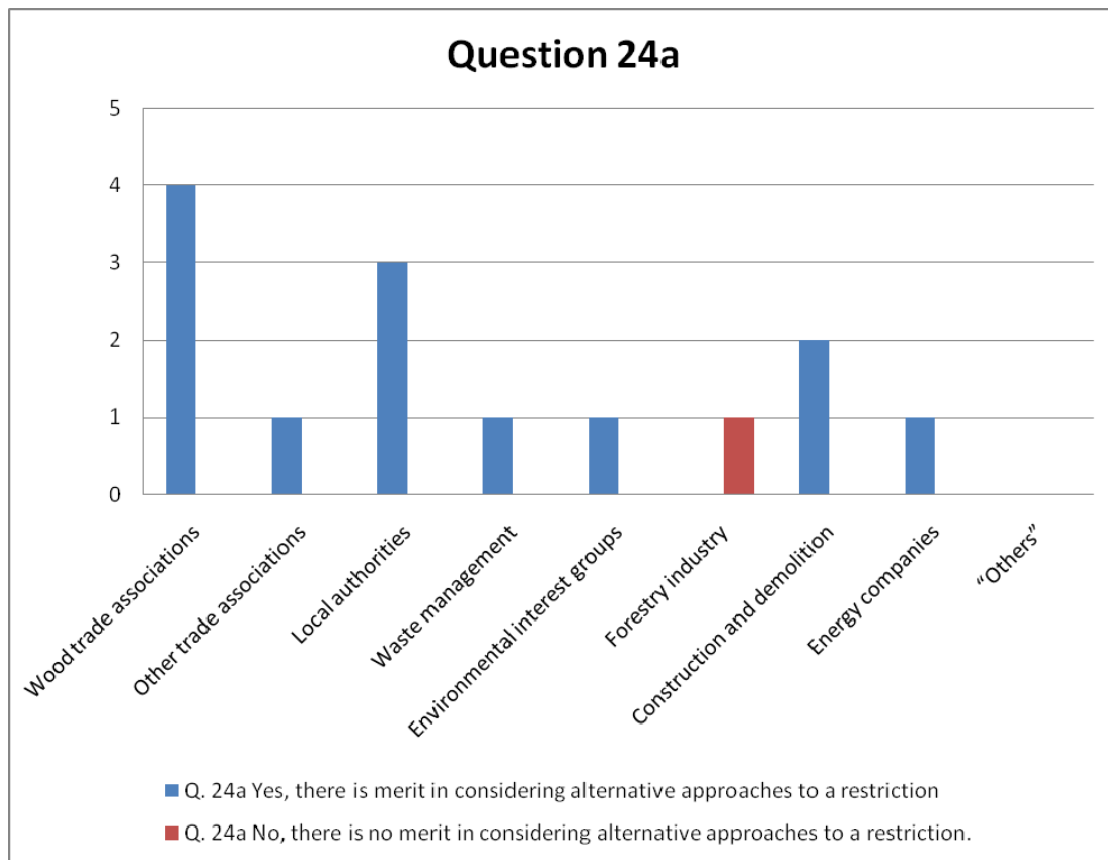
Environmental interest groups (1 response)

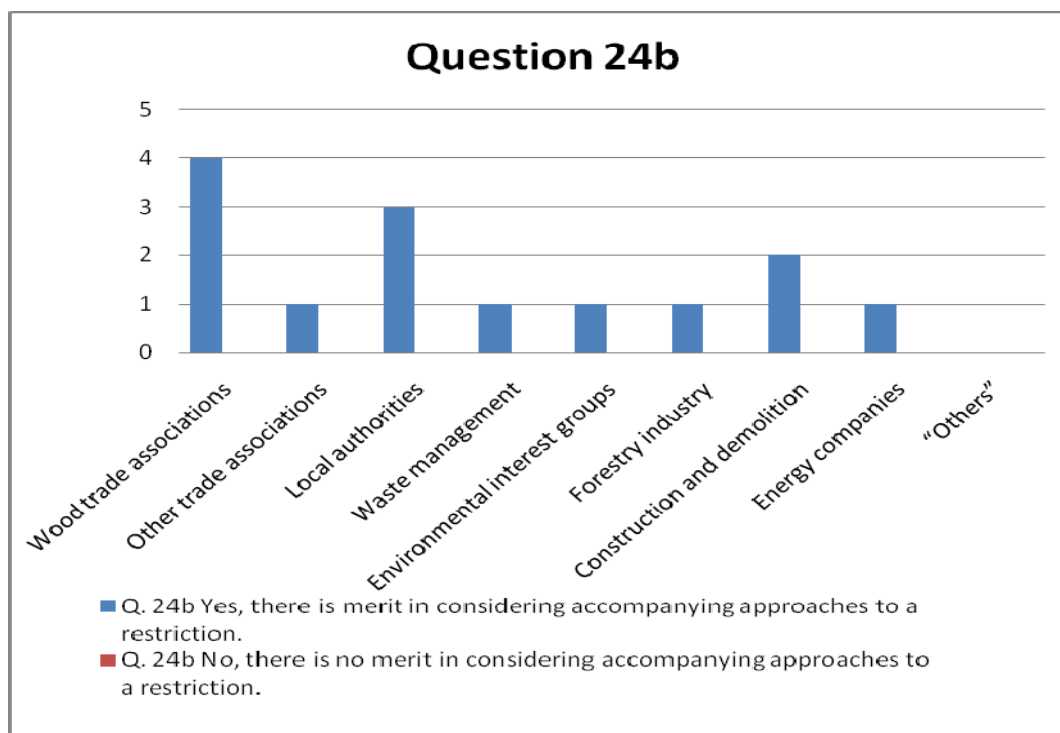
The respondent cited the British Woodworking Federation's September 2010 '[Joinery, a Resource Efficient Action Plan](#)' which provides figures on joinery yield of 50%, of which off-cuts are typically used for fuel (28% from company employees) and for machinery waste, 56% is used for animal bedding, with other routes including fuel and particleboard manufacture. Unidentified percentages for both off-cuts and machinery waste were identified as destined for landfill.

Question 24: Is there merit in considering a) alternative approaches to a restriction? Y/N b) accompanying approaches?**Who responded?**

19 responses. 4 wood trade associations, 1 other trade association, 4 LA bodies, 2 waste management companies, 2 construction companies, 1 energy company, 1 forestry industry, 2 "others" and 2 environmental interest groups.

How they responded





Wood and other trade associations (5 responses)

All five Wood and Other trade associations agree Government should look at alternative and accompanying options.

LA bodies (4 responses)

All four LA bodies agree Government should look at alternative and accompanying options.

One LA body also stated that diversion of waste wood from landfill is already encouraged by the biodegradable municipal waste targets under the Landfill Directive and by the ongoing increase in landfill tax contributing to the ongoing decline of wood waste to landfill. They are also of the opinion that the administrative burden of additional restrictions and costs may not be sufficient environmental value for money relative to other environmental actions that Government could legislate for at this time.

Waste management companies (2 responses)

Both respondents agree. One company believes the alternative approach is to allow current drivers and incentives to fulfil their function and to review at an appropriate time post 2014. Any restriction should not be imposed until there is sufficient wood processing capacity in the UK – this will be dictated by both the number of facilities and their ability to handle a diverse wood waste feedstock.

Others (2 responses)

One organisation from this category is of the opinion that without additional capacity in the recovery sector, a restriction on landfill will merely drive increased illegal disposal, perhaps fly tipping. They provide the example of tyres and fridges when they were banned from landfill.

Another from this category suggested a carbon credit system.

Environmental interest group (2 responses)

One environmental interest group is in favour of a ban rather than a restriction with complementary accompanying approaches. It wants appropriate support and incentives aimed at optimising recovered value. It believes these measures should be phased with different sectors potentially allowed different timescales. Simply restricting waste wood to landfill would not be sufficient to ensure that waste wood is treated in line with the waste hierarchy, to best environmental benefit, or without efficiency being impeded by market failures. Improvements would be necessary for collection and sorting infrastructure. It believes that collection authorities should provide recycling services to small businesses'. Additionally, the Government should be working towards reducing contaminants on wood products, although this is not a short-term solution.

Another was of the opinion that whilst it is worth considering alternative approaches, a landfill restriction is likely to be superior to a voluntary agreement because it offers certainty of outcome and a level playing field for businesses. They believe that a focus on reducing contaminants for wood waste is likely to be a strong complementary policy for a landfill restriction, as this will remove a major barrier for wood reuse, potentially opening up opportunities to capture greater value. It provides an opportunity to highlight the importance of 'design for recovery' and encourage the phasing out of paints and other coatings that make recovery difficult. Similarly, increased collection may address potential barriers to support for landfill restrictions, and may reduce the cost of such restrictions. The response urges Defra to consider how diversion of low-grade wood waste into heat recovery might affect the economics of, and support for, a wood landfill restriction, especially if coordinated with the renewable heat incentive for CHP installations.

Question 25: What would be the benefit in these approaches?

Who responded?

18 responses. 5 wood trade associations, 1 other trade association, 5 LA bodies, 1 waste management company, 2 construction and demolition, 1 energy company, 1 forestry industry, 1 “others” and 1 environmental interest group.

How they responded

Wood trade associations (5 responses)

One WTA stated that improving the collection and sorting infrastructure is a good idea and that whilst individual company amounts of wood waste may be small they can be aggregated. It also believes that there would be benefits in reducing contaminants. However, they are of the opinion that many of the treatments are harmless, but the regulators are reluctant to accept this. In their experience voluntary schemes don't work.

Another WTA also mentioned improved collection and sorting infrastructure for a more coordinated approach. They believe that producer responsibility is worth exploring but only if the cost drives recovery for recycling.

Another WTA was in favour of producer responsibility which they believe will lead to less waste and continued re-use of packaging. They are of the opinion that improved collection, sorting and recycling facilities will aid the local economy in terms of employment and income from the sales of both recovered and waste wood as would improving facilities.

One WTA states that their membership are in general supportive of a restriction but that infrastructure for wood waste collection and disposal would need to be improved with assistance required from government in exploring routes to improve segregation at source and to encourage diversion to recycling ahead of energy.

Another WTA was of the opinion that the right technology and infrastructure for a network of small-scale WID compliant energy from waste plants would help to find an outlet for the low-grade wood waste for which no ready markets exist. They also mentioned hazardous wood waste which would have restricted disposal options.

Other trade associations (1 response)

The respondent states that regulation should be a last resort and may not be the most cost effective option. It believes that alternative / accompanying approaches may result in greater flexibility for joint working between industry, Government and other key stakeholders to help develop and implement innovative solutions for a lower overall cost within a reduced timeframe.

LA bodies (5 responses)

One LA body is of the opinion that a better approach would be to introduce a complete ban on biodegradable wastes, together with a requirement to separate paper, card, garden, food, textiles and wood wastes from mixed wastes. This would enable a risk based approach where waste could be monitored for biodegradability at landfill sites, and those exceeding biodegradable waste limits can be traced and proportionate sanctions taken. It states that the evidence from Europe is clear that a wider ban including biodegradable waste is required to deliver a Zero Waste Economy. However, the LA body is of the view that the relatively small volumes of wood waste landfilled suggests that a landfill ban on its own will be ineffective in driving changes. Government should instead consider increasing landfill tax beyond £80/tonne in the immediate future and announce a phased introduction of a complete ban on biodegradable wastes.

One LA body believes prevention of wood waste should be the first response followed by reuse because these measures limit the amount of waste to be managed and disposed of, whereas a restriction may not. It feels that a more holistic product based approach, where all elements of the supply and waste treatment chain take a share of the obligations, would be beneficial. For example:- A producer responsibility scheme (similar to WEEE) for furniture, should encourage better design both for reuse and recycling. Treatment facilities would then be more confident of the supply of suitable material. By targeting individual product types (e.g. furniture) it also ensures that there are no perverse incentives to changing from wood materials to other material types (e.g. plastics) to avoid responsibilities. This approach also supports the waste hierarchy.

One LA body is of the opinion that the government could provide support that would stimulate further market developments including simplifying the current planning regime and providing certainty on green subsidies available for facilities recovering energy from the treatment of wood waste. It considers these to be far more positive measures than simply implementing a restriction.

One LA body believes alternative approaches (such as producer responsibility and collection hubs) will engage with the greater community and would make alternatives to landfill a more viable option for organisations not currently well provided for – this would also reduce the temptation to find other means (fly tipping etc) of disposing of small scale wood waste.

One LA body states benefits as improved collection and sorting infrastructure and the support of LA trade waste services for SMEs. They believe much of the necessary infrastructure is already in place in the form of HWRCs and WTSs, with new facilities able to be configured to accommodate the services from the start.

Such local services can be convenient and cost effective. They are of the view that producer compliance which has proven to be effective with other waste streams could be successfully applied to wood waste. The benefit would be ensuring sufficient funding available to ensure necessary diversion from the outset.

Waste management companies (1 response)

The respondent believes that a restriction will not be enforceable or practical. They are of the opinion that evidence shows that wood waste to landfill is projected to reduce further, landfill tax being a major incentive. Government could do more to promote and support the increased reuse of wood and furniture. More can also be done to improve the collection infrastructure of council bulky waste collections and transfer facilities for small businesses, while packaging recovery targets for wooden packaging should be increased to reflect current levels of recycling. In the longer term restrictions should be implemented on the use of hazardous substances to treat wood or make MDF. The benefits will include increases in the amount of wood reused, potential revenue generation for charities and community groups and ease of use for businesses not currently recycling wood waste. Higher targets will increase PRN⁵ values, encouraging more collections of wood packaging, and a RoCs approach (as with WEEE) will make wood easier to reuse and recycle.

Construction and demolition (2 responses)

One C&D company believes all of the approaches listed will benefit the industries involved. Another is of the opinion that these approaches will limit cost to the industries involved.

Energy companies (1 response)

The respondent believes the UK needs to drastically reduce dependence on landfill to meet the challenge of declining landfill space and EU Landfill Directive Targets and that England lags behind its neighbours in dealing with the issue citing the Green Alliance report as evidence that landfill restrictions are successful. Alternative measures such as high landfill tax rates in conjunction with the ban are also effective. Healthy levels of demand and a strong, visible market for waste wood should minimise fly tipping and on site burning.

Forestry industry (1 response)

The forestry industry representative is of the opinion that these approaches would increase awareness of wood as a resource. Producer responsibility schemes accompanied with reverse logistics would be especially helpful for small businesses. Similar schemes could be considered for construction industry where wood suppliers are responsible for wood waste collection, large construction companies could

⁵ PRN=Packaging Waste Recovery Note

benefit although it would be more difficult to apply to small projects. Reducing contaminants on wood products could potentially allow greater recycling and re-use, along with minimised environmental pollution through service life e.g. chemical leaching into soil in outdoor applications.

Others (1 response)

The respondent is of the opinion that benefits will include increased recovery and improved environmental performance with reduced risk.

Environmental interest group (1 response)

The respondent is of the opinion that taking wood waste out of landfill should be seen as part of a wider evolution in biogenic waste disposal and resource management. They believe if a restriction were to be by way of taxation rather than prohibition, this could potentially be achieved by charging waste potentially containing wood at the 'higher rate', thus incentivising the segregation of such waste wood but allowing for circumstances where this is not possible.

Question 26: What are the barriers to these approaches?

Who responded?

18 responses. 4 wood trade associations, 1 other trade association, 5 LA bodies, 1 waste management company, 2 construction and demolition, 1 energy company, 1 forestry industry, 2 "others" and 1 environmental interest group.

How they responded

Wood trade associations (4 responses)

Two WTAs believe that clarification is required on the issue and definition of 'contaminants'. They state there are some treatments in wood panel production which are an essential part of the production process. They do not believe it is realistic to expect an industrial process such as wood panel production to be possible with no wood treatment at all. One believes that the producer responsibility packaging scheme is a good model but the value of PRNs is so low that it's stopped driving new material.

One WTA states that cost is a barrier. The producers do not want the cost of recovering their material but suffer the cost of empty return journeys by their vehicles. The suppliers do not want the cost of disposal whereas if they separate their waste streams it has proven to be a cost benefit. Local authorities do not want the cost of disposal, yet by outsourcing their waste management they do not appear to receive the benefits from the sale of their waste products. The cost of transport to

major recycling facilities could be alleviated by the creation of more local 'social enterprise' initiatives.

Another WTA was of the view that barriers include lack of funding and government support, government establishing an appropriate infrastructure network, planning resistance and investor uncertainty over long-term continuity of government policy.

Other trade associations (1 response)

The respondent is of the opinion that the principle barriers include co-ordination across a large and diverse range of industrial sectors which produce waste wood and have different interests in the management of waste materials.

LA bodies (5 responses)

One LA body is of the opinion that a restriction is a blunt instrument requiring sorting, collection and treatment infrastructure to be in place. It is difficult to accurately project waste arisings, and therefore to plan the corresponding capacity to prevent either over capacity or an oversupply of feedstock.

One LA body states that a key barrier will be encouraging manufacturers to develop products with reduced contaminants that are designed to allow for reuse as a primary focus, prior to them being recycled or treated. They suggest options to incentivise industry to make changes will have to be considered by the Government.

One LA body is of the opinion that planning could be a barrier citing current difficulties in achieving permission for waste treatment facilities due to the requirements of the Localism Act and National Planning Policy Framework. This has been recently highlighted by the permanent closure of the Sonae waste wood chip recycling facility which has been subjected to planning delays and local opposition. They noted green subsidies as another barrier. Although these subsidies (such as ROCs, RHI and FiTs) increase the financial viability of projects, there is a concern over the uncertainty of these subsidies post 2017 when the Electricity Market Reform (EMR) is due to be implemented.

One LA body believes producer responsibility would be time consuming to implement and enforce. Although collection hubs would work, these would have to represent the cheapest viable option for small scale wood producers. The LA body gave a local example of recycling centres providing a service to commercial organisations on a 'pay per throw' basis, which although cheaper than other legitimate disposal/treatment routes, are significantly underused.

One LA body was of the view that implementation would be complex due to the different grades of wood waste and incorporation of wood within products containing other materials, e.g. furniture.

Waste management companies (1 response)

The respondent did not feel there are any barriers to the approaches, particularly in promoting more reuse and recycling and encouraging councils and companies to work more closely with the community/charity sector. The main difficulty is turning the encouragement into practical action by the public, SME's and large businesses.

Construction and demolition (2 responses)

Both the C&D companies were of the opinion that the desired outcome will take some time. One was of the view that replacing current wood treatment with ones with a lower environmental impact may have an impact on the durability of timber structures. If the replacement treatments are less effective timber may have to be replaced more frequently, resulting in more wood waste.

Energy companies (1 response)

One energy company believes the budget limits for the ROCs is the main barrier to maintaining support levels. The costs of applying the restriction/any alternative measure are unclear. Costs will need to be weighed against the volume of wood that could be diverted from landfill and corresponding environmental benefits.

Forestry industry (1 response)

The forestry industry representative is of the opinion that improved collection and sorting infrastructure for small business may not lead to greater collection if there are alternative outlets, an increase in business costs or a need to need to purchase a vehicle to take wood waste to collection hubs. As they believe voluntary producer responsibility schemes are likely to be less effective, there should be an obligation to sort wood by grade and source. Lastly, they are of the opinion that reducing contaminants on wood products would require participation not only from wood product producers but also from chemical suppliers.

Others (2 responses)

One respondent is of the opinion that it could bring about inactivity (through resource limitations) in the wood recycling sector.

The other respondent believes that the big wood producers need to give their support as if wood in the retail sector is recycled to the detriment of large companies, the construction industry will suffer.

Environmental interest groups (1 response)

The respondent is of the opinion that change in existing practices is required.

Question 27: Are there any other approaches we should consider?

Who responded?

15 responses. 3 wood trade associations, 5 LA bodies, 1 waste management company, 1 construction and demolition, 1 energy company, 1 forestry industry, 2 “others” and 1 environmental interest group.

How they responded

Wood trade associations (3 responses)

One WTA believes that while measures to increase re-use and improve collection infrastructure are positive and should be developed, they do not provide an adequate replacement for a restriction on sending wood to landfill.

One WTA felt that research work on segregation of re-usable wood from high volume waste transfer stations was needed, believing that with a bit of innovation in processing machinery at least 20% of all wood waste could be reused.

Another WTA thought there may be scope to capture high grade wood not collected by the wood recycling sector (because it's produced in low volumes) by encouraging matching of deliveries to businesses, with collection services to back-haul the wood waste to central consolidation points. There may also be scope to consolidate wood waste from small timber businesses whose wood waste production is too low for skip collection. This would require a sufficient concentration of participating businesses within a restricted area to allow the establishment of a viable collection network. They also thought that as many wood treatments are becoming more difficult to detect, there may be a case for introducing regulation to ensure that future treatments can be made more readily identifiable, so that end of life options can be more readily determined.

LA bodies (5 responses)

One LA body would like more support for the reuse sector. They provide examples from a WRAP report on wood reuse in Wales which could be promoted. They believe in Government intervention to encourage manufacturers to develop wooden products that take recycling into account as part of their design. This would reduce the amount of composite wood products that become waste as a result of being difficult to process.

One LA body believes there should be a continued increase in landfill tax beyond 2014/15. Another would like to see incentives to separately collect wood waste at the kerbside.

Another LA body agrees that the landfill tax is successful in encouraging increased reuse and recycling for a large number of materials. They agree that alternative approaches that encourage diversion of waste from landfill further up the hierarchy should be considered.

One LA body agreed with others that the continuation of the landfill tax will be successful in encouraging reuse and recycling. It agrees that the alternative approaches suggested should be prioritised however, at HWRC where space is an issue such approaches must allow for co-collection of clean and dirty wood. The LA body also states that increased support and promotion of reuse facilities will have impacts beyond the wood sector and should be an important part of all waste initiatives. They believe SMEs would benefit from effort to make it easier for them to recycle, but this should not just be restricted to wood. Paid access to HWRCs or 'collection clusters' which are able to accept a wide range of materials for recycling would be beneficial and increase recycling and recovery rates. This would complement any producer responsibility schemes and, depending on the location of the collection clusters, may also allow for establishment of return logistics. It believes reducing the contaminants in wood to aid recycling is a long term solution and this should be explored.

One LA body suggested the enhanced design of furniture and other bulky multi-material products to enable easier separation of constituent materials to enable a reduction of wood waste in mixed loads and contaminants on wood products. It sees this as a long-term aspiration that would need buy-in (and possible incentives) in the manufacturing sector. There should be continued support for generating treatment capacity for mixed wastes, whether or not they contain a fraction of wood waste.

Waste management companies (1 response)

The respondent thinks that promoting reuse should be considered giving the example of charities it works with who sell a range of second hand furniture and other wood products. Their HWRCs sell on furniture in good condition to the public.

Forestry industry (1 response)

The forestry industry representative gave the idea of introducing extended producer responsibility whereby producers of wood products would have a responsibility for the entire life-cycle of the product especially for the take-back, recycling and final disposal. This idea could be extended to wood product importers/distributors (first placement on to the UK market) as around 60% of wood products are imported.

Producers could support the development of necessary infrastructure for wood waste collection and sorting by grade and source.

Others (2 responses)

One respondent believes in the improved flexibility in the legal response to pragmatic wood recovery and that the Environment Agency position can be overly conservative and restrictive.

One respondent is of the opinion that companies in the UK who sell low quality furniture which are then discarded should be taxed reflecting their true environmental costs leading to people valuing products more highly and being more likely to look after them and repair them if they become broken. This approach treats the cause rather than the symptoms.

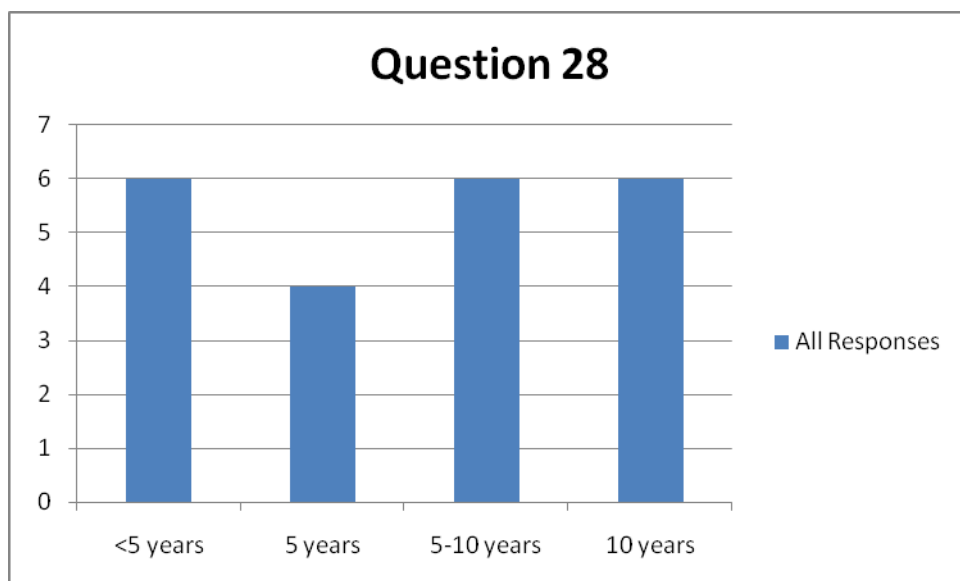
Environmental interest group (1 response)

The respondent does not want alternatives considered for wood waste. It feels that the supporting evidence is not strong enough to ban arboricultural and green garden waste. It also wants to see the introduction of an incineration tax.

Question 28: What should be the lead in time for any restriction on wood waste to allow time for the necessary infrastructure to develop? < 5 yrs, 5 yrs, 10 yrs, > 10 yrs

Who responded?

23 responses. 5 wood trade associations, 2 other trade associations, 5 LA bodies, 3 waste management companies, 2 construction and demolition, 1 energy company, 1 forestry industry, 1 “others”, 2 environmental interest groups and 1 professional body.



How they responded

Wood trade associations (5 responses)

Two WTA believe less than 5 years is a sufficient lead in time. Whilst another concludes that less than six months should be sufficient lead-in time for necessary infrastructures to develop. One other WTA stated more than 5 years and one stated 10 years.

Other trade associations (3 responses)

One other trade association stated less than 5 years whilst two other trade associations thought that 10 years is sufficient lead-in time.

LA bodies (5 responses)

One LA body is of the opinion that less than 5 years is sufficient. Two LA bodies suggested 5 years, whilst two other LA bodies thought 10 years lead-in time is sufficient.

Waste management companies (3 responses)

All the WM respondents stated 5-10 years.

Energy companies (1 response)

The respondent stated less than 5 years.

Forestry industry (1 response)

The forestry industry representative thought 5 years lead-in time.

Others (1 response)

The respondent stated 5 years.

Environmental interest group (2 responses)

One respondent suggested 5-7 years the other 5-10 years.

Professional bodies (1 response)

The respondent suggested 5 years.

Question 29: What infrastructure is necessary?

Who responded?

19 responses. 5 wood trade associations, 1 other trade associations, 6 local authority bodies, 1 waste management company, 2 construction and demolition, 1 energy company, 1 forestry industry, 1 “others” and 1 environmental interest group.

How they responded

Wood trade associations (5 responses)

All five WTA are of the opinion Energy from Waste (EfW) infrastructure is necessary, with two specifically mentioning WID compliant EFW.

One WTA also mentions the need for market information to filter through to SMEs and infrastructure to identify treatments and another mentions space on waste transfer stations. Collection is also mentioned by more than one respondent.

Other trade associations (1 response)

The respondent mentions infrastructure to help sort/segregate waste wood and additional WID compliant combustion facilities with energy recovery are likely to be required.

LA bodies (6 responses)

Three LA bodies mention EFW infrastructure, with one specifically stating WID compliant. One alludes to EFW infrastructure in referring to biomass markets and flags up the need for capacity across the UK to reduce haulage costs and reliance on export.

One LA body states re-use infrastructure is necessary whilst two refer to recycling facilities. Collection and sorting were mentioned by three LA bodies.

One LA body believes that treatment capacity for mixed wastes, whether they contain wood fractions or not, is vital.

Waste management companies (1 response)

The respondent is of the view that infrastructure for the treatment of low wood grades (C and D) and WID compliant biomass incinerators which can take mixed waste are necessary.

Construction and demolition (2 responses)

Both C&D companies believe that MRFs (with a capability to separate high and low value wood waste), space and WID compliant incineration plants would be required.

Energy companies (1 response)

The respondent is of the opinion that a restriction may lead to a need for additional storage of processed and unprocessed wood so it is important legislation in this area is not too restrictive.

Forestry industry (1 response)

The forestry industry representative believes there is need for energy-from-waste facilities.

Others (1 response)

The respondent is of the opinion that an improved legal framework that supports varied recovery activity would assist in widening the end use for any material.

Environmental interests group (1 response)

The respondent mentions space.

Question 30: What would be the practical difficulties and issues in implementing a restriction on wood waste? Please outline

Who responded?

21 responses. 5 wood trade associations, 1 other trade associations, 5 local authorities, 3 waste management companies, 2 construction and demolition, 1 energy company, 1 forestry industry, 1 “others”, 1 environmental interest group and 1 professional body.

How they responded

Wood trade associations (5 responses)

One WTA believes a restriction would require effective policing at landfill sites, and sufficient aggregation and storage capacity. In addition the seasonality of wood waste should be considered including the impact of this on regulatory requirements.

One WTA believes it would be more difficult to implement for domestic users than businesses, and there will be a cost impact.

One WTA is of the opinion that the infrastructure needs to be ready first.

Another WTA highlights barriers identified in a report⁶ which include: little integration along the supply chain, lack of data on quantities of wood waste and its disposal, inefficient procurement practices, scant knowledge of markets for wood waste, lack of business models for wood waste collection schemes and, confusion over the legislative and regulatory framework surrounding the disposal, transport and use of wood waste

One respondent states monitoring and verification issues especially where there is a culture of informal disposal.

Other trade associations (1 response)

The respondent identifies practical difficulties in implementing robust, cost effective waste acceptance procedures and believes that irrespective of the segregation process adopted it is likely that some fraction of waste wood may be present in mixed wastes which would neither be practical or cost effective to remove. The respondent also notes that sufficient infrastructure will need to be available.

LA bodies (5 responses)

One LA body flagged up local supply and seasonal issues as the current spread of wood sorting and treatment facilities does not reflect the geographical population.

One LA body is of the opinion that a complete landfill ban will in effect require pre-treatment of all the residual waste arising even though this waste is comprised of only limited amounts of wood waste. There are also concerns around market preparedness and stability. Also, restriction of a material (rather than a ban of certain items i.e. WEEE) will be much more challenging to implement, and could lead to significant levels of bureaucracy and red tape.

⁶ The Joinery Resource Efficiency Action Plan

One LA body is concerned with monitoring and enforcement flagging the need to reduce costs and that it may be unhelpful to introduce the requirement for additional reporting

One LA body is of the opinion that a restriction would place a significant burden on the landfill operator and that sharing the responsibility through the duty of care process would help. Inspections at landfill would provide only a snapshot view and be unlikely to uncover misuse. There would need to be some form of 'acceptable' level of wood waste landfilled.

One LA body is of the view that segregation of wood waste presented as a fraction in mixed loads is likely to be the primary barrier. Other barriers may be; different applications in terms of separation categories; limited space available for additional separation; cost of additional containerisation; and current treatment capacity available - both for mixed wastes and source separated low grade wood.

Waste management companies (3 responses)

One WM company is of the opinion that the requirement will need to be enforced at the producer end. Once mixed into the residual waste stream it is very difficult and costly to extract.

One WM company is of the view that any difficulties would depend on de minimis levels set. With risk-based regulation of landfills, there is little on-site inspection. It is likely that responsible operators would assist, but ultimate enforcement should be directed at producers unregulated practice may be encouraged.

One WM company believes that a major difficulty will be enforcement and whose responsibility it will be to separate wood from other waste destined for landfill. It also flags up the potential for 'hiding' wood waste in mixed waste and fly-tipping. There will also be problems if wood processors refuse to take certain grades of wood if markets are flooded, as has happened recently. Waste management companies cannot afford to stock pile wood if other outlets are not available.

Construction and demolition (2 responses)

One C&D company mentions onsite space for segregation, disposal of contaminated and painted timber if suitable local incineration plants not available, and increase disposal costs.

One C&D company believes that there will always be a need for mixed waste disposal from construction sites therefore the onus needs to be on segregating the wood from these mixed waste skips at MRFs.

Energy companies (1 response)

The respondent is of the opinion that an oversupply of low grade material may be an issue, however the demand from biomass plants is likely to minimise this issue. It also flags overly burdensome storage restrictions.

Forestry industry (1 response)

The forestry industry representative is of the opinion that enforcement and monitoring are likely to be issues.

Others (1 response)

The respondent believes increased fly tipping will occur if there is no legal route for disposal. A better understanding of limiting factors on use in individual recovery operations – the regulators need to work with end producers as well as wood recyclers.

Environmental interest group (1 response)

The respondent believes that the responsibility should be shouldered upstream. Ensuring compliance is bound to be the greatest practical difficulty. The establishment of the grading process will require training. They are concerned about issues surrounding arboriculture and green garden wastes and are of the opinion that any restriction be undertaken as a separate initiative. There will be segregation issues at household level that will require resolution.

Professional bodies (1 response)

The respondent mentions enforcement and that the experience gained from the enforcement of existing bans on liquids, tyres etc will provide valuable guidance in considering the enforcement of any wood waste restriction. The suggested mixture of measures may well be sufficient to provide the necessary enforcement.

Question 31: Where should burden of proof/ responsibility lie (producer, waste management company)?

Who responded?

18 responses. 4 wood trade associations, 2 other trade associations, 4 local authority bodies, 1 waste management company, 2 construction and demolition, 1 energy company, 1 forestry industry, 2 “others” and 1 environmental interest group.

How they responded

Wood trade associations (4 responses)

Two WTAs stated with the producer and two stated with the waste management company.

One WTA mentioned partnership working between industry, regulators and government is a preferred approach but the waste collector responsibility appears most sensible. They feel the greatest challenge will be to avoid fly tipping where a significant increase in cost to disposers leads to a rapid growth in illegal disposal rather than a shift to legitimate landfill diversion.

Other trade associations (2 responses)

Both stated the producer.

LA bodies (4 responses)

Two LA bodies are of the opinion that the burden of proof should lie with the producers of waste and two believe it should lie with both the producers of waste and the waste management companies.

Waste management companies (1 response)

The respondent is of the opinion that the burden of proof should lie with the producers of the waste.

Construction and demolition (2 responses)

Both are of the opinion that the burden of proof should lie with waste management companies.

Energy companies and forestry industry (2 responses)

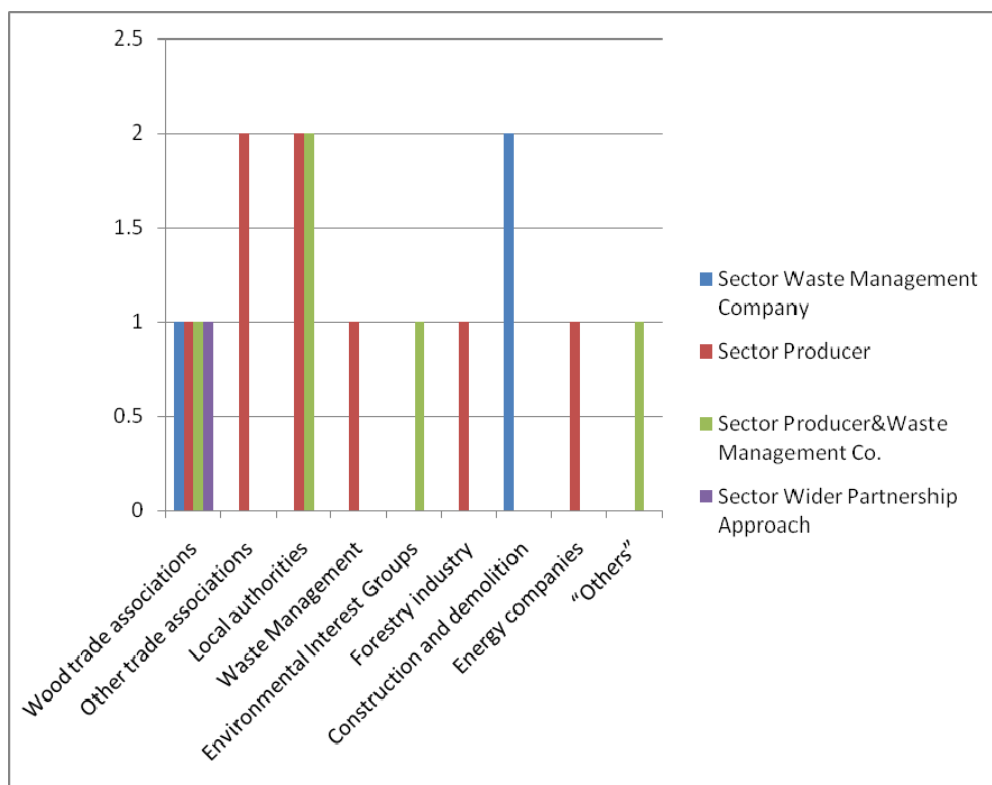
The respondents states it should lie with the producers of the waste.

Others (2 responses)

Both respondents conclude that responsibility should lie with the producers of the waste and the waste management companies.

Environmental interest group (1 response)

The respondent believes the burden of proof should lie with both the producers and waste management companies. The producer (business or domestic) should be responsible for segregation and the waste management company for ensuring that non-segregated waste, including wood, is not accepted.



Question 32: How much would the additional administration activity associated with compliance of a restriction cost you?

Who responded?

11 responses. 3 wood trade association, 3 LA bodies, 1 waste management company, 2 construction and demolition, 1 "others" and 1 environmental interest group.

How they responded

Wood trade associations (3 responses)

One WTA is of the opinion that quantities of materials landfilled by wood recyclers are extremely small therefore the cost impact on wood recyclers would be minimal. For general waste operators the challenges could be more serious. Load inspections to identify wood in mixed loads would be considerable in terms of cost. Depending on the penalties for process failure the additional costs could be sufficient to make certain sectors and waste streams non-viable.

One WTA is of the view that everybody should have responsibility and that waste management companies already have procedures in place for separation of other materials so it should not be a burden.

One WTA wood trade association believes it is difficult to state a general administrative burden across the wood processing sectors as there are a variety of business models. This will vary from business to business

LA bodies (3 responses)

One LA body believes the additional cost will depend on the nature of the restriction and is therefore not possible to quantify although significant cost could be accrued.

One LA body is of the opinion that cost will depend on the degree of separation required for household waste wood – if marginal separation is required then the additional admin cost would be nominal.

One LA body is of the view that actual cost is difficult to quantify although the potential for some costs to be transferred to other waste streams rather than wholesale increases, and the potential for savings, should be considered. It believes that costs are likely to be more excessive, for any sector, where wood waste separation infrastructure is not already in place.

Waste management companies (1 response)

The WM company believes that without a defined minimum level, the cost of sorting mixed waste to remove all wood would be prohibitive.

Construction and demolition (2 responses)

One C&D company states there will be an increase in costs for mixed waste skip and disposal costs for timber treated or coated with hazardous substances.

One C&D company is of the opinion that if the segregation was carried out at a MRF there would likely be an increase in gate fees to these facilities for mixed loads.

Others (1 response)

The respondent is of the view that there will be a significant cost (practically and administratively) in dealing with the increased fly tipping.

Environmental interest group (1 response)

The respondent notes that the diversion of wood waste from landfill will bring new business opportunities, particularly if the diverted wood is used to best advantage.

Question 33: Are there any possible unintended consequences of a restriction on wood waste?

Who responded?

20 responses. 5 wood trade associations, 1 other trade associations, 5 LA bodies, 1 waste management company, 1 construction and demolition, 1 energy company, 1 forestry industry, 2 “others”, 2 environmental interest group and 1 professional body.

How they responded

Wood trade association (5 responses)

One WTA believes that wood will end up being disposed of illegally, through burning, fly-tipping etc. All stakeholders must bear in mind that a convenient option will now have been removed. There is no point in restricting landfilling of wood unless something can be done about “difficult” wood like upholstery furniture.

Two WTAs was of the view that current energy policies (namely the Renewables Obligation) undermine the waste hierarchy by subsidising energy generators to outbid wood recyclers in purchasing waste wood which could be recycled. Increased fly tipping and the use of informal markets for the disposal of wood waste is likely to lead to inaccurate data on the quantity of wood waste arising and the disposal route.

One WTA believes a possible unintended consequence is unlicensed disposal routes for contaminated/treated timber.

One WTA believes that unintended consequences may include; fly tipping, disguising low grade waste by mixing with higher grade material, stockpiling of wood waste which may include hazardous material and stockpiling of wood which may cause a fire risk.

Other trade associations (1 response)

One other trade associations is of the view that there won't be sufficient capacity to manage lower grade waste woods which is likely to result in increased costs for managing this material.

LA bodies (5 responses)

One LA body is of the opinion that an unintended consequence is likely to be the oversupply of wood waste in some areas which will lead to the displacement of other wastes (that can be landfilled) from treatment facilities.

One LA body is of the view that there is to be a diversion of extra waste (including municipal waste) to incineration. This will potentially be very expensive could lead to

a huge amount of waste with no available end destination. A potential side-effect could also be that more wood waste is either imported or exported. This will impact upon wood waste projections and will influence treatment and disposal costs. They also believe that this could lead to increased levels of fly tipping.

One LA body is of the opinion that this will discourage the development of facilities within England, but that the export of such material may increase to meet the restrictions as the cheapest outlet will be sought and there is the risk that the market may not be able to respond appropriately (due to planning restrictions, inability to secure long-term contracts and uncertainty of green subsidies). Local authorities are more likely to benefit from maintaining flexibility.

One LA body believes that a restriction may encourage small traders to find alternative outlets for their waste such as fly tipping, which is likely to have an impact on local authorities in dealing with such waste.

Waste management companies (1 response)

One WM company believe a restriction of wood waste to landfill could deprive some landfill operators of a ready supply of day cover.

Construction and demolition (1 response)

One C&D company is of the view that a restriction could bring about unintended consequences such as illegal disposal (fly tipping) and increased wood fires.

Energy companies (1 response)

One energy company believes that if the cap policy and the capacity ceiling on dedicated biomass in the UK which manages the risk of too many waste wood power generation plants being built are implemented poorly and deters all new plants this could lead to a shortfall in demand.

Forestry industry (1 response)

The forestry industry believes increased burning and fly-tipping will potentially be some of the unintended consequences in the event of a restriction.

Others (2 responses)

One organisation from this category is of the view that fly tipping will increase as a result of a restriction.

One buyer in this in category is of the opinion that a restriction could result in recyclers blending unwanted wood materials into the product used by board manufacturers, causing severe problems and costing millions.

Environmental interest groups (2 responses)

One environmental interest group believes that an unintended consequence of a restriction could be the long-term 'lock-in' into incineration, which is contrary to the ideal which is reduction, re-use and recycling of waste where possible. They raised concerns regarding the toxicity of emissions from the incineration of treated waste wood.

One environmental interest group believes there might be health risks associated with storing and burning waste wood as biomass.

Question 34: Given the evidence available do you think there is a case for a further government action on wood waste? If yes, should this be a) a restriction b) other measures c) combination of a restriction and other measures.

Who responded?

20 responses. 5 wood trade associations, 1 other trade associations, 5 LA body, 1 waste management company, 2 construction and demolition, 1 energy company, 1 forestry industry, 2 "others", 1 environmental interest group and 1 professional body.

How they responded

Wood trade association (5 responses)

One WTA association mentions the current market situation created by the coincidence of a number of events; the recession, mild winter in Europe, and the closure of the Sonae panelboard mill. They believe much depends on the emerging biomass market. They also believe that the landfill tax has helped to reduce the amount of wood going to landfill and strongly support the continuation of the landfill tax beyond 2014. They state that now is not the time for restricting wood waste, although that time may come again.

One WTA was of the opinion that a restriction should be placed on materials which can easily be identified and have markets. Routes to improve segregation at source and diversion to recycling ahead of energy should also be explored.

One WTA believes that alternative facilities for the re-use and recycling of waste timber can create employment and improve the local economy. UK could learn lessons from other European countries about keeping waste timber out of landfill.

Another states that the Government would need to be confident that action would not penalise manufacturers of timber products relative to providers of alternative and less sustainable or recyclable construction materials. They refer to the contribution such products can make to the UK in meeting targets for carbon reduction as well as the wider economic, aesthetic, biodiversity and community benefits of using wood, mentioning the growth and employment potential as the construction sector develops and potential for recycling and as a renewable.

One WTA stated a preference for a combination of a restriction and other measures but state that a viable market and infrastructure will be required before the wood waste can be diverted.

Other trade associations (1 response)

The respondent is, in principle, supportive of a reduction in waste wood being diverted to landfill. However, it is important this is a holistic, risk based approach requiring infrastructure and long lead in times. They state that additional legislation may not be the most cost effective option.

LA bodies (5 responses)

One LA body believes that a ban on wood waste alone is likely to be ineffective. There are low qualities of dispersed quantities wood which make it a difficult administration and enforcement task.

One LA body is of the opinion that other measures need to be considered as they see a landfill ban on wood waste as an 'end-of-pipe' solution which does not encourage resource efficiency higher up the chain. Given existing drivers such as landfill tax and the decline in wood waste to landfill restriction would be challenging and expensive to implement and may not be as environmentally beneficial as it would first appear, relative to other measures. They are particularly concerned about the processing capacity that would be needed nationally. They feel that the resources required could be better utilised elsewhere.

One LA body believes there will be a demand for waste wood for energy production but, given the reduction in ROC support from 2016, there may be a reduced number of biomass facilities being developed. Government needs to consider when a restriction may be implemented and needs to ensure that appropriate lead times are provided for the market to develop treatment options. They concluded that it would be difficult to meet a landfill restriction, until the new facilities are in place.

One LA body is of the opinion that a restriction should be implemented as part of a set of measures, including producer responsibility, financial incentives and encouragement and the provision of a viable network of alternative use such as WID

compliant Energy from Waste plants or stimulation of recycling and re-use markets (something akin to Recycling Credits).

Another LA body also believes that other measures need to be considered. Whilst a restriction has merits, implementation should be considered based on specific materials within the wood waste definition. Careful consideration may also need to be given to application on a sector specific basis, with the possibility of exemptions.

Waste management companies (1 response)

The respondent supports a combination of measures including supporting re-use of wood and furniture, improving the collection infrastructure of council bulky waste collections and transfer facilities for small businesses, Increasing packaging recovering targets for wooden packaging to reflect current levels of recycling and restrict the use of hazardous substances to treat wood. They want to see government support the development of more WID compliant biofuel incinerators.

Construction and demolition (2 responses)

Both companies were of the opinion that a combination of a restriction and other measures should be considered.

Energy companies (1 response)

The company supports diversion of wood waste from landfill either via restriction or an alternative regulatory tool. It cites evidence from the Green Alliance (2007) report.

Forestry industry (1 response)

The respondent believes there is a potential need to support development of energy from waste facilities,. In addition wood waste should be separated at source to ensure better quality recyclates and minimise the volume of mixed loads.

Others (2 responses)

One respondent believes that the appropriate support structure must be in place first or there will be environmental damage and economic costs.

The other believes that a restriction would be appropriate as it would provide legal certainty and drive innovation and investment in infrastructure. Although the available evidence may point to a gradual decline in the amount of wood waste sent to landfill in recent years, there is always the possibility that in the absence of a restriction, this trend might not continue.

Environmental interest group (1 response)

One environmental interest group believes a combination of a restriction and other economic measures should be considered.

Professional bodies (1 response)

The respondent questions whether it is really necessary to introduce landfill restrictions given the other drivers which are already in place and are effective. Analysis of the current and future state of the wood waste market, even without policy instruments, suggests that the business as usual approach is realistic as the market may already be moving towards the desired outcome without the need for additional policy interventions. The evidence in the document and from the wood processing industry is that the market is presently buoyant and the landfill restriction may not be necessary.

Question 35: Please outline further what government action you would like to see.

Who responded?

10 responses. 2 wood trade associations, 4 LA bodies, 1 energy company, 1 “others”, 1 environmental interest group and 1 professional body.

How they responded**Wood trade associations (2 responses)**

One WTA is opposed to take back schemes and believe they will only work if there are suitable recycling options available as they are costly and could put an intolerable burden on the product manufacturer. Voluntary take back schemes may have a place at a small scale local level.

One WTA is of the opinion that the role of Government is important and could be pivotal in creating greater awareness of wood waste markets, helping businesses to understand the opportunities that exist. Implementing a restriction before the industry is able to put a value on wood waste could be a burden for a number of SMEs. They also stressed the need for Government policy to be joined up.

LA bodies (4 responses)

One LA body is of the opinion that Government should introduce a complete ban on biodegradable waste, combined with a requirement to sort paper, card, garden, food, textiles, and wood. They would also like to see an increase in the of landfill tax beyond the current £80/tonne 2014/15. Together the two provide a medium and long term solution.

One LA body believes the reuse sector can play a crucial role in diverting wood waste from landfill (e.g. furniture), whilst simultaneously generating other social and economic benefits. They would like to see a greater emphasis on the reuse sector by

Government. They feel that further consideration should be given to producer responsibility as this would tackle waste generation holistically and align with the waste hierarchy. Finally, efforts to reduce contamination of wood would allow a greater proportion of wood to be reused or recycled at a higher grade.

One LA body is of the opinion that additional support required from Government includes achieving planning permission so that additional waste treatment capacity can be provided at the right time as well as reassurance that financial support for energy generation will be available post-2017 when the Electricity Market Reform is implemented.

Another LA body is of the view that improved collection and sorting infrastructure, enhanced design of furniture and other bulky multi-material products to enable easier separation of constituent materials, and continued or enhanced support for generating treatment capacity for mixed wastes, whether or not they contain a fraction of wood waste.

Energy companies (1 response)

The respondent believes that biomass demand alone will not be a strong enough driver to divert wood waste from landfill, reducing the ROC eligibility threshold would mean that lower grade wood could be more easily diverted. The company also mentions storage and the need for guidance. Either instead of or in conjunction with a restriction the landfill tax should continue to increase.

Environmental interest group (1 response)

The respondent believes that benefits from a restriction depend on the implementation, incentivising the Waste Hierarchy and use of supporting economic instruments such as taxation, including on incineration. They believe that Government should progress a ban on wood waste to landfill within a holistic strategy for moving biogenic waste as a whole up the hierarchy.

Professional body (1 response)

The respondent questions why Defra is looking at wood waste restrictions rather than food waste.

Others (1 response)

One respondent in this category is of the view that there must be a common unity of purpose promoted by the government which transcends internationally within global markets.

Question 36: We have set out areas where we are particularly keen to receive evidence. If there are other areas you believe we have missed, or do not highlight sufficiently, please draw them to our attention.

Who responded?

7 responses. 1 wood trade association, 2 LA bodies, 1 energy company, 2 environmental interests group and 1 professional body.

How they responded

Wood trade association (1 response)

One WTA thinks that more evidence might be needed from landfill operators.

LA bodies (2 responses)

One LA body believes that the landfill tax has proved to be effective. Further incremental rises beyond £80/tonne in 2014 would drive wood and other biodegradable wastes out of landfill, and enable industry time to adjust to the change and make the necessary preparation.

One LA body is of the opinion that definitive data would be of benefit, including on a sector specific basis. Any future policy intervention mechanisms will need to consider the conditions of what is an increasingly fragile market with regards to wood waste treatment.

Energy companies (1 response)

The respondent provided a paper on landfill tax.

Environmental interest group (2 responses)

One respondent is in favour of a ban on sending waste wood to landfill and sees a requirement for complementary, supportive, measures. They believe that the benefits, environmental and economic, achievable exceeds those tabled by AEA. They wish to see proactive Government support geared towards the achievement of these benefits, alongside levelling the playing field.

The other believes in a “joined-up” Government with consideration for health implications. They believe there might be economic advantages of burning wood to create energy, but ignoring the health impacts will be a huge detriment to the economy.

Professional body (1 response)

The respondent questioned whether extension of wood waste to post consumer furniture may involve double counting.

Miscellaneous responses

One environmental interest group believes there needs to be joined up thinking with considerations for health implications.

One respondent from the “others” category is of the opinion that the pallet market is very developed in the UK- secondhand pallets, pallet repairs, pallet pools – all encourage the re-use of wood pallets. The pallet acts as a safe trapping for CO₂ until it ultimately gets recycled. Wood pallets are used more than once and can be in circulation of up to 20 years. In future, as a large consumer of wood, the organisation would be grateful if they were consulted from the beginning on similar policy reviews affecting their industry.

Stakeholder workshops

Alongside the call for evidence, Defra also held three workshops with key stakeholder groups, the wood recycling industry, timber and wood working industries and the construction and demolition industry. The workshops were used to discuss some of the questions in the call for evidence and to explore some of the practical issues in more depth. Some of the key issues and the messages we took away from the workshops are listed below and we will consider the more detailed comments as we look at policy options going forward.

Key Issues:

- Seasonality of markets
- Treatments on wood
- Composite products
- Changing waste streams with lower grade materials being used in products
- Collection, sorting and storing wood waste (space and regulations)
- Incentives such as ROCs and risks of distorting markets
- Geographical differences in infrastructure and economics

Key Messages included:

- A need to firm up the figures on how much wood is going to landfill.
- A need to clearly define wood waste.
- WID compliant energy from waste infrastructure and financing for it is needed, including small scale biomass and infrastructure to deal with bulky furniture waste. Although one workshop made the point that it was important to

consider how to ensure all wood waste does not end going to energy from waste.

- High level strategic/joined up thinking and consistency across the board (EU, UK, Industry) is needed to create a level playing field.
- Long lead in times needed to allow infrastructure to be in place.
- Be careful of both impact on SMEs and any unintended consequences of policies.
- Effort should be put into designing out waste in the first place.

Annex A: Who is included in each sector category?

Wood trade associations (WTA) in this document refers to Wood Recycler's Association (WRA), the Wood Protection Association (WPA), the Wood Panel Industry Federation/Association (WPIF/A), Trada, British Woodworking Federation (BWF) and Timber Trade Federation (TTF) {submitted a joint response}, , United Kingdom Forest Products Association (UKFPA) and National Community of Wood Recycling Project (NCWRP).

Other Trade Association (OTA) refers to Environmental Services Association (ESA) and Energy UK.

Local Authority (LA) bodies in this document refers to various local authority bodies such as Greater Manchester Waste Disposal Authority (GMWDA), Merseyside Recycling Waste Authority (MRWA), National Association of Waste Disposal Officers (NAWDO), Somerset Waste Partnership (SWP), North London Waste Authority (NLWA), West London Waste Authority (WLWA), Oxfordshire County Council, Leicestershire Waste Partnership.

Waste Management (WM) companies in this document refers to Viridor, AmeyCespa and Biffa.

Construction and Demolition (C&D) in this document refers to Kier Construction Group and United Kingdom Construction Group (UKCG).

Energy Companies (EC) in this document refers to RWE Npower Renewables Ltd and Dalkia.

Forestry Industry (FI) in this document refers to Poyry.

Environmental Interest Groups (EG) here refers to United Kingdom Without Incineration (UKWIN), The Breathe Clean Air Group and Green Alliance.

Professional Body (PB) here refers to Chartered institute of Waste Management (CIWM).

“Others” (OT) in this document refers to UK Environmental Law Association (UKELA), Imerys Minerals Ltd, Essex Bioregional (Sustainability consultant), Green Engineers and the general public.

Annex B: Websites, reports and journals cited in the responses

Question 2

Wood trade associations

- Ximenes, F.A., Gardner W.D and Cowiem A.L., (2008) "The decomposition of wood products in landfills in Sydney, Australia". Cooperative Research Centre for Greenhouse Accounting, Australia. Waste Management, Volume 28, Issue 11, November 2008, Pages 2344-2354.
- Micales, J.A and Skog, K.E., (1996) "The Decomposition of Forest Products in Landfills", USDA Forest Service, Forest Products Laboratory, One Gifford Pinchot Drive, Madison, WI 53705, USA.
- Skog, K. (2008) Sequestration of carbon in harvested wood products for the United States. Forest Products Journal Volume 58. Number 6, Pages 57-72.

LA bodies

EPA study on wood products (page 10)

<http://epa.gov/climatechange/wycd/waste/downloads/wood-products-chapter10-28-10.pdf>

Exhibit 18: Landfilling Emission Factors for Wood Products (MTCO ₂ E/Short Ton) Material/ Product	Raw Material Acquisition and Manufacturing (Current Mix of Inputs)	Transportation to Landfill	Land fill CH ₄	Avoided CO ₂ Emissions from Energy Recovery	Landfill Carbon Sequestration	Net Emissions (Post-Consumer)
Dimensional Lumber	–	0.04	0.48	□0.04	□1.14	□0.66
MDF	–	0.04	0.48	□0.04	□1.14	□0.66

– = Zero emissions.

Negative values denote GHG emission reductions or carbon storage.

Note: The emission factors for landfill CH₄ presented in this table are based on national-average rates of landfill gas capture and energy recovery. Avoided CO₂ emissions from energy recovery are calculated based on the non-baseload GHG emissions intensity of U.S. electricity generation, since it is non-baseload power

plants that will adjust to changes in the supply of electricity from energy recovery at landfills.

A study on Protocol for the quantification of greenhouse gas emissions from waste management activities. L'enterprises pour l'environnement (2010): http://www.epe-asso.org/pdf_rapa/EpE_rapports_et_documents20.pdf

UNEP's Global Trends and Strategy Framework study in 2010 which reports - "A high proportion of wood waste, for example, may be considered as carbon stored in landfills while anaerobic conditions prevail. It must be emphasised that, purely from a climate change perspective, burying wood in landfills may be part of the solution; however, there are myriad other reasons (i.e. ecological, resource use, land use) for not doing this." Other studies include a USDA Forest Service study (USDA Forest Service Gen. Tech. Rep. RMRS-GTR-59. 2000) into Carbon Sequestration in Wood and Paper Products and the USEPA's 2006 Solid Waste Management and Greenhouse Gases – A Life-Cycle Assessment of Emissions and Sinks.

Environmental interest group

1) Anaerobic Biodegradability of Wood: A Preliminary Review

Mark Milke, Yinglei Fang, Stephen John

2)http://ir.canterbury.ac.nz/bitstream/10092/5088/1/12628412_WANZ_milke_wood_v2.pdf

3)The Decomposition of Forest Products in Landfills - J. A. Micales & K. E. Skog
<http://comenius.susqu.edu/biol/312/mical97a.pdf>

4)Inventory Improvement Project - UK Landfill Methane Emissions Model
Eunomia Final Report to Defra and DECC

http://randd.defra.gov.uk/Document.aspx?Document=9887_WR1124Finalreportincludingappendices.pdf

Construction and demolition

Dr Andrew Pitman of the Timber Research and Development Association
(www.trada.co.uk)

Question 3

Construction and demolition

The EA waste interrogator figures for 2009 and 2010 show the following:

2009	2010	
11	56	02 01 07 – Waste from forestry
7,681	1,932	03 01 05 – Sawdust, shavings, cuttings, wood, particle board and veneer
1,403	252	15 01 03 – Wooden packaging (assume pallets?)
42,408	5,200	17 02 01 – C&D Wood waste

69,326	4,984	19 12 07 – Wood waste from mechanical treatment
5,496	0	20 01 37 – Wood containing dangerous substances
78,182	50,354	20 01 38 – Municipal wood waste
204,507	62,778	Total Tonnes

Question 16
Environmental interest group (Green Alliance)

	gCO ₂ / kWh offset	kWh/t of waste wood	CO ₂ savings per tonne of wood (kgCO ₂)	CO ₂ savings from 300kt of wood (tCO ₂)
Gas CCGT vs electricity only wood incineration	400	933	373.2	111960
Gas heating vs wood heating	186viii	3500	651	195300
Additional savings	-	-	277.8	83340



Department
for Environment
Food & Rural Affairs



Llywodraeth Cymru
Welsh Government

Waste Duty of Care Code of Practice

November 2018

Presented to Parliament and to the National Assembly for Wales pursuant to
Section 34(9) of the Environmental Protection Act 1990



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This publication is available at www.gov.uk/government/publications

Any enquiries regarding this publication should be sent to us at WasteDutyofCare@defra.gov.uk or ResourceEfficiencyAndCircularEconomy@gov.wales
www.gov.uk/defra

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1. Overview

The duty of care legislation makes provision for the safe management of waste to protect human health and the environment.

The code of practice (the Code) sets out practical guidance on how to meet your waste duty of care requirements. It is issued under [section 34\(7\) of the Environmental Protection Act 1990](#) (the EPA) in relation to the duty of care set out in Section 34(1) of that Act. .

This Code applies to you if you import, produce, carry, keep, treat, dispose of or, as a dealer or broker have control of, certain waste in England or Wales.

Failure to comply with the duty of care is an offence with no upper limit on the courts' power to fine. In some instances a fixed penalty notice may be issued for failure to comply with the duty of care in place of prosecution. The Code is admissible as evidence in legal proceedings for Section 34(1) offences and its rules **must** be taken into account where relevant to questions raised in the case.

If your waste activities are authorised or registered in Scotland or Northern Ireland but you deal with waste in England or Wales, you need to follow this Code. If you operate across borders, you need to follow [Scotland's](#) and [Northern Ireland's](#) codes of practice alongside this one.

The regulators for the duty of care are the [Environment Agency](#) (EA) in England, [Natural Resources Wales](#) (NRW) in Wales and local authorities.

The occupiers of domestic property disposing of household waste from that property are exempted from the section 34(1) duty of care by and have a separate duty of care for the disposal of that waste under Section 34(2A). Non-statutory guidance is included at the end of the Code on how to meet that duty of care.

2. Scope of the duty of care

2.1 Duty of care: who it applies to

The duty of care applies to anyone who imports, produces, carries, keeps, treats, disposes of, or are a dealer or broker that has control of, controlled waste (referred to below for the purpose of this Code as a “waste holder”).

Waste holders are a:

- **waste producer** – any person whose activities produce waste. This includes private sector businesses such as shops, offices, factories and tradespersons (e.g. electricians, builders, glaziers and plumbers) and public sector services such as schools, hospitals and prisons, as well as charities and voluntary and community groups. It also includes permitted operations or exempt facilities that produce waste as part of their activities. If you carry out a waste operation that changes the nature or composition of the waste, you are regarded as a producer of the waste. Waste producers play a key role under the duty of care requirements as they are in the best position to identify the nature and characteristics of the waste
- **waste carrier** – any person, who normally and regularly collects, carries or transports waste in the course of any business or with a view to profit, including those that produce and transport their own waste e.g. builders and landscape gardeners
- **waste dealer** – any person, business or organisation that buys waste with the aim of subsequently selling it, including in circumstances where the dealer does not take physical possession of the waste
- **waste broker** – any person, business or organisation that arranges waste transportation and management of waste on behalf of another party, such as organisations contracting out waste collection services e.g. local authorities, supermarkets and producer responsibility compliance schemes
- **waste manager** – any person involved in the collection, transport, recovery or disposal of controlled waste, including the supervision of these operations, the after-care of disposal sites and actions taken as a dealer or broker

A separate duty of care applies to **householders** (occupiers of a domestic property), limited to taking all reasonable measures available to them to ensure their waste is only transferred to an authorised person.

For the purposes of this Code, occupiers of domestic property are not treated as a ‘waste holder’ as defined above, when dealing with household waste produced on that property.

Separate guidance on duty of care requirements for occupiers of domestic property are set out in section 5.

2.2 Waste holders: what your duty of care applies to

The duty of care requirements apply to household, industrial and commercial waste, also known as **controlled waste**.

Waste is any substance or object that the holder discards, intends to discard or is required to discard. The meaning of “discard” applies to “disposal” and “recovery” operations and processes and can be intentional or unintentional on the part of the holder. Whether a substance or object is waste is determined on a case by case basis. If you are unsure you can use the [‘legal definition of waste guidance’](#) to check if something is classified as waste.

The following definitions describe common waste operations and processes:

“Recovery” is any operation which has the main result of waste serving a useful purpose by replacing non-waste materials that would otherwise have been used to fulfil a particular function. An example is incineration for energy recovery (for further examples see [Annex II to the Waste Framework Directive](#)). Preparing for re-use and recycling are both recovery operations.

“Preparing for re-use” is the operation or process of checking, cleaning or repairing products that have previously been discarded so that they can be re-used without any other pre-processing, for example repairing bicycles, furniture or electrical or electronic equipment which have been previously discarded by their owners.

“Recycling” is any operation by which waste is reprocessed into products, materials or substances, whether for its original or other purposes, for example crushed waste glass graded for blasting or playground surfaces from waste tyres. (It does not include energy recovery or reprocessing into materials to be used as fuels or for backfilling operations.)

“Disposal” is any operation which is not recovery (even where the operation has a secondary consequence of reclaiming substances or energy). An example is landfill (for further examples see [Annex I to the Waste Framework Directive](#)).

2.3 Waste holders: what your duty of care does not apply to

See Schedule 1 to the [Controlled Waste \(England and Wales\) Regulations 2012](#) to check if your waste is controlled waste because of its source or type. Wastes not classed as controlled waste are:

- wastes listed in Article 2 of the [Waste Framework Directive](#) e.g. waste waters, decommissioned explosives, radioactive waste
- **waste containing animal by-products** where it is collected and transported in line with the [Animal By-Products Regulation](#) (see guidance for [England](#) and [Wales](#))

- **sewage, sludge or septic tank sludge** where it is supplied, managed or used in the ways described in regulation 3 of the Controlled Waste (England and Wales) Regulations 2012.

This Code does not cover the extractive waste duty of care. If you are responsible for managing waste from prospecting, extraction, treatment and storage of mineral resources and working quarries (extractive waste) under the EPA you are subject to different duty of care requirements.

2.4 Waste holders: how long your duty of care lasts

You have a responsibility to take all reasonable steps to ensure that when you transfer waste to another waste holder that the waste is managed correctly throughout its complete journey to disposal or recovery.

You can do this by:

- checking the next waste holder is authorised to take the waste - see section 3.4 for examples of authorisation
- asking the next waste holder where they are going to take the waste, and checking that the intended destination is authorised to accept that waste.
- carrying out more detailed checks if you suspect the waste is not being handled in line with the duty of care, e.g. requesting evidence that your waste has arrived at the intended destination and that it has been accurately described

If you receive waste you should cooperate with the previous waste holders in any measures that they are taking to comply with their duty of care. This includes supplying evidence that previous holders may need to ascertain that their waste has reached its end of waste location.

Each holder in the waste chain shares the duty of care obligations.

- If you use a waste dealer or broker, you each have a responsibility to comply with your duty of care obligations and to ensure that the waste is only transferred to an authorised person or establishment
- If you transfer waste to a waste treatment facility for preliminary treatment, you will generally still be responsible for the complete recovery or disposal operation (in accordance with Article 15(2) of the Waste Framework Directive)

“Treatment” is a recovery or disposal operation, including preparation prior to recovery or disposal.

- If you carry out a waste operation that changes the nature or composition of the waste, you are regarded as a producer of the waste when it leaves your site

3. Waste holders: waste duty of care requirements

You **must** take all reasonable steps to:

1. prevent unauthorised or harmful deposit, treatment or disposal of waste (see section 3.1)
2. prevent a breach (failure) by any other person to meet the requirement to have an environmental permit, or a breach of a permit condition (see section 3.2)
3. prevent the escape of waste from your control (see section 3.3)
4. ensure that any person you transfer the waste to has the correct authorisation (see section 3.4)
5. provide an accurate description of the waste when it is transferred to another person (see sections 3.5 and 3.6)

Failure to comply with the duty of care requirements is a criminal offence and could lead to prosecution.

3.1 Prevent unauthorised or harmful deposit, treatment or disposal

It is illegal to deposit controlled waste except under and in accordance with an [environmental permit](#) or a registered [waste exemption](#).

It is also illegal to treat, keep or dispose of controlled waste in a way that is likely to cause pollution of the environment or harm to human health.

Examples of unauthorised or harmful deposit, treatment or disposal include the following:

- **operating illegal waste sites** without the correct permit or appropriate exemption to accept or manage a particular waste
- **misclassification of waste** as a non-waste or a waste that does not fit the written description
- **fly-tipping** is the deliberate unlawful dumping of waste e.g. at the roadside or on privately owned land - the scale can vary from a single bin bag of waste to large quantities of waste dumped from trucks

If you suspect that someone is fly-tipping, illegally depositing, treating or disposing of waste, do not give your waste to them or take waste from them. If you suspect that you have unknowingly accepted misclassified waste, isolate the waste and report all the details to the regulator. You should report any suspected illegal activity to the [EA](#) or [NRW](#).

3.2 Prevent a breach of an environmental permit or a breach of a permit condition

Normally the operator of a waste treatment or recovery or disposal activity needs an environmental permit or to register an exempt waste operation.

Environmental permits set out specific conditions on how a waste operation **must** be carried out. The conditions will include limits to the amount of waste that can be handled, restrictions to the types of waste that can be handled, and measures that need to be put in place to protect the environment and human health.

Some waste activities may qualify for a waste exemption rather than a permit. The exemption must be registered and these too are subject to strict conditions such as limits to the amount of waste that can be handled or how they are handled.

There are some operations which do not need to be registered. These relate to the temporary [storage of waste](#) pending collection. Although you do not have to register these operations, you must still comply with the conditions of the operation.

Examples of activity that would breach a permit condition or exemption limit include the transfer of waste:

- to a facility that does not have an appropriate permit or exemption to accept or manage that type of waste
- in a condition which means that it cannot be managed or stored safely pending removal e.g. waste being stored outside the confines of buildings or bunds
- in a quantity that causes a facility to exceed the limits allowed by its permit or exemption e.g. increasing or expanding piles of waste

If you suspect that someone does not have an appropriate environmental permit or registered exemption, or that they are breaching a condition of their permit or exemption, you **must not** give them your waste or take waste from them. You should report suspected illegal activity or breaches to permits or exemptions to the [EA](#) or [NRW](#).

3.3 Prevent the escape of waste

To prevent waste from escaping from your control, or from your employees' or waste contractors' control, you **must** make sure it is handled and stored safely and securely.

You can do this by:

- using containers that are:
 - clearly and correctly labelled
 - suitable for the storage, transport and subsequent management activities by you and following waste holder
 - designed to prevent leakage, contamination or spoiling of waste (spoiled waste is waste that cannot be managed in the way intended)

- limiting access to the waste to only those that are authorised to handle it. This will help prevent accidents, pests, incidents of vandalism and theft. It will also stop unauthorised people adding to the waste and so invalidating the waste description (see section 3.5)
- ensuring vehicles are covered and waste is secured appropriately for transport purposes

Before your waste is collected and disposed of or recovered you **must** assess and classify waste as set out in the [waste classification guidance](#). This identifies whether the waste is hazardous or not, and which controls apply to the movement of the waste to prevent harm to people and the environment.

3.4 Transfer waste to an authorised person

You should check whether a person or business is authorised to take waste before you transfer your waste to them. An authorised person is one of the following:

1. someone who has a valid registration as a carrier, broker or dealer of waste
2. a waste management operator who has an environmental permit or registered exemption to accept such waste

You can ask the person or business you transfer your waste to or who arranges the transfer for evidence of their authorisation, such as a copy of their permit or proof of their exemption registration.

You should also use the public register to check any evidence they provide. The register contains information on:

- waste carrier, broker and dealer registrations
- environmental permits for waste operations
- waste exemptions

In England, you can check registration on the [EA's public register](#) or call 03708 506 506. In Wales you can check on the [NRW's public register](#) or call 0300 065 3000.

The person receiving the waste must also check that the previous holder has complied with their duty of care. If you suspect that the previous waste holder has breached their duty of care (e.g. by misdescribing the waste or not properly storing it), do not accept the waste and report your suspicions to the [EA](#) or [NRW](#).

Record any checks you make as you can use this as evidence that you have met your duty of care.

If you use a dealer or broker to manage your waste, they **must** be registered as a dealer or broker with their regulator, even if they do not take physical possession of the waste.

Where a dealer or broker is the transferor or transferee of the waste, their details (including their registration number) **must** be included in the waste transfer information.

Waste carriers, dealers and brokers **must** present evidence of registration if requested by a police constable, an authorised officer of the EA, NRW or local authority. It is an offence not to do so without reasonable excuse and you could be prosecuted under [section 5 of the Control of Pollution \(Amendment\) Act 1989](#), or issued with a fixed penalty notice under section 5B of that Act. To register as a carrier, dealer or broker, contact the [EA in England](#) or [NRW in Wales](#).

3.5 Provide an accurate description of waste

When you transfer waste to another person, you **must** ensure that:

1. a written description of the waste is agreed and signed by you and the next holder. The description is part of the waste information you must provide.

For [non-hazardous waste](#) you can do this by using:

- “edoc” – a free national electronic duty of care system that creates, shares, signs and stores waste transfer notes and season tickets for you online - see www.edoconline.co.uk for more information
- a paper “[waste transfer note](#)” – a form to fill in or you can use alternative documentation e.g. an invoice, as long as it contains all the required information
- a “[season ticket](#)” - a single waste transfer note that covers a series of non-hazardous waste transfers. The season ticket can last up to one year and be used for regular transfers of the same type of non-hazardous waste with the same carrier. If you have several sites serviced by the same carrier with the same types of waste collected, they can be listed in a schedule to the season ticket. You should keep a record of the collection times and the quantity of waste

A waste information note is not required for non-hazardous waste if the waste holder does not change on the transfer of waste e.g. the waste is moved to other premises belonging to the same business. However, it is best practice that the business understands who has responsibility for that waste and a record is kept of internal transfers for audit purposes.

For [hazardous waste](#) you need to use a:

- [consignment note](#) - this applies to all movements of hazardous waste including collections from businesses by registered waste carriers, movements from one premises to another within the same business and all movements from the waste producer’s premises. The only two exceptions where a consignment note is not needed are where domestic hazardous waste (other than asbestos waste) is removed from a domestic household or waste is imported or exported under [international waste shipment](#) controls (which uses an equivalent note)
2. the description contains a statement confirming that you have fulfilled your duty to apply the waste hierarchy as required by regulation 12 of the [Waste \(England and Wales\) Regulations 2011](#) (see **Waste Hierarchy Guidance** for [England](#) and [Wales](#))

3. the description of the waste is accurate and contains all the information you are reasonably in a position to provide to ensure the lawful and safe handling, transport, treatment, recovery or disposal by subsequent holders, including:
- [classification](#) of the waste by using the appropriate codes (referred to as the List of Wastes (LoW) or European Waste Catalogue (EWC)) - Appendix A of the [Waste Classification Technical Guidance](#) provides a list of the codes as well as advice on how to assess and classify waste
 - its quantity and nature and whether it is loose or in a container
 - if in a container, the type of container
 - the time and place of transfer
 - the [SIC code](#) of the transferor (current holder of the waste)
 - the name and address of the transferor and transferee (person receiving the waste) and their signatures (the signature can be electronic as long as an enforcement officer can view it)
 - the capacity in which the transferor and transferee are acting (e.g. as a producer, importer or registered waste carrier, broker or dealer) and their relevant authorisation to act in that capacity (e.g. their permit number or registration number)

You should also consider whether there are any problems associated with the waste that you need to describe so that subsequent users can handle it properly. Examples include whether the waste:

- needs a special container
- needs particular treatment or handling, for example [batteries](#) or waste electrical and electronic equipment ([WEEE](#))
- can or cannot be mixed with other wastes
- could cause a problem during treatment or disposal (e.g. dusty, smelly or otherwise offensive waste)
- has been processed (e.g. undergone treatment) or had certain materials removed from it (e.g. packaging) to meet [basic characterisation](#) requirements of wastes destined for landfill
- displays a hazardous property (e.g. flammable) or presents a chemical hazard
- has other issues (e.g. risk of spillage or leakage of liquids)

If you receive waste, you **must** ensure the waste matches the written description and that your permit allows you to accept such waste.

If you are operating under a waste exemption, you **must** ensure that by accepting any waste you are not contravening the exemption criteria e.g. waste limits.

3.6 Retention of waste documentation

You **must** keep a copy of the waste description for waste you have transferred or received (either electronically or on paper format) for:

- two years for [non-hazardous waste](#)
- two years for season tickets
- three years for hazardous waste consignment notes (different retention periods apply for consignees (receivers) of hazardous waste; see further detail in the [hazardous waste guidance](#))
- six years if you are a landfill operator for non-hazardous waste (for landfill tax purposes)
- the lifetime of your permit if you are a landfill operator for hazardous waste
- the lifetime of an environmental permit (when the permit is surrendered, the regulator often requires a history of the types of waste received)

If an authorised officer of the EA, NRW or local authority asks you to provide the written description of waste, or a copy of it, and you fail to do so, they can issue a fixed penalty notice. Where the waste is hazardous waste, a variable monetary penalty for breach of the requirements to supply information may be issued.

4. Other waste laws for waste holders

A number of other waste laws are relevant to waste holders in particular circumstances. Some of these are briefly described below.

4.1 Hazardous Waste

If you produce or deal with hazardous waste you **must**:

- comply with the [Hazardous Waste Regulations](#)
- follow [specific requirements for consigning hazardous waste](#)

4.2 Producer Responsibility Regulations

If you manufacture, import or sell packaging, electrical and electronic equipment (EEE), batteries, or end-of-life vehicles (ELVs) you **must** follow the Producer Responsibility Regulations in [England](#) and [Wales](#).

4.3 Separate Collection

If you **collect** waste paper, metal, plastic or glass you **must** comply with the rules on **separate collection** (see guidance for [England](#) and [Wales](#)). The rules require that you collect waste paper, plastic, metal and glass separately from each other and from other wastes where it is both:

- necessary to comply with the waste hierarchy and for the protection of human health and the environment, and to facilitate or improve recovery (see the **Waste Hierarchy Guidance** for [England](#) and [Wales](#))
- technically, environmentally and economically practicable (TEEP) (see [European Commission guidance \(paragraphs 4.3.4 and 4.4\)](#) for guidance on TEEP practicability tests)

Where waste paper, metal, plastic or glass has been collected separately, all reasonable steps **must** be taken to keep them separate from other waste or materials.

If you are a **materials facility** and receive household waste (or household waste like material) consisting of mixed glass, metal, paper or plastic for separating out you **must**:

- sample and test the materials you receive and send out
- record the information
- report every three months to the regulator

See the **Materials Facilities Guidance** for [England](#) and [Wales](#), for details on when, how and what should be recorded.

4.4 Landfill

If you send waste to landfill or operate a landfill site:

- you **must** comply with the relevant permitting requirements in [England](#) and [Wales](#) for the landfilling of waste
- you **must** comply with [waste acceptance rules](#) required by [legislation](#) - if you do not, the landfill operator will be unable to accept your waste
- the written description of waste **must** contain details of any [pre-treatments or processes](#) that have been applied to the waste
- you **must** comply with the rules regarding landfill tax in England, (see the [general guide to landfill tax](#)), and Landfill Disposals Tax in Wales, (see the [Welsh Revenue Authority guidance](#))

If your waste is being disposed of at a landfill site in Wales, you can check on the Welsh Revenue Authority list of landfill site operators to see if the landfill site is an authorised landfill site.

In Wales you may become liable to Landfill Disposals Tax on an unauthorised disposal if you knowingly caused or knowingly permitted an unauthorised disposal to be made. In some circumstances, it will be presumed that a person knowingly caused or knowingly permitted an unauthorised disposal. This is where, at the time of the disposal:

- a person controlled or was in a position to control a motor vehicle or trailer from which the disposal was made, or
- a person was the owner, lessee or occupier of the land on which the disposal was made

If HMRC find you have deliberately supplied false information or withheld information which causes another person to make an incorrect landfill tax declaration, you will be liable to a civil penalty. The maximum penalty for misrepresentation is equal to the amount of the under-declared landfill tax.

HMRC can also recover landfill tax from those who dispose of waste, or knowingly facilitate the disposal of waste, at sites without a permit. This also applies to material deposited at permitted sites if not expressly exempt.

The Welsh Revenue Authority (WRA) is also able to charge unauthorised disposal rate (initially £133.45 per tonne) on disposals made outside of an authorised landfill site (an unauthorised disposal). A person may become liable to the unauthorised disposals rate on an unauthorised disposal either where they made the disposal, or where they knowingly caused or knowingly permitted the disposal to be made.

In Wales you must be registered as an authorised landfill site with the WRA and you must comply with the Landfill Disposals Tax (Wales) Act 2017 (and legislation made under it) which makes provision for tax to be charged on taxable disposals in Wales.

4.5 Importing or exporting waste

If you import or export waste, you **must** comply with the [European and UK rules](#) that govern how you can ship waste into or out of the country and, in the case of exports, with the rules of the importing country.

5. Occupiers of domestic property: waste duty of care requirements

As an occupier of a domestic property, you have a duty to take all reasonable measures available to you to ensure you only transfer household waste produced on your property to an authorised person.

5.1 Who does this duty of care apply to?

The duty of care to ensure you only transfer waste to an authorised person applies to all occupiers of any domestic property when dealing with their household waste produced on that property.

The wider duty of care detailed in other sections of this code of practice, including the requirement for waste transfer notes (see section 3.5), specifically **does not** apply to the occupier of a domestic property when they are dealing with their household waste.

5.2 What waste is covered by this duty of care?

For the purpose of applying this duty of care, household waste is generally considered to be any waste produced within a domestic property. This is not just regular black bin bag waste, but other material you want to dispose of from your property such as old mattresses, furniture and household appliances. For the waste duty of care this includes septic tank sludge which is not used on agricultural land within the meaning of the Sludge (Use in Agriculture) Regulations 1989, and construction and demolition waste.

If a tradesperson carries out work on your property, they are responsible for the waste they produce including its transport and disposal. They must comply with their own duty of care obligations in relation to that waste, and the cost of its disposal should be included in what they charge for the work. As you are not transferring the waste to them your duty of care does not apply. If you have a tradesperson take away waste that you produced, for example if you add your own waste to their skip, the duty of care will apply for that waste.

Waste that comes from a property or part of a property that is mainly used for commercial business is regarded as commercial waste and subject to the duty of care set out in sections 2 to 4 of this code of practice. Waste resulting from the clearance of premises after they have been vacated, such as a landlord or letting agent clearing student housing, is also not considered to be household waste.

5.3 How should you dispose of your waste?

If you have household waste which cannot be appropriately disposed of through your normal local authority waste collection service (this may be provided by a contractor on behalf of the local authority) or within the boundary of your home¹ you can:

¹ This must be done in a way that does not pollute the environment or harm human health [EPA 33\(1\)\(c\), or cause a nuisance.](#)

- see if your local authority's household waste and recycling centre accepts the waste and take it yourself
- check if your local authority offers special collection services
- use a private business that provides a waste collection service
- take your waste to a site run by a private business with the appropriate authorisations

You should check whether a person or business is authorised to take waste before you transfer your waste to them. An authorised person includes:

- the local authority that provides your normal waste collection service
- someone who has a valid registration as a carrier, broker or dealer of waste
- an operator of a waste site with an appropriate environmental permit or exemption

While important, meeting a local authority's household waste collection requirements is a separate issue not covered by this duty of care.

5.4 What reasonable measures should you take when a private business takes your waste?

If you engage a private business (e.g. skip hire, house clearance) to take away your waste rather than the local authority, in order to meet your duty of care you should check that they are an authorised carrier with up to date and valid **upper tier** registration. This includes a business which approaches you and offers to take your waste. Each carrier should have a registration number starting CBDU, followed by a set of numbers.

In England you can check whether a waste carrier is registered on the [Environment Agency's online public register](#) of waste carriers, brokers and dealers using their registration number, business name, or postcode or call 03708 506 506. The site can also be used to find registered carriers near you.

In Wales you can check on the [Natural Resources Wales public register](#) of carriers, brokers and dealers or call 0300 065 3000.

An upper tier registration allows a person or organisation to transport other people's waste, while lower tier registrations are primarily for organisations carrying their own waste.

Instances where a private business handling your household waste is exempt from registering, or can do so under a lower tier registration are very rare. However, charities, voluntary organisations and waste collection authorities can use lower tier registrations.

5.5 What reasonable measures should you take when taking your waste to a private waste site?

If you are transporting your own waste for disposal, you will typically want to take it to your local authority's household waste and recycling centre, having first checked that they can

accept that type of waste. If however, you take your waste to a site run by a private business, in order to meet your duty of care you should check that they have a registered permit or exemption.

In England you can check if a waste site has a permit or exemptions through the [Environment Agency's online public registers](#) for waste operations and waste exemptions using their registration number, business name, or postcode, or call 03708 506 506.

In Wales you can check on the [Natural Resources Wales public register](#) of waste, water quality, water resources and installation permits or call 0300 065 3000.

5.6 What evidence can you use to demonstrate you have met your duty of care?

There is no legal requirement to keep records when you check a carrier is registered or a site is permitted or exempt, as described in sections 5.4 and 5.5 above, and a lack of records does not prove you did not meet your duty of care. However, if your waste is subsequently fly-tipped and investigated by the local authority, records can quickly show that you met your duty of care. For example, you could do one of the following:

- record any checks you make, including the operator's registration, permit or exemption number
- keep a receipt for the transaction which includes the business details of a registered operator
- ask for a copy or take a photograph of the carrier's waste registration or site's permit
- record details of the business or of any vehicle used (registration, make, model, colour), which can be linked back to an authorised operator

These steps can help ensure your waste will be handled appropriately and not cause harm to others or the environment. These steps can also help enforcement officers catch those responsible if your waste is fly-tipped.

5.7 What happens if you do not meet your duty of care?

It is a criminal offence if you do not take all reasonable measures available to you to meet your duty of care. You could face prosecution and, on conviction, a fine and criminal record.

You may be given a fixed penalty notice for breaching the duty of care. While there is no obligation to pay this, if you choose to do so within the specified period, you cannot be prosecuted for the offence.

You may also provide evidence to the authority at any time that prosecution is not appropriate, either by demonstrating you met your duty of care, or that prosecution is not proportionate. It is at the authority's discretion whether to proceed to prosecute.

WRA Grades of Waste Wood

Grade	Typical Markets	Typical Sources of raw material for recycling and/or recovery	Typical Materials	Typical non-wood content prior to processing	Notes
Grade A Pre-Consumer Waste Wood (*1) and untreated wooden packaging = Clean un-treated	A feedstock for the manufacture of professional and consumer products such as animal bedding, equine and landscaping surfacing. May also be used as a fuel in domestic and non-IED Chapter IV biomass installations and for the manufacture of pellets and briquettes.	Wood Product Manufacturing, Distribution, Retailing, Packaging and Secondary manufacture, e.g. joinery and pallet reclamation.	Solid softwood and hardwood. Packaging waste, scrap pallets, packing cases and cable drums. Process off-cuts from the manufacture of virgin/sawn timber and untreated board products.	Nails and metal fixings. Minor amounts of non-hazardous surface coatings, such as water-soluble paint.	This is a waste as defined by the waste regulations. Does not require an IED Chapter IV installation and should not contain any treated or low-grade material.
Grade B Business waste wood = Treated Non-hazardous	This is the preferred feedstock for industrial wood processing operations such as the manufacture of panel board products. Can also be used for IED Chapter IV biomass.	As Grade A, plus construction and demolition operations, skip operators, transfer stations.	May contain Grade A material as above plus building and demolition materials and domestic furniture made from solid wood.	Nails and metal fixings. Some paints, plastics, glass, grit, non-hazardous coatings, binders and glues. Limits on treated or coated materials as defined by end users and IED.	This is mostly solid wood. Some feedstock specifications contain a 5% to 10% limit on former panel products such as chipboard, MDF and plywood. Is a waste for the requirements of Waste Management Regulations. Will require an IED Chapter IV compliant installation for biomass.
Grade C Municipal waste wood = Treated Non-hazardous	For use in the IED Chapter IV biomass installations and for panel board in controlled volumes.	All above plus municipal collections, transfer stations and HWRs.	All of the above plus flat pack furniture made from board products and DIY materials.	Nails and metal fixings. Paints, coatings and glues, paper, plastics and rubber, glass, grit. Coated and treated timber (non CCA or creosote).	This is mostly board products. Mainly suitable for IED Chapter IV compliant biomass installations, but also suitable for panel board manufacture with correct processing and blending. Is a waste for Waste Management Regulations.
Grade D Hazardous waste wood = Treated hazardous	Requires disposal at facilities licensed to accept hazardous waste.	Waste wood from hydraulic engineering, such as wood from docks. Waste wood from industrial applications such as cooling tower timbers, woodblock flooring or moulds Waste wood from boats, carriages and trailer beds Waste wood treated with CCA or creosote	Agricultural fencing, telegraph poles, railway sleepers.	Copper chrome arsenic (CCA) preservation treatments and creosote.	These materials must be segregated and consigned as hazardous to sites permitted to accept hazardous wood.

Clean/untreated waste wood is suitable for processing into animal bedding, panel board feedstock, landscaping or equestrian surfaces and biomass. Treated, but non-hazardous waste wood is suitable for processing as a feedstock for panel board or energy recovery in a Chapter IV compliant facility. Hazardous waste wood can only be disposed of in a facility licensed for this purpose.

¹ Pre-consumer waste wood is waste wood material created during the manufacturing process of virgin wood, not involving the application of treatments, e.g. offcuts or trimmings from virgin/sawn timber. It is also waste wood material created during the manufacturing process of raw, untreated board products such as panel board, MDF and plywood (for clarity, this waste wood can only be used/burnt at source). Waste from joinery activity using these untreated wood materials is also included in this definition.

Source: The Wood Recyclers' Association July 2021

Ein cyf/Our ref: WIR 2000440

Eich cyf/Your ref:

Dyddiad/Date: 17th April 2020

Dear Caroline

**Use of treated waste wood to manufacture animal bedding at R.A & C.E Platt Ltd, Llay
Environmental Permitting Regulations (England and Wales) 2016**

As you are aware Natural Resources Wales (NRW) has been investigating the treatment of waste wood for the manufacture of animal bedding at R.A & C.E Platt Ltd. This letter is to clarify our position on waste wood, and its use for animal bedding and to outline what options you have in order to continue using waste wood for the manufacture of animal bedding.

Waste wood can be used in the manufacture of animal bedding; however, it must be clean, untreated wood. Wood that has been treated (e.g. veneers, MDF, glues, varnishes, stains etc.) could potentially contain substances which can harm livestock. Subsequently only untreated waste wood and virgin timber can be used to manufacture animal bedding, for example non-hazardous waste wood from the arboriculture sector, packaging waste, kiln-dried scrap pallets (that have not been treated), packing cases, cable drums and off-cuts from the manufacture of untreated wood products.

If you have multiple sources of treated and untreated waste wood and you mix them together then the entire pile is classed as treated waste wood and cannot be used for animal bedding. To assist with discussions from your suppliers of waste wood in England, the Environment Agency has definitions of waste wood and only 'Grade A' clean, untreated waste wood can be used in the manufacture of animal bedding. NRW does not follow the same grading classification of waste wood, however, the type of waste wood listed as 'Grade A' by the EA, are the types of wood we would expect to be used to manufacture animal bedding in Wales. Guidance on the different grades of wood are also included in the PAS111 guidance in the accompanying email.

At present Platt's has registered three waste exemptions registered at the Llay premises, these are:

- **S2** - Storage of Waste in a Secure Place
- **T4** - Preparatory treatments (baling, sorting, shredding etc)
- **T6** - Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising.

The above exemptions do not allow the production of animal bedding from treated waste wood sources. The T6 exemption does allow the production of animal bedding from **untreated** waste sources, however it does not include the EWC code 03 01 05 which is the waste wood type currently being accepted by Platt's according to the waste transfer notes you have supplied.

Chester Road, Buckley, Flintshire, CH7 3AJ.

You have the following options available to you to continue the manufacture of animal bedding using clean, untreated waste wood; all of which can only be done with the immediate cessation of the acceptance and use of treated wood:

1. Use only clean, untreated waste wood for the manufacture of animal bedding; this would require you to adhere to the strict limits of the T6 exemption you have registered which allow you to:
 - Treat or store up to 500T of clean, untreated waste wood (the relevant EWC codes are listed in the exemption) over any 7-day period. **N.B. This does not allow you to accept and treat wood under the EWC 03 01 05.**
 - Waste can be stored for up to 3 months after treatment
 - If you are chipping treated or coated wood, you must not use this for construction, burning as fuel, mulch, animal bedding or as feedstock for composting.

Or

2. Apply for an environmental permit through NRW if you are unable to adhere to the limits of the exemption to allow you to produce animal bedding from clean, untreated waste wood

It would be worth pointing out at this stage that the material/bedding produced by R.A & C.E Platt Ltd will still be considered a waste by NRW unless it conforms to a quality protocol such as PAS111 or has met end-of-waste status; guidance on these has been attached in the accompanying email. As such, all movements of the animal bedding must be accompanied by a correctly completed waste transfer note and all sites receiving the bedding must have an appropriate authorisation in place, such as a U8 waste exemption which allows the use of up to 100 tonnes waste animal bedding at any one time.

As we are still investigating this matter, and considering our enforcement response, please can you respond to this letter in writing, no later than Friday 1st May 2020, and advise us of what actions R.A & C.E Platt Ltd will undertake to ensure that the operations in Llay are compliant with the relevant regulations.

Please mark your response for the attention of Paul Moore. If you wish to discuss the contents of this letter, please contact Paul Moore using the following email address:

[REDACTED]

Yours sincerely,

[REDACTED]

Louise Peel

Waste Regulation Team Leader (NE)

Chester Road, Buckley, Flintshire, CH7 3AJ.

Croesewir gohebiaeth yn y Gymraeg a'r Saesneg
Correspondence welcomed in Welsh and English

Natural Resources Wales

Waste Technical Group Meeting

11 January 2018

Paper Title:	Wrong waste, wrong place – regulation of waste wood and update on
Paper Author:	Michelle Griffiths & Tim Morris
RBB Sponsor:	Michelle Griffiths
Paper Reference:	WTG26-02

Purpose of Paper:	To set out the current issues with waste wood
Is the paper for decision, discussion or information:	Information and Decision <ol style="list-style-type: none"> 1. Agree the terms to be used for waste wood and to avoid referring to PAS111; 2. Agree to the development of a waste wood OGN to advise of the types of waste wood and options for the wood; 3. Note that a further paper on permitting implications to deal with treated hazardous waste wood will be submitted at a future WTG.
If a decision is required at RBB, please summarise:	None
Please list who has been consulted or helped in the preparation of this paper:	Kate Thomas

Impact (<i>complete where applicable</i>)	Very significant	Significant	Not significant
How many people will this decision affect?		X	
What are the environmental implications?		X	
What are the political implications?	X		
What are the economic implications?		X	
What are the resource implications for NRW?			X
Other			

1. Issue

Wood has become a high profile and challenging waste stream for Natural Resources Wales. This paper sets out the regulatory and operational issues relating to wood and provides an overview of the work currently ongoing to resolve these issues.

The issues can be summarised as:

- Lack of classification of treated waste wood by operators;
- PAS111 and development of new code of practice;
- Waste wood flows;
- Treated wood – wrong waste wrong place;
- Treated hazardous waste wood
 - Classification;
 - Lack of adequate infrastructure and permitted sites
- Permitting of waste facilities to accept hazardous waste wood;
- Impacts on Local Authority permitting of non-Chapter 4 IED facilities;
- Operational issues which include stockpiling and potential for fires at sites handling high volumes of waste wood.

2. Background and update

2.1 Waste wood classification

Virgin timber and virgin timber residues are not waste. Wood and associated residues such as off-cuts, shavings chippings and sawdust, either treated or not treated, is waste.

Waste wood is classified in chapters 03, 15, 17, 19 & 20 of the List of Wastes (LoW). Each of these chapters contain a mirror hazardous and mirror non-hazardous waste code for wood.

Non visible wood treatments such as sap-stains, fungicides and preservatives and visible treatments such as creosote, paint, varnish, resins, glues and oils, may be applied to wood before and during its use.

In order to assign the correct code to waste wood there is an absolute legal requirement to assess it as either hazardous or non-hazardous. In accordance with WM3 (Waste Classification Technical Guidance) an assessment must be carried out to determine the chemical composition of the waste. Without this assessment, if the waste consignee fails to undertake this assessment, the waste defaults to hazardous.

The law allows no flexibility on this requirement.

For visibly clean waste wood which cannot be traced back to the saw mill or aboriculture sector, only sampling and analysis can determine if invisible treatments have been used.

Therefore, we considered that waste wood is either:

- Untreated waste wood;
- Treated non-hazardous waste wood;
- Treated hazardous waste wood.

Assigning the correct EWC code and adequately describing the waste is essential as it determines the treatments and end destination options available for the waste stream.

Issues:

- We are concerned that these assessments are not being carried out and that waste wood is subsequently being misclassified. This could result in hazardous waste wood entering sites which are unauthorised and unsuitable outlets for this waste stream.

The Environment Agency have undertaken a series of audits and have found little evidence to demonstrate that sites handling waste wood are testing or classifying their waste wood on receipt. Issues with the classification of waste wood have been found across the waste chain.

- In the UK, 0.5% of treated waste wood is coded as hazardous. In Germany, it is 15%. This suggests that up to 750,000 tonnes of treated waste wood is being misclassified in the UK as non-hazardous.

Action currently in progress: We are working with the Environment Agency, The Wood Recycling Association and others to develop a code of practice for the assessment of waste wood based on wood type approval (for example structural, furniture or garden), supplemented by sampling and analysis if required.

The Environment Agency has issued Regulatory Position Statement to provide an interim period for the wood recycling industry to develop and implement effective procedures to deliver compliance with the requirement to correctly assess and classify waste wood. This standard will be based on a wood type approval, which involves the identification of likely sources of treated hazardous waste wood, (e.g. structural, furniture, gardens).

A Regulatory Decision RD46 request has been submitted to WTG alongside this paper for NRW to take a consistent approach whilst a Code of Practice is developed.

2.2 The Wood Recycling Association grading standard

The wood recycling industry grades wood waste into four grades in accordance with the Publicly Available Industry Standard, PAS111:2012 (Specification for the requirements and test methods for processing waste wood).

<http://www.woodrecyclers.org/PAS111.pdf>

The purpose of PAS111 is to provide a specification for individuals and organisations recovering and processing waste wood, ensuring customers are assured that they are procuring a material of consistent quality.

Operators use the PAS111 grading system to describe their wood **post** processing.

This can cause confusion as the grading system does not adequately describe the wood in regulatory terms. Wood should always be described as:

- Untreated waste wood
- Treated waste wood – non-hazardous
- Treated waste wood – hazardous.

If untreated and treated wood are mixed together, we would consider the entire load to be a treated wood.

Correctly describing waste wood allows waste to end up in the correct end destination. The EAs RPs provides a useful description of waste wood in the absence of assessment and classification:

‘unassessed waste wood, including treated wood for chapter IV compliant incinerator or board manufacture only’.

Action in progress: (as sections 2.1) We are working with the Environment Agency, the Wood Recycling Association and others to develop a code of practice for the assessment of waste wood based on wood type approval, supplemented by sampling and analysis if required.

Recommendation 1: Officers regulating sites handling wood no longer refer to the industry grading system and only refer to wood in the regulatory terms outlined above.

2.3 Waste wood flows

Waste wood enters the waste stream predominately by these three main routes:

Location	Potential wood type
Manufacturing off cuts	Un-treated and treated waste wood
Local Authority Civic Amenity sites	Treated non-Hazardous and treated hazardous
Construction and demolition activities	Treated non-Hazardous and treated hazardous

It is the responsibility of the producer of the waste to classify their wood. In the case of civic amenity sites, the householder is the producer, but householders are exempt from this requirement.

Civic Amenity sites are unlikely to receive untreated wood and therefore the likely risings are treated non-hazardous and treated hazardous. In this scenario, the producer of the waste is now the Civic Amenity site and they

should classify the wood before it continues along the waste chain. If they are unable to do this, then there is a presumption that the waste wood is hazardous. Most wood waste collected by local authorities from household and commercial sources is considered to be treated wood waste. See image below for a typical CA site skip of wood waste.



Once collected from a civic amenity site the waste is likely to go to a transfer station for further sorting.

- Any waste wood that has been received as treated cannot be re-classified as non-treated waste wood.
- If sampling is not carried out at any point in the flow of the waste, then there is no evidence that the operator can use to justify the re-classification.

This also means that the ultimate destination for treated waste wood arising from CA sites will be to Chapter IV IED compliant facilities.

Note that only waste wood that meets the following requirements can go for incineration at non-Chapter IV IED compliant facilities:

*‘wood waste with the exception of wood waste which **may** contain halogenated organic compounds or heavy metals as a result of treatment with wood preservatives or coating and which includes, in particular, such wood waste originating from construction and demolition waste’.*

Historically where timber has been treated the treatments were organo-chlorines such as lindane or dieldrin or heavy metals based normally copper./chrome/ arsenic.

2.4 Treated waste wood – Wrong waste, wrong place:

Because of the lack of adequate classification of waste wood, we are concerned that treated waste wood is being passed on as untreated wood and have acquired through investigations some evidence to support this view. We are aware that treated waste wood is being used as a fuel for biomass, in animal bedding and composting. This may lead to health and environmental consequences (emissions and combustion ash), and distort the markets.

The only suitable recovery options available for most wood waste collected by local authorities from household and commercial sources and construction and demolition sources is for use as biomass fuel at Chapter IV Industrial Emissions Directive compliant facilities.

2.4.1 Use in animal bedding and composting: Treated waste wood is not suitable for recovery in animal bedding or composting operations. This is due to the presence of hazards such as chemical wood treatments and physical contamination that can pose a risk to the environment and animal health.

2.4.2 Use in non-chapter IV IED facilities (as a result of) Renewable Heat Incentive (biomass) Schemes, including ‘pellet’ burners and SWIPS: The Ofgem regulated renewable heat incentive scheme is a payment in England, Scotland and Wales, for the generation of heat from renewable energy sources that was introduced in November 2011. The impact of this scheme has resulted in the potential for treated waste wood to be drawn into biomass as the capacity of non-treated waste wood is not available to feed the increasing demand from operators registering for the scheme. It is an unintended consequence of a scheme intended for a policy area for energy (which is non-devolved). The Government has inadvertently incentivised burning of waste wood without acknowledging waste controls.

We are working with Defra, BEIS, and the Forestry Commission to ensure waste management controls are complied with and the quality of the feedstock is known/controlled (could affect 1.8-2.8 mt of waste wood). RHI and wood burning and BSL list. More information on the RHI scheme can be found here: <https://www.ofgem.gov.uk/ofgem-publications/86165/drhifactsheetanintrotoscheme20feb2015web-pdf>

2.4.3 Mis-reporting of fate of waste wood by Local Authorities: Through our monitoring role of Local Authority Recycling Targets (LART) we have found that LAs have been classifying their waste wood as ‘recycled’.

In the 2015/16 several Local Authorities reported that up to 100% of their wood waste had been recycled. In contrast, other local authorities reported that up to 99% of their wood waste had been incinerated and therefore not recycled. Therefore, there is inconsistency in reporting the accurate fate of

this material in WasteDataFlow amongst local authorities, which has created a reporting disparity.

This year we have been closely scrutinising the local authority reporting of wood waste recycling and rejects in WasteDataFlow and have written have written to LAs on two separate occasions to advise them of our concerns with regard to reporting the fate of waste wood. The latest data received from LAs indicates that they are now starting to report the correct fate of their wood waste.

Recommendation 2: WTG is asked to agree the development of an OGN which will provide regulatory clarity to officers on types of wood, flows of wood and options for waste wood.

3. Hazardous waste wood

As has been outlined in Section 2.1 above, unless appropriate assessment and classification of treated waste wood is undertaken then the law requires the default classification to be 'hazardous'.

However, there are several consequences to classifying all waste wood arising at civic amenity and C&D sites as hazardous and any subsequent enforcement of this requirement:

- This classification would have wider impacts on the panel board industry as much of the wood demand could no longer be met, despite it potentially being of use;
- Most permitted facilities are not permitted to accept hazardous waste wood, in fact the many permits explicitly prohibit the acceptance of hazardous waste (see Section 4);
- Onward destinations are also not permitted to accept hazardous waste wood;
- There is no Chapter IV IED capacity in south Wales for hazardous waste wood and only one facility in north Wales.

Assessment and classification of wood as hazardous, or the absence of classification resulting in a default to being hazardous would mean that mixed waste wood defaults to hazardous. This means that any movement from sites is subject to the hazardous waste movement controls.

We have had similar situation in the past with other waste streams such as WEEE. The options available for the consignment of the waste are:

- dual coding - mixed waste wood is consigned using both hazardous and non-hazardous
- ensuring hazardous and non-hazardous treated waste woods are segregated at source and only hazardous waste wood is consigned from site.

Actions currently in progress: Not all treated wood is hazardous, it is likely to only be in the region of 1 -15% of all waste wood arising. To be pragmatic, as stated in section 2.1 above, we are working with the Environment Agency, the Wood Recycling Association and others to develop a code of practice for the assessment of waste wood based on wood type approval, supplemented by sampling and analysis if required.

4. Permitting implications

Standard Rules Permits specifically prohibit sites accepting hazardous waste. By correctly identifying hazardous waste wood, we recognise that this will create permitting issues at sites reliant on handling currently misclassified waste wood. Civic amenity sites, skip operators, wood processors, panel board manufacturers and biomass incinerators are not authorised to handle or use hazardous waste wood.

Once the time limited Regulatory Decision comes to an end, there will be the need to ensure that any hazardous waste identified goes to adequately permitted facilities. Currently, there are no known facilities that can accept treated hazardous waste wood.

This would require permit variation and will incur associated costs. Hazardous waste wood codes will need to be added to appropriate Standard Rule Sets, bespoke permits and Chapter IV compliant co-incinerators. The Generic Risk Assessments will need to be reviewed and additional site risk assessments would need to be undertaken by the operator. This could also result in some operations becoming installations if they are handling more than 10 tonnes of hazardous waste per day.

Mixing hazardous and non-hazardous waste wood is prohibited unless the permit specifically allows.

Most Civic Amenity sites have wood bins available. However, LAs could be presented with a further challenge of having to ensure sites are provided with different skips for hazardous and non-hazardous waste wood. This is a potential problem for Local Authorities as space may not be available and the management of this could incur costs.

If permits are not varied, we will effectively endorse misclassification and misuse of waste. We know that waste wood may look clean but can still have been treated with 'invisible' heavy metal, halogenated organic or persistent organic treatments. We do not want treated wood to be used in wholly inappropriate end uses (e.g. animal bedding, composting, unabated combustion units).

Recommendation 3: A small working groups comprised on staff from Permitting, EPP and the Waste treatment sector group is convened to consider the permitting implications and make recommendations to WTG/RBB before the end of the time limited Regulatory Decision.

5. Impacts on Local Authority permitting of non-Chapter 4 IED facilities

We are aware through discussion with various Local Authorities permitting department of the increase in application for Part A2 or B permitted facilities for incineration of wood. These specifically exclude “*wood waste which **may** contain halogenated organic compounds or heavy metals*”. The local authority permitting teams occasionally require the applicants for these permits specify the source of the waste wood that they will be using in the facility and when this happens they are unwilling to allow waste wood from transfer stations or similar sources to be used as an input as this waste stream is has the possibility that it include wood that has been treated with organo-chlorines or heavy metals. (See section 2.3). This results in an increase of resource required by NRW in handling enquiries relating to waste wood.

Consequently, we have advised the all Wales EPR Group of our concerns in relation to waste wood. We are continuing to work with LAs through this group and a sub-group will be put together to discuss these issue specifically in the 2018 and NRW will participate in this group.

6. Operational consequences for waste wood:

The result of these issues for waste wood culminate in a variety of operational challenges for NRW. Some of these issues are a direct result of there not being adequate infrastructure and capacity for the treatment, recovery and disposal of waste wood. These challenges include:

- stockpiling at permitted and illegal sites;
- potential fire risk;
- illegal deposits of wood waste wood in particular at farms where farmers are being sold ‘animal bedding’.

In the past 12 months we have issued press release through the NFU advising of these issues, we have undertaken investigation at farms and served notices for the removal of waste wood. We have served notices for non-compliance at permitted facilities and undertaken investigations of illegal sites.

Officer are reminded to continue to report intel relating to waste wood onto Memex.

7. Decisions to be taken by WTG


Recommendation 1: Officers regulating sites handling wood no longer refer to the industry grading system and only refer to wood in the regulatory terms outlined above.

WTG are asked to approve a new method of describing waste wood. NRW will no longer reference the PAS11 classification and grading system. In future we regard wood as:

- Untreated waste wood
- Treated waste wood – non-hazardous
- Treated waste wood – hazardous.

Recommendation 2: WTG is asked to agree the development of an OGN which will provide regulatory clarity to officers on types of wood, flows of wood and options for waste wood.

Recommendation 3: A small working group comprised of staff from Permitting, EPP and the Waste treatment sector group is convened to consider the permitting implications and make recommendations to WTG/RBB before the end of the time limited Regulatory Decision.

From: Waste Regulation Team NE WasteReg.NE@cyfoethnaturiolcymru.gov.uk 
Subject: RE: Request for Pre-Application Advice - Platts Agriculture Limited (PPN- 00443)
Date: 9 July 2020 at 10:39
To: [REDACTED]
Cc: [REDACTED]



Dear Sara,

Please accept our apologies for not responding to your pre-application request sooner; the request for advice only arrived in our team mailbox yesterday morning. We have raised this issue with our Permit Receipt colleagues, and please be assured that we will assist with your pre-application request to avoid any further delays.

Officers from Natural Resources Wales (NRW) have advised during previous correspondence that Platts Agriculture Ltd (formerly RA & CE Platt Ltd) would be required to apply for a Bespoke environmental permit in order to treat and recover waste wood at their premises in Llay Industrial Estate; this is because there are no Standard Rule Set permits that would allow the treatment of the proposed waste types.

The pre-application process is in place for NRW to provide guidance prior to the application of a permit, officers would not be able to confirm the scope of the works as requested before the application has been submitted; this process is carried out by the NRW Permitting Team following the submission of all the relevant application documents which you have detailed in the pre-application request.

Points 1, 3 and 4 of your pre-application request would be determined by the Permitting Team following the submission, however, there are some parts of your request that we can respond to prior to the application being submitted:

- * The relevant Wamitab qualification for the proposed operations is the one stated in the pre-application request: WAMITAB Level 4 Medium Risk Operator Competence for Non-hazardous waste treatment and transfer (601/8528/4) (MROC1)

- * In order to confirm the charges for the application, variation, transfer, subsistence and surrender of the applicable permit we would require the completed OPRA spreadsheet for waste facilities (Point 2 on your request) to be submitted in response to this email.

As expressed in previous correspondence to your client, NRW have concerns over the production of animal bedding and the conditioning agent from treated waste wood products and are seeking further advice from waste policy colleagues. Our position is that treated waste wood cannot be used to produce animal bedding. An Environmental Permit from NRW would allow the treatment and recovery of waste, however please be aware that there are limited recovery options for non-hazardous treated waste wood (i.e. wood that has been treated by veneers, MDF, glues, varnishes, stains etc.). Recovery of waste means that the outputs are suitable for the intended purpose, and as we have made clear, treated non-hazardous waste wood used to produce animal bedding is not suitable as a waste recovery operation.

It is permissible under a waste treatment and recovery Environmental Permit to produce animal bedding from untreated non-hazardous waste wood and virgin timber, by which we mean non-hazardous waste wood from the arboriculture sector, packaging waste, kiln-dried scrap pallets (that have not been treated), packing cases, cable drums and off-cuts from the manufacture of untreated wood products. As part of the application determination process, officers from the Waste Regulation and Permitting Teams may require further clarification regarding your intended process from you or your client.

Should you choose to apply for the relevant permit the following links and guidance should help you further with the process

Applying for a Bespoke Permit

<https://naturalresources.wales/permits-and-permissions/waste-permitting/apply-for-a-waste-permit/apply-for-a-bespoke-permit-for-a-waste-operation/?lang=en>

How to comply with your permit

<https://cdn.naturalresources.wales/media/2110/how-to-comply-with-your-environmental-permit.pdf?mode=pad&rnd=131467604540000000>

Our charges (2020/21)

<https://naturalresources.wales/about-us/what-we-do/how-we-regulate-you/our-charges/?lang=en>

EMS guidance

<https://naturalresources.wales/permits-and-permissions/environmental-permits/environment-management-system/?lang=en>

Additional guidance

<https://naturalresources.wales/permits-and-permissions/environmental-permits/guidance-to-help-you-comply-with-your-environmental-permit/?lang=en>

WAMITAB

<https://wamitab.org.uk/>

NRW can provide up to 2 hours of free basic advice for waste operations, installations, water discharge activities and groundwater activities to help you understand what type of permit is required, how to apply (including for surrender, variation & transfer), clarify guidance, sign post best practice and industry standards and identify environmental sensitivities in the area. The work carried out by officers so far has reached this 2-hour threshold for free advice; if you require more detailed pre-application advice you can use our pre-application advice service which is charged for at our standard hourly rate of £125 plus VAT. Details of NRW pre-application advice service can be found at the link below:

<https://naturalresources.wales/permits-and-permissions/environmental-permits/pre-application-advice-for-environmental-permits/?lang=en>

We are unable to confirm the application fee as outlined above. Please send a copy of your completed OPRA spreadsheet so we can confirm the fee with you prior to submitting the application.

Regards

Steven White

Uwch-Swyddog Rheoleiddio Gwastraff/ Senior Waste Regulation Officer

* Cyfoeth Naturiol Cymru, Ffordd Caer, Bwcle. Sir Fflint. CH7 3AJ /
Natural Resources Wales, Chester Road, Buckley. Flintshire. CH7 3AJ.

[www.cyfoethnaturiol.cymru](http://www.cyfoethnaturiol.cymru/?lang=cy) <<http://www.cyfoethnaturiol.cymru/?lang=cy>>
/ www.naturalresources.wales
<<https://www.naturalresources.wales/?lang=en>>

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amgylchedd ac adnoddau naturiol yn gynaliadwy.

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Croesewir gohebiaeth yn Gymraeg a byddwn yn ymateb yn Gymraeg, heb i
hynny arwain at oedi

Correspondence in Welsh is welcomed, and we will respond in Welsh
without it leading to a delay





Department
for Environment
Food & Rural Affairs

Environmental permitting: Core guidance

For the Environmental Permitting (England and Wales) Regulations 2016 (SI 2016 No 1154)

Last revised: March 2020



Llywodraeth Cymru
Welsh Government



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This publication is available at <https://www.gov.uk/topic/environmental-management/environmental-permits> and <https://naturalresources.wales/permits-and-permissions/environmental-permits/?lang=en>

Any enquiries regarding this publication should be sent to us at:

Defra, Environmental Permitting Regulations, Seacole Building, 2 Marsham Street, London SW1P 4DF

www.gov.uk/defra

Revision of the Guidance

This publication is updated from time to time with new or amended guidance. The table below is an index to these changes. Date of amendment	Chapter/ paragraph where amendment can be found	Nature of amendment What paragraphs have been inserted, deleted, or amended What subject matter is covered by the amendment
24/02/09	4.13 Footnotes	Additional guidance Updated hyperlinks
02/11/09	Throughout	General amendments and updates issued as version 2.0
05/03/10	Throughout	Updated to reflect EPR 2010
12/03/10	Throughout	Typographical amendments
Sep 2011	Changes to reflect the EO-RSR Exemptions.	
March 2012	Changes to reflect EPR amending Regulations 2011 and 2012 and other amendments.	
March 2013	Changes to reflect: EPR amending Regulations 2013 (transposition of the Industrial Emissions Directive); the establishment of Natural Resources Wales; and a commitment by the Environment Agency to determine permit applications within 13 weeks, subject to some exceptions.	
March 2020	Guidance moved to new template; update to Chapter 9; and minor updates to legislative references in rest of document. Deletion of Annex 2.	

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1. Summary

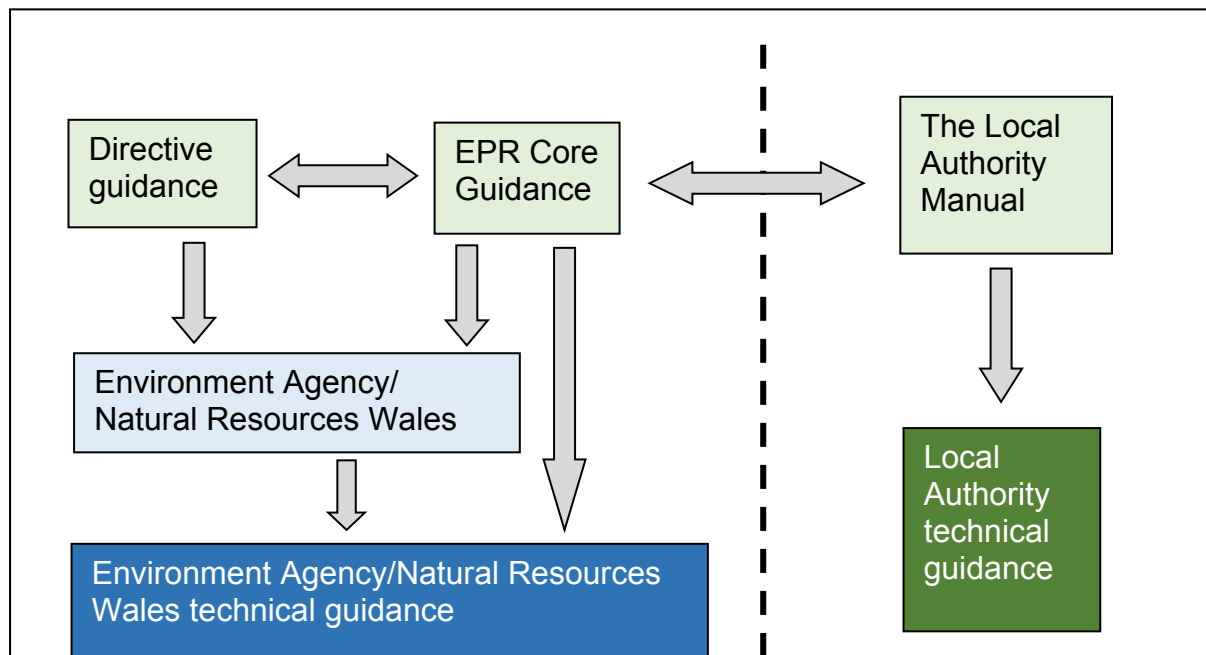
About this Core Guidance

- 1.1 This Core Guidance aims to provide comprehensive help for those operating, regulating or interested in “regulated facilities”¹ that are covered by the Environmental Permitting (England and Wales) Regulations 2016 SI 2016/1154² (“the EPR”). It describes the main provisions of the EPR and sets out the views of the Secretaries of State for Environment Food and Rural Affairs (Defra), for Business, Energy and Industrial Strategy (BEIS), and the Welsh Ministers on how the Regulations should be applied and how particular terms should be interpreted in England and Wales. It also explains where to go for more help.
- 1.2 Unless stated explicitly otherwise, references in this Core Guidance to individual numbered regulations and Schedules are to the relevant parts of the EPR.
- 1.3 This guidance is available in Adobe Acrobat format, which enables searches for key terms for ease of navigation. The contents page of this document should also help the reader to find guidance on a wide range of issues.
- 1.4 This Core Guidance is complemented by a range of other government guidance documents relating to specific aspects of the EPR, which is available on gov.uk.
- 1.5 This Core Guidance is underpinned by further regulatory and technical guidance explaining aspects of the EPR regime in more detail, as illustrated in Figure 1.

¹ The term “regulated facilities” is explained in section 3.

² See: <http://www.legislation.gov.uk/uksi/2016/1154/contents/made>. Note that these Regulations have been amended and a current version should be consulted.

Figure 1: Illustration of guidance relationships



- 1.6 The Environment Agency and Natural Resources Wales should continue to develop and maintain their regulatory and technical guidance. In so doing they should continue to work closely with Defra, BEIS, the Welsh Government and others.
- 1.7 The Environment Agency and Natural Resources Wales should make their guidance widely available, so that EPR is implemented openly and transparently. The Environment Agency and Natural Resources Wales publish their EPR guidance on their respective websites³.
- 1.8 For local authority-regulated facilities, the General Guidance Manual on Policy and Procedure for Part A(2) and B Installations ('the Manual') is on gov.uk⁴.
- 1.9 To ensure this Core Guidance is current and up-to-date, government updates it from time to time. The "Revision of Guidance" section at the front of this document contains a list of revisions.
- 1.10 This Core Guidance is compliant with the Regulators' Code⁵.

³ For England, see: <https://www.gov.uk/topic/environmental-management/environmental-permits>. For Wales see: <https://naturalresources.wales/permits-and-permissions/environmental-permits/?lang=en>.

⁴ <https://www.gov.uk/government/publications/local-authority-pollution-control-general-guidance-manual>.

⁵ <https://www.gov.uk/government/publications/regulators-code>.

2. Introduction

This chapter explains Environmental Permitting and describes its framework of legislation and guidance.

What is Environmental Permitting?

2.1 Some facilities could harm the environment or human health⁶ unless they are regulated. EPR requires operators of “regulated facilities” to obtain a permit or to register some activities, which would otherwise require permits, as “exempt facilities”. In this way EPR provides for ongoing supervision by regulators of activities which could harm the environment. The aim of the regime is to:

- protect the environment so that statutory and government policy environmental targets and outcomes are achieved;
- deliver permitting, and compliance with permits and certain environmental targets, effectively and efficiently, in a way that provides increased clarity and minimises the administrative burden on both the regulator and operators;
- encourage regulators to promote best practice in the operation of facilities; and
- continue to implement European legislation fully.

The scope of EPR

2.2 EPR covers facilities previously regulated under a range of other, separate legislation. It has also been used to transpose many EU Directives into domestic law. It brings these facilities together under a single, streamlined environmental permitting and compliance framework. This is easier, quicker and cheaper for businesses to understand and comply with, and for regulators to apply and ensure compliance with.

2.3 The EPR regime extends to England and Wales only⁷. It also covers the adjacent sea as far as the seaward boundary of the territorial sea.

⁶ The term ‘protect the environment’ should be read to include the environment and human health, wherever it occurs in this Core Guidance.

⁷ Scotland and Northern Ireland have their own regulatory frameworks.

The legal framework

2.4 The EPR regime is set out in the EPR and described in this accompanying Core Guidance (and other, related government guidance documents). This Core Guidance explains the concepts used in the EPR and gives guidance as to what is covered by the regime and how it will work in practice. This Core Guidance explains only the main provisions of the EPR. The EPR set out the following:

- the facilities that need environmental permits or need to be registered as exempt;
- the process for registering exempt facilities;
- how to apply for and determine permit applications;
- requirements that environmental permits contain conditions to protect the environment as required by Directives and, where applicable, national policy;
- how environmental permits can be changed and ultimately be surrendered;
- a simplified permitting system called standard rules;
- compliance obligations backed up by enforcement powers and offences;
- provisions for public participation in the permitting process;
- the powers and functions of regulators, the Secretary of State and the Welsh Ministers; and
- provisions for appeals against permitting decisions.

2.5 The principal offences under the EPR are:

- operating a regulated facility without a permit;
- causing or knowingly permitting a water discharge activity or groundwater activity without a permit; and
- failing to comply with a permit condition, flood risk activity emergency works notice, flood risk remediation notice or an enforcement-related notice.

- 2.6 Subject to legal requirements, the Secretary of State and the Welsh Ministers expect regulators to apply the EPR in proportion to the environmental risk⁸ presented by the operation of the regulated facility.
- 2.7 The nature and extent of the regulatory effort should be appropriate and proportionate to the risk posed by the operation of the regulated facilities, the impact of that operation and the operator's performance in mitigating the risks and impacts. The regulator's effort should be concentrated on achieving the desired environmental outcomes. This approach should make the most effective use of the regulator's resources.
- 2.8 Regulators should exercise their functions in an open and transparent manner.

How requirements from national policy and European Union Environmental Directives are delivered

- 2.9 European Union Directives (Directives) and international agreements contain a variety of requirements, some of which can be delivered through a permitting and compliance system, and some of which are delivered in other ways. The majority of environmental quality and specific permitting standards and other related requirements for environmental and human health protection come from Directives. The EPR ensure that those Directives and national policy requirements, and outcomes that can be delivered through a permitting and compliance system are delivered by the EPR regime.
- 2.10 The EPR place duties on regulators to exercise their permit-related functions to deliver the obligations and outcomes required by the relevant Directives and, in some cases, national policy. In practice, this means that the regulator will ensure, where a permit is granted, that permit conditions achieve the objectives and intended outcomes of any of the Directives or national policy which apply. The EPR also give regulators powers in relation to their permit-related functions. Government policy in relation to these powers is contained in the guidance series described at paragraph 2.13.
- 2.11 The Schedules to the EPR generally identify particular requirements (usually Article by Article, in the case of Directives) which must be delivered through the permitting system. In some cases, requirements to be delivered through

⁸ The term risk should be read to include hazard, wherever it occurs in the guidance.

the permitting system are located in other legislation⁹. Each Directive or policy area covered by the EPR regime has a specific Schedule:

Policy area	EPR Schedule
Chapter II Industrial Emissions Directive (Integrated Pollution Prevention and Control)	7 – Part A installations
Part B installations and Part B mobile plant	8 – Part B installations and Part B mobile plant
Waste Framework Directive	9 – Waste operations and materials facilities
Landfill Directive	10 - Landfill
End-of-life Vehicles Directive	11 – Waste motor vehicles
Waste Electrical and Electronic Equipment Directive	12 – Waste electrical and electronic equipment
Chapter IV Industrial Emissions Directive	13 – Waste incineration
Chapter V Industrial Emissions Directive	14 – Solvent emission activities
Chapter III Industrial Emissions Directive	15 – Large combustion plants
Asbestos Directive	16 – Asbestos
Chapter VI Industrial Emissions Directive	17 – Titanium dioxide
Petrol Vapour Recovery Directive	18 – Petrol vapour recovery

⁹ For example, the Water Environment (Water Framework Directive) Regulations 2017 SI No. 407. For more information on this see the Guidance on Water Discharge Activities at <https://www.gov.uk/government/publications/environmental-permitting-guidance-water-discharge-activities>.

Policy area	EPR Schedule
Batteries Directive	19 – Waste batteries and accumulators
Mining Waste Directive	20 – Mining waste operations
Water discharge activities	21 – Water discharge activities
Groundwater activities	22 – Groundwater activities
Basic Safety Standards Directive	23 – Radioactive substances activities
Energy Efficiency Directive	24 – Efficiency in heating and cooling energy
Flood risk activities and excluded flood risk activities	25 – Flood risk activities and excluded flood risk activities
Medium Combustion Plant Directive	25A – Medium combustion plants
Specified generators	25B – Specified generators

2.12 Where a regulated facility falls under more than one Schedule, permit conditions must ensure that each set of Schedule requirements is met. For example, in England, most¹⁰ waste incinerators (in Wales all incinerators) must meet the requirements of Chapters II (industrial pollution prevention and control) and IV (waste incineration) of the Industrial Emissions Directive, and of the Waste Framework Directive. Schedules 7, 13 and 21 contain these provisions.

¹⁰ The exceptions are those few with a capacity below the threshold for Chapter II of the Industrial Emissions Directive and so not subject to Schedule 7. They still need to comply with the requirements of Schedules 13 and 21.

Guidance

- 2.13 More detailed guidance on the requirements of most Directives or policy areas, including the text of each Schedule and, where applicable, Directive, can be found in the documents listed in the EPR list of guidance¹¹.
- 2.14 The EPR regime does not currently transpose all the Directives relevant to regulated facilities. Annex 1 outlines the connections with other legislation.
- 2.15 References in this Core Guidance to exemptions do not apply in relation to radioactive substances activities, unless specifically indicated.

¹¹ See: <https://www.gov.uk/topic/environmental-management/environmental-permits>.

3. What facilities require an environmental permit?

This chapter describes how the EPR identify those activities that require an environmental permit. It sets out the circumstances in which a single permit can cover more than one regulated facility.

- 3.1 The EPR specify which activities require an environmental permit. These are collectively described as “regulated facilities”. There are currently twelve different kinds, or “classes” of regulated facility (regulation 8): see paragraph 3.6 below.
- 3.2 Some activities do not require a permit because they are either “exempt facilities” or “excluded” activities.
- 3.3 Some activities that would otherwise be regulated facilities can be exempt from the requirement to obtain a permit. These currently include exempt waste operations, exempt water discharge activities, exempt groundwater activities and exempt flood risk activities (see regulation 5). These are collectively described as “exempt facilities”. An exempt facility is not a regulated facility.
- 3.4 Certain radioactive substances activities (see Schedule 23) do not require a permit, although they are not defined as “exempt facilities”.
- 3.5 Exemptions are usually provided for where general rules are laid down for each type of exempt activity. Their operation must in many cases also be registered with the relevant registration authority¹².
- 3.6 Certain waste operations regulated under other statutory regimes, and flood risk activities that satisfy certain conditions are completely excluded from the EPR. These are referred to (respectively) as “excluded waste operations” and “excluded flood risk activities” (see Schedule 25). They are not regulated facilities or exempt facilities: the EPR do not apply to them at all.
- 3.7 The twelve classes of regulated facility are:

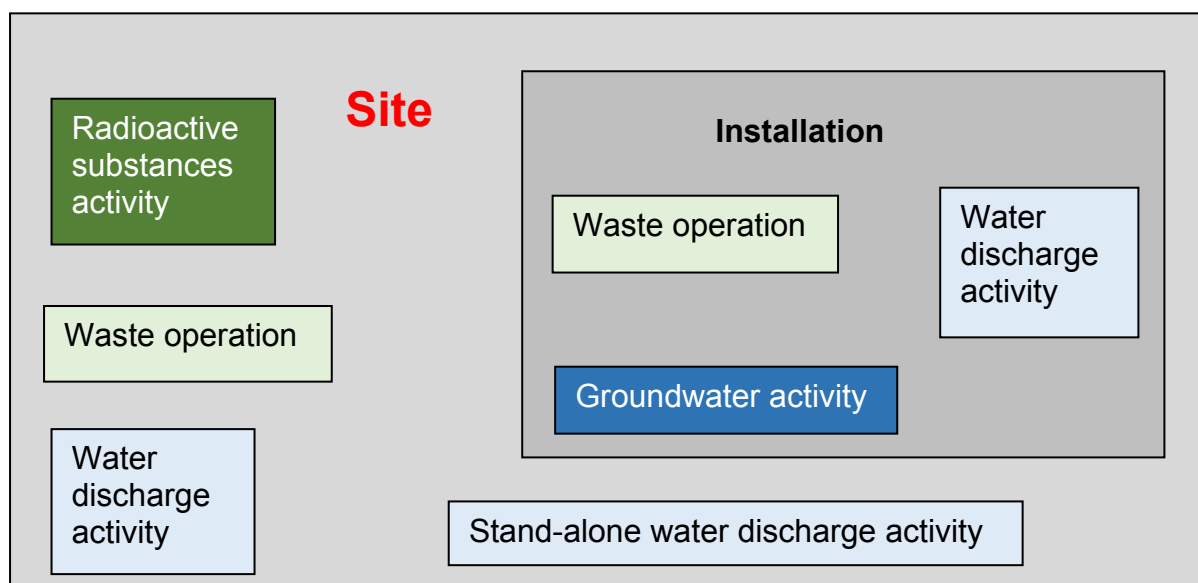
¹² Not all exempt activities need to be registered: for example, non-Waste Framework Directive exemptions (<https://www.gov.uk/government/collections/waste-exemptions-storing-waste>); some small sewage discharges in England (see paragraph 3 of Part 2, and paragraph 4 of Part 3 of Schedule 3); and radioactive substances activities exemptions.

- an installation (where activities listed in Schedule 1, and any directly associated activities are carried on – see [Installations](#)) (regulation 8(1)(a));
- mobile plant (used to carry on either one of the Schedule 1 activities or a waste operation – see [Mobile plant](#)) (regulation 8(1)(b));
- a waste operation (see [Waste operations](#)) (regulation 8(1)(c));
- a mining waste operation (see [Mining waste operations](#)) (regulation 8(1)(d));
- a radioactive substances activity (see [Radioactive substances activities](#)) (regulation 8(1)(e));
- a water discharge activity (see [Water discharge activities](#)) (regulation 8(1)(f));
- a groundwater activity (see [Groundwater activities](#)) (regulation 8(1)(g));
- a small waste incineration plant (see [Small waste incineration plant](#)) (regulation 8(1)(h));
- a solvent emission activity (see [Solvent emission activities](#)) (regulation 8(1)(i));
- a flood risk activity (see [Flood risk activities](#)) (regulation 8(1)(j));
- a medium combustion plant (see [Medium Combustion Plant](#)) (regulation 8(1)(k)); and
- a specified generator (see [Specified generators](#)) (regulation 8(1)(l)).

3.8 Some regulated facilities may be “carried on as part of the operation of a regulated facility of another class”¹³. Figure 2 illustrates a site containing a number of regulated facilities of different classes, some are shown as carried on as part of the operation of another, whilst others are “stand-alone”.

¹³ These are: waste operations, mining waste operations, water discharge activities, groundwater activities, small waste incineration plant, solvent emission activities, flood risk activities, medium combustion plant and specified generators (regulation 8(4)).

Figure 2: Example of regulated facilities carried on at a site



- 3.9 Some provisions of the EPR apply to these classes of regulated facility differently according to whether they are carried on as part of the operation of another regulated facility. For example, any part of a permit which authorises a stand-alone water discharge activity may be surrendered by notification, whereas any part of a permit which authorises a water discharge activity that is carried on as part of the operation of another regulated facility (such as an installation), can be surrendered only by application. Annex 2 illustrates the principal procedural differences applying to different classes and descriptions of regulated facility.
- 3.10 More detailed descriptions of the different classes of regulated facility are given in paragraphs 3.12 to 3.45 below.
- 3.11 There may be more than one regulated facility on the same site. This will be the case where a regulated facility is carried on as part of the operation of another regulated facility; but it may also occur in other circumstances. In such cases there are arrangements in the EPR to allow all such facilities to be regulated by the same regulator (see [A single regulator for each site](#)) and to allow, in many cases, for a single permit (see [A single permit](#)).

The different classes of regulated facility and their related exempt facilities

Installations

- 3.12 Part 2 of Schedule 1 provides a list of activities. Certain exclusions and other rules for interpretation are contained in Part 1 of Schedule 1.

- 3.13 An installation consists of any “stationary technical unit” where one or more activities listed in Part 2 of Schedule 1 are carried on; and any “directly associated activities” (defined in paragraph 1 of Part 1 of Schedule 1).
- 3.14 Further guidance on the meaning of “installation”, “stationary technical unit” and “directly associated activity” is provided, with detailed examples, in the Environment Agency’s guidance on Part A Installations¹⁴.

Waste operations

- 3.15 Regulation 2 defines “waste operation” by reference to the recovery and disposal operations in the Waste Framework Directive¹⁵. Any recovery or disposal of waste is a waste operation. Some larger waste operations are also installations in their own right (see [Installations](#) above). Further guidance on the meaning of waste operation is provided in the Waste Framework Directive guidance¹⁶. Some waste operations not carried on at an installation are excluded from the EPR regime, because there is already appropriate environmental regulation under other regimes (see paragraph 3.5 above).

Installations and waste operations – exempt waste operations

- 3.16 Waste operations not carried on at an installation are capable of being exempt waste operations (see regulation 5). Exempt waste operations do not require an environmental permit (see paragraphs 3.2-3.4 above) but need to comply with the general rules laid down for each type of exempt activity, and in most cases must be registered with the relevant registration authority.
- 3.17 No waste operation carried on at an installation, for example as a directly associated activity, is capable of being an exempt waste operation.

Mobile plant

- 3.18 Mobile plant is defined in regulation 2(1) as Part B mobile plant, waste mobile plant or mobile medium combustion plant. The EPR require that, to be mobile, plant must be designed to move or be moved. This movement can be by road, rail or water (for example by canal). The Environment Agency has published guidance on relevant factors to consider in assessing whether plant it

¹⁴ <https://www.gov.uk/government/publications/rgn-2-understanding-the-meaning-of-regulated-facility>.

¹⁵ Directive 2008/98/EC on waste.

¹⁶ <https://www.gov.uk/government/publications/environmental-permitting-guidance-the-waste-framework-directive>.

regulates is mobile, such as its environmental impact, degree of mobility and the intention of the operator¹⁷.

- 3.19 Plant that carries out a Part A activity will be regarded as stationary. A stationary technical unit forms the basis of an installation and must be, by definition, stationary.
- 3.20 European Commission guidance explains the definition of installation¹⁸ and considers the meaning of “stationary”. The Commission guidance considers the question of whether plant that is designed to be moved periodically but which in practice operates from the same location for some time, should be considered to be “stationary”. Suggested tests include: the length of time the plant is expected to or does in fact, remain stationary; the nature of the activities and their environmental impact; and the degree of physical installation involved in moving and establishing the plant.
- 3.21 The Commission guidance also concludes that whilst the term “stationary” means that the installation as a whole should be stationary, it may still include plant or equipment which is mobile. For example, plant that is mobile, and which also meets the criteria for being a directly associated activity, will be regarded as part of the installation and will not be treated as mobile plant within the meaning of the EPR.

Mobile plant – Waste mobile plant

- 3.22 Waste mobile plant is defined in regulation 2(1) as: mobile plant which is used to carry on a waste operation; and which is designed to move or be moved whether on roads or on other land. Part B mobile plant and installations are excluded from this definition.
- 3.23 Waste operations are described above. Any waste operation, other than those which are part of an installation, can theoretically be carried on by mobile plant.

Mobile plant – Part B mobile plant

- 3.24 Guidance on Part B mobile plant can be found in the General Guidance Manual on Policy and Procedures for A2 and B Installations¹⁹.

¹⁷ <https://www.gov.uk/government/publications/rgn-2-understanding-the-meaning-of-regulated-facility>.

¹⁸ See: https://ec.europa.eu/environment/archives/air/stationary/ippc/pdf/installation_guidance.pdf.

¹⁹ See: <http://archive.defra.gov.uk/environment/quality/pollution/ppc/localauth/pubs/guidance/manuals.htm#ep>

Mobile plant – mobile medium combustion plant

- 3.25 Mobile medium combustion plant is any medium combustion plant designed to move or be moved, whether on roads or other land. Part B mobile plant is excluded from the definition.

Mining waste operations

- 3.26 A mining waste operation is the management of extractive waste, whether involving a mining waste facility or not, but does not include activities in Article 2(2)(c) of the Mining Waste Directive²⁰. Further guidance on the meaning of mining waste operation is provided in the Mining Waste Directive guidance²¹.

Radioactive substances activities

- 3.27 A radioactive substances activity is one involving the keeping and use of radioactive material (including mobile radioactive apparatus) or the accumulation and disposal of radioactive waste, and which is not excluded or exempted from regulation as a radioactive substances activity. Further guidance is available in the Guidance on Radioactive Substances Regulation²² (see Chapter 3) and the Guidance on the Scope of and Exemptions from the Radioactive Substances Legislation in the UK²³.
- 3.28 For nuclear site licensees, the keeping and use of radioactive material and accumulation of radioactive waste are regulated by the Office for Nuclear Regulation (ONR).

Water discharge activities

- 3.29 A water discharge activity is, in summary, the:
- discharge or entry to certain waters of any poisonous, noxious or polluting matter, waste matter, trade effluent or sewage effluent;
 - discharge from land through a pipe into the sea of any trade effluent or sewage effluent;
 - removal of certain deposits from the bed of inland freshwaters;

²⁰ Directive 2006/21/EC on the management of waste from extractive industries.

²¹ See: <https://www.gov.uk/government/publications/environmental-permitting-guidance-the-mining-waste-directive>.

²² See: <https://www.gov.uk/government/publications/radioactive-substance-regulations-rsr-guidance>.

²³ See: <https://www.gov.uk/government/publications/guidance-on-the-scope-of-and-exemptions-from-the-radioactive-substances-legislation-in-the-uk>

- cutting or uprooting of a substantial amount of vegetation in inland freshwaters and failure to take reasonable steps to remove the vegetation from the waters; and
 - operation of a highway drain or a discharge of trade or sewage effluent into lakes or ponds which are not inland freshwaters where a notice in relation to the activity has taken effect.
- 3.30 A water discharge activity does not include a discharge of trade effluent or sewage effluent from a vessel, certain types of discharge unless a notice has been served, or certain discharges made under prescribed statutory provisions.
- 3.31 Certain types of water discharge activity are capable of being exempt water discharge activities (see the section on [Exempt facilities](#)).
- 3.32 Further guidance is available in the Guidance on Water Discharge Activities²⁴ (see Chapter 3).
- 3.33 Sometimes a water discharge activity forms part of the operation of a regulated facility of another class (such as an installation). When it does not, it is referred to in this guidance as a “stand-alone water discharge activity”. Some provisions of the EPR (identified in this Core Guidance) apply only to stand-alone water discharge activities.

Groundwater activities

- 3.34 A groundwater activity is, in summary, any of the following:
- the discharge of a pollutant that results in a direct input to groundwater;
 - the discharge of a pollutant in circumstances that might lead to an indirect input of that pollutant to groundwater;
 - any other discharge that might lead to a direct or indirect input of a pollutant to groundwater;
 - an activity in respect of which a notice under paragraph 10 of Schedule 22 has taken effect; or
 - an activity that might lead to a discharge mentioned above where that activity is carried on as part of the operation of a regulated facility of another class.

²⁴ <https://www.gov.uk/government/publications/environmental-permitting-guidance-water-discharge-activities>

- 3.35 The regulator may determine that a discharge (or an activity that might lead to a discharge) is not a groundwater activity if the input of the pollutant: (a) is the consequence of an accident or unforeseen natural event; (b) is of a quantity so small as to pose no risk to groundwater; or (c) cannot, for technical reasons and subject to conditions, be prevented or limited.
- 3.36 Certain types of groundwater activity are capable of being exempt groundwater activities (see paragraphs 3.2-3.4 above)
- 3.37 Further guidance is available in the Guidance on Groundwater Activities²⁵ (see Chapter 2).
- 3.38 Sometimes a groundwater activity forms part of the operation of a regulated facility of another class (such as an installation). When it does not, it is referred to in this guidance as a “stand-alone groundwater activity”. Some provisions of the EPR (identified in this Guidance) apply only to stand-alone groundwater activities.

Small waste incineration plant

- 3.39 A small waste incineration plant is one with a capacity below the relevant threshold in Section 5.1 of Part 2 of Schedule 1. As such, in England it will be subject only to the requirements of Schedule 13, unless it is exempt from those requirements because it burns only the wastes which are specified in Section 5.1 Part B(a). In Wales, small waste incinerators are, like their larger counterparts, subject to Chapters II and IV of the Industrial Emissions Directive and of the Waste Framework Directive (Schedules 8, 13 and 21).

Solvent emission activity

- 3.40 A solvent emission activity is one to which Chapter V of the Industrial Emissions Directive applies and is subject to Schedule 14. In Wales, solvent emission activities are subject to Schedule 8.

Flood risk activity

- 3.41 Activities that constitute a flood risk activity are set out in paragraph 3(1) of Part 1 of Schedule 25. These are activities which are liable to increase the risk of flooding from a main river. Examples include:
- erecting any structure (whether temporary or permanent) in, over or under a main river; and

²⁵ <https://www.gov.uk/government/publications/environmental-permitting-guidance-groundwater-activities>

- any activity which is likely to divert the direction of the flow of water into or out of a main river or alter the level of water in a main river.
- 3.42 Exceptions apply for certain activities which would otherwise constitute a flood risk activity, but which are carried out in the exercise of statutory functions. These are set out in paragraph 3(2) of Part 1 of Schedule 25.
- 3.43 Further guidance is available²⁶.

Medium combustion plants

- 3.44 A medium combustion plant is one that falls within the definition in paragraph 2(2) of Part 1 of Schedule 25A²⁷. Medium combustion plants are subject to the requirements of the Medium Combustion Plant Directive²⁸ and may also be subject to relevant requirements of other Schedules.

Specified generator

- 3.45 A specified generator is one that falls within the definition in paragraph 2(1) of Schedule 25B²⁹. A specified generator may also be a medium combustion plant and subject to the requirements of other Schedules.

A single permit

- 3.46 An environmental permit can cover more than one regulated facility (see regulation 17), but only in certain circumstances.

When can a single permit be granted?

- 3.47 Generally (see regulation 17), a single environmental permit can be granted for more than one regulated facility only where:
- the regulator is the same for each facility;
 - the operator is the same for each facility; and

²⁶ For England see: <https://www.gov.uk/guidance/flood-risk-activities-environmental-permits>; for Wales see: <https://naturalresources.wales/permits-and-permissions/flood-risk-activities/?lang=en>.

²⁷ See <https://www.gov.uk/government/collections/medium-combustion-plant-and-specified-generator-regulations> for further information.

²⁸ Directive (EU) 2015/2193 on the limitation of emissions of certain pollutants into the air from medium combustion plants.

²⁹ See <https://www.gov.uk/government/collections/medium-combustion-plant-and-specified-generator-regulations> for further information.

- all the facilities are on the same site (the exceptions to this are set out below).
- 3.48 Where the regulator and operator are the same, a single environmental permit can be granted to an operator for more than one mobile plant. Mobile plant do not all have to be operating on the same site in order to be included in a single permit.
- 3.49 Where the regulator and operator are the same, a single environmental permit can be granted to an operator for more than one regulated facility to which standard rules apply (a “standard facility”, see chapter 8 on [Standard Rules Permits](#)), or for more than one flood risk activity. Standard facilities and flood risk activities do not have to be on the same site in order to be included in a single permit.
- 3.50 A permit may authorise the following activities on more than one site:
- the keeping or use of mobile radioactive apparatus; or
 - intrusive investigation work to determine the suitability of the premises for underground disposal of radioactive waste.
- 3.51 With the exceptions outlined above, regulated facilities must be operated on the same site in order to be covered by the same permit. The regulator should consider the following factors in determining whether the facilities are operated on the same site:
- Proximity - there should however be no simple “cut-off” distance, since some industrial complexes cover very large areas, but still can be regarded as one site for permitting purposes.
 - Coherence of a site - some regulated facilities will be operated within a single fenced area or may share security or emergency systems.
 - Management systems - the extent to which the regulated facilities share a common management system is a relevant consideration.
- 3.52 It is expected that a regulator will adopt a common-sense approach to determining when facilities should be regulated under one permit. This consideration should be based on achieving protection of the environment in the most efficient regulatory manner.

When is it not possible to have a single permit?

- 3.53 A single environmental permit cannot cover regulated facilities with different regulators (but see also [A single regulator for each site](#)). A separate permit is required covering the facilities for which each regulator is responsible.

- 3.54 A single permit cannot cover mobile plant combined with any other class of regulated facility. Mobile plants are not associated with a particular geographical site. The differences in the requirements for mobile plant mean that a single permit cannot cover mobile plant and other classes of regulated facility.

4. The regulator

This chapter identifies the regulator for different types of regulated facility. It also describes how the regime enables regulation under one regulator.

The regulator

- 4.1 The regulator for each class of regulated facility is identified in regulation 32 (subject to any direction under regulation 33; see paragraph 4.8 below).
- 4.2 The Environment Agency (in England) and Natural Resources Wales (in Wales) regulate:
- Part A(1) installations;
 - waste mobile plant;
 - mobile medium combustion plant;
 - waste operations, including those carried on at a Part B installation or by Part B mobile plant (unless the waste operation is a Part B activity);
 - mining waste operations, including any carried on at a Part B installation;
 - radioactive substances activities;
 - water discharge activities, including those carried on at a Part B installation;
 - groundwater activities, including those carried on at a Part B installation;
 - flood risk activities;
 - medium combustion plant, including those carried out at a Part A(2) or B installation or which are also small waste incineration plant; and
 - specified generators, including those carried out at a Part A(2) or Part B installation or which are small waste incineration plant.
- 4.3 The relevant local authority³⁰ regulates:
- Part A(2) installations including any waste operations, water discharge activities or groundwater activities carried on as part of the installation or mobile plant (except as set out above);
 - Part B installations and Part B mobile plant (except as set out above);

³⁰ Regulation 6 defines “local authority”.

- small waste incineration plants (except as set out above); and
 - solvent emission activities.
- 4.4 Defra and the Welsh Government jointly provide guidance on local authority air pollution control³¹. Guidance on Part A(1) and Part A(2) installations can be found in the Guidance on Part A installations³².

Working together

- 4.5 Where both a local authority and the Environment Agency or Natural Resources Wales exercise functions under the EPR in relation to regulated facilities at one site, they should work together in the permitting process. There should be adequate consultation with the local authority where the Environment Agency or Natural Resources Wales is the regulator, and vice versa.
- 4.6 Chapter 10 on [Consultation and public participation](#) sets out the requirements for consulting on applications.
- 4.7 The Environment Agency and Natural Resources Wales can set the minimum standard for releases to water for a permit regulated by a local authority (see regulation 59).

A single regulator for each site

- 4.8 The Secretary of State or the Welsh Ministers can issue a direction changing the regulator (see regulation 33). This direction can be for:
- a specific regulated facility; or
 - a specified class of regulated facility
- 4.9 A direction can direct a local authority to exercise the Environment Agency's or Natural Resources Wales's functions only in relation to an installation (but not in relation to a mining waste operation carried on at an installation) or mobile plant.
- 4.10 Either the operator or the regulators may make a written request to the Secretary of State or Welsh Ministers for a direction.

³¹ <https://www.gov.uk/government/publications/local-authority-pollution-control-general-guidance-manual>

³² <https://www.gov.uk/government/publications/environmental-permitting-regulations-guidance-on-part-a-installations>

- 4.11 Where the Secretary of State or the Welsh Ministers makes (or withdraws) a direction, this must be published on the relevant website. The local authority and the Environment Agency or Natural Resources Wales must be notified, as well as any other person who will be affected by the direction.
- 4.12 This power should be used consistently and in a way that helps simpler regulation and any other relevant environmental and regulatory consideration. These directions are therefore likely to be used mainly where there are regulated facilities on the same site but with more than one regulator. This is most likely to arise where there is a waste operation being carried on in part of a Part A(2) or Part B installation. It is not possible to have a single permit with more than one regulator (see [A single permit](#)) so a direction to change regulators can, where appropriate, allow a single permit for the site.
- 4.13 The aim is to allocate regulatory responsibility to the regulator of the major activity on the site. The Secretary of State or the Welsh Ministers will consider each case on its merits having regard to the views of the parties, but will be guided by the following criteria:
- where both regulators and the operator agree that a direction is appropriate, the Secretary of State or Welsh Ministers will make it, unless there is any regulatory or environmental protection reason not to.
 - where the three parties do not agree:
 - if the disagreement is between the regulators, the Secretary of State or Welsh Ministers will need to be persuaded that there are sound regulatory or environmental protection reasons why regulation by a single regulator would be inappropriate
 - if the operator disagrees, the Secretary of State or Welsh Ministers will need to be persuaded that there are sound regulatory or environmental protection reasons why regulation by a single regulator would be appropriate.
- 4.14 It is therefore helpful for applicants for directions to state clearly whether all parties are agreed and, if not, between which there is disagreement.
- 4.15 The underlying principle will be to favour allocating regulatory responsibility based on which is the major activity on site, and which is the regulator for that major activity.
- 4.16 This principle may, however, be influenced by the following:
- whether the “minor” activity has disproportionate potential environmental impacts

- whether the “minor” activity gives rise to particular technical or other complexities
 - consistency with the way other similar sites in the sector are regulated
 - consistency with the way similar sites run by the same operator are regulated
 - the views of the parties on the above criteria
- 4.17 Where a single regulator has been determined, this may result in a single site permit being drawn up (see the section in chapter 3 on [A single permit](#)).

5. Environmental permit applications

This chapter sets out who is required to obtain an environmental permit.

The operator

- 5.1 Only the person who has control over the operation of a regulated facility may obtain or hold an environmental permit. This person is the “operator” (see regulation 7).

Box 1 – Definition of operator

“Operator” is defined in regulation 7 as the person who:

- has control over the operation of a regulated facility;
- will have control over a regulated facility, which has not yet been put into operation, when it is in operation; or
- holds the permit for a regulated facility that has ceased to operate.

Legal obligations may be imposed on an operator during the pre- and post-operational phases.

The operator must demonstrably have the authority and ability to ensure the environmental permit is complied with.

- 5.2 An operator will have to obtain one or more environmental permits for each regulated facility it operates.
- 5.3 For example, to understand the relationship between “operator”, “regulated facility” and “installation”:
- a “regulated facility” is a facility which falls within one of the classes listed in regulation 8
 - one of those classes is an “installation”
 - an “installation” can include one or more other regulated facilities (such as a waste operation or water discharge activity) but will require only one permit unless the next bullet applies
 - if different parts of a single installation are operated by different operators, each part of the installation with a separate operator constitutes a separate regulated facility

- if the number of operators operating different parts of the installation changes over time, the number of regulated facilities will therefore also change
- where there are different operators of different parts of one installation, each will be responsible for complying with their permit conditions. In such cases, regulators should ensure that there is no ambiguity over which operator has responsibility for which part of the installation

Pre-application discussions

- 5.4 Pre-application discussions between operators and regulators can help in improving the quality of the formal application and are therefore encouraged. Regulators will provide free basic pre-application advice, but more in-depth advice will be chargeable³³. In order for such discussions to make the best use of time, the operator is expected to have read the relevant published guidance. The regulator will not provide advice that might prejudice its determination of an application.
- 5.5 Operators and regulators may use the discussions to clarify whether a permit is likely to be needed. The regulator may also give operators general advice on how to prepare their applications, focus on the key issues, and tell them what additional guidance is available. Other parties may be invited to join these discussions if appropriate – for example, a public consultee (see chapter 10 on [Consultation and public participation](#)). Participation of other parties might be subject to national security restrictions or limited because of commercial confidentiality issues (See Chapter 14 on [Public registers and information](#)).
- 5.6 Operators should bear in mind that, especially for cases where there is a high level of public interest, good engagement with local or national interested parties at the pre-application stage can be beneficial to all sides and operators are encouraged to take account of the interests of the local community at the earliest possible stage.

Using existing data

- 5.7 Operators may draw upon or attach other sources of information in their applications such as extracts from:
- Environmental Impact Assessments;

³³ See: <https://www.gov.uk/government/publications/environmental-permit-pre-application-advice-form>. See also (for Wales): <https://naturalresources.wales/permits-and-permissions/environmental-permits/pre-application-advice-for-environmental-permits/?lang=en>.

- documents relating to an installation's regulation under the Control of Major Accident Hazards (COMAH) Regulations³⁴;
 - externally certified environmental management systems;
 - site reports prepared for planning purposes; and
 - reports to meet the requirements of the Quarries Regulations³⁵.
- 5.8 They should make clear which parts of any attachments are relevant to their environmental permit applications and should demonstrate how they relate to the relevant requirements.

Timing of applications³⁶

- 5.9 Where proposals involve substantial expenditure, whether on construction work, equipment, software, procedures or training, operators should normally make an application when they have drawn up full designs but before any work commences (whether on a new regulated facility or when making changes to an existing one). Where regulated facilities are not particularly complex or novel, the operator should usually be able to submit an application at the design stage containing all information the regulator needs. If, in the course of construction or commissioning and after a permit has been granted, the operator wants to make any changes which mean that the permit conditions have to be varied, the operator may apply for this in the normal way (see chapter 6 on [Application Procedures](#)).
- 5.10 There is nothing in the EPR to stop an operator from beginning construction before an environmental permit has been issued (but it should be noted that planning requirements are a separate issue). However, the operator risks regulators not agreeing with the design and infrastructure put in place. Therefore, to avoid any expensive delays and re-work, it is in the operator's interest to submit applications at the design stages. Any investment or construction work that an operator carries out before it has an environmental permit will be at its own risk and will in no way affect the regulator's decision.
- 5.11 The preceding paragraph does not however apply to flood risk activities, where construction of anything in a relevant location might cause an unacceptable flood risk. A flood risk activity permit must be in place before any physical interventions begin.

³⁴ The Control of Major Accident Hazards Regulations 2015 (SI 2015/483).

³⁵ The Quarries Regulations 1999 (SI 1999/2024).

³⁶ These paragraphs do not apply to radioactive substances activities consisting of intrusive investigation work, or to nuclear new-build activities.

Novel applications

- 5.12 If an operator is planning an innovative process for which the regulator has not produced relevant guidance, the operator should, in consultation with the regulator, assemble details of the process, including the potential environmental impact, before making an application. When determining the application the regulator must consider the predicted environmental outcome rather than focussing on the novel nature of the process.
- 5.13 For some novel and complex installations, with long lead times and multiple design and construction phases, the regulator and the operator may agree to a staged application procedure³⁷.

Planning and environmental permit applications

- 5.14 If a regulated facility also needs planning permission, it is recommended that the operator should make both applications in parallel whenever possible. This will allow the environmental regulator to start its formal consideration early on, thus allowing it to have a more informed input to the planning process³⁸.
- 5.15 Applicants for complex proposals are likely to find pre-application discussions particularly beneficial. Wherever possible in such cases, operators should engage in pre-application discussions with the regulator before submitting an application for an environmental permit. This can potentially avoid significant costs and delay in the course of the permitting process by identifying any issues of fundamental concern at an early stage and ensuring these are addressed at the design stage if possible.

Consolidation into a single permit

- 5.16 Regulation 18 provides that the regulator can replace environmental permits for a number of regulated facilities with a single permit covering the same facilities. This single permit would contain the same conditions as the permits which are replaced.
- 5.17 This consolidation can be done where there is more than one regulated facility with the same operator. There are however limits to the permits that can be combined (see the section on [A single permit](#) in chapter 3).

³⁷ This procedure is not the same as the staged procedure described in the Guidance on Radioactive Substances Regulation.

³⁸ <https://www.gov.uk/government/publications/developments-requiring-planning-permission-and-environmental-permits>

- 5.18 It is expected that the regulator will not normally exercise this power without the agreement of the operator.

6. Application procedures³⁹

This chapter describes the process of making applications. It covers applications for environmental permits and also applications to vary, transfer and surrender permits.

Applications

6.1 The requirements for applications are set out in Schedule 5. The application must:

- be made by the operator (though it may be made by an agent acting on behalf of the operator);
- in the case of a transfer application, be made jointly by the current and future operators;
- be made on the form provided by the regulator or via a regulator's online application platform;
- include the information required by the application form or the online platform; and
- include the relevant fee (see chapter 12 on [Charging](#)).

6.2 An applicant can withdraw an application at any time before it is determined but the regulator is not obliged to return any of the application fee.

Application forms

6.3 Operators must use the forms or online platform provided by regulators to make their applications. Application forms should:

- be clear and simple to understand;
- identify any administrative and technical information required;
- require the information required by any relevant directive(s);
- require, where relevant, the assessment of the potential impact on the environment and human health;
- require, where relevant, a level of detail proportionate to the environmental risk; and
- be sufficiently comprehensive to enable operators to submit complete applications.

³⁹ See: <https://www.gov.uk/topic/environmental-management/environmental-permits>.

Ensuring applications are complete and duly made

- 6.4 Applications should be made properly and give all the information a regulator needs to make a determination. An application may not be “duly made” if it cannot be determined. A regulator may conclude that an application is not duly made when, for instance:
- it has not been submitted on the correct form;
 - it is for an activity that falls outside the scope of the EPR (it is not for a regulated facility);
 - the information in the application is not sufficiently comprehensive or adequate to make a determination;
 - it has been sent to the wrong regulator; or
 - the prescribed fee has not been paid.
- 6.5 Where there is more than one operator of an installation, each operator must make a permit application in respect of the part of the installation it operates. The regulator cannot consider that any of the applications is duly made unless and until it has received duly made applications from all of the operators.
- 6.6 Regulators should use normal standards of reasonableness and common sense to assess whether applications are duly made. The regulator should always tell the applicant why it considered that an application was not duly made.
- 6.7 The regulator should acknowledge duly made applications, identifying the date it expects to determine the application. Acknowledgements should explain how, if the application is not determined on time (see paragraph 15 of Part 1 of Schedule 5), the applicant can notify the regulator that it considers the application to have been refused and so allow an appeal against that refusal (see also chapter 13 on [Appeals](#)).
- 6.8 A regulator may accept changes to a duly made application where it considers it appropriate. This can include a proposed change in the operator of a new facility. Where the regulator considers the proposed change to be too significant, however, a new application will be required. The implications of changes to an application for the requirements of public participation should always be considered (see chapter 10 on [Consultation and public participation](#)) and might indicate either that a new application should be required or that there should be further consultation.

Determination periods

- 6.9 The determination period begins on the date the regulator receives an application which is subsequently determined to be duly made (see paragraph 16 of Part 1 of Schedule 5). A rare exception to this is where it is necessary to consult with other EU Member States (see paragraph 10 of Part 1 of Schedule 5). This can apply only to an activity listed in Annex I to the Industrial Emissions Directive (see the Guidance on Part A installations⁴⁰) and to a Category A mining waste facility (see the Guidance on the Mining Waste Directive⁴¹)⁴².
- 6.10 The periods for determining applications are (see paragraph 15 of Part 1 of Schedule 5):
- two months for an application:
 - to transfer a permit; or
 - for the grant or variation of a permit for a stand-alone flood risk activity;
 - three months for an application:
 - for the grant of an environmental permit for:
 - mobile plant;
 - radioactive substances activities described in paragraph 11(5) of Part 2 of Schedule 23 (mobile radioactive apparatus used for specified purposes);
 - standard facilities (except those that are also Part A installations – see Chapter 8 [Standard Rules Permits](#));
 - mining waste operations not involving a mining waste facility to which Article 7 of the Mining Waste Directive applies (see paragraph 2(1) of Schedule 20);
 - certain stand-alone flood risk activities (see paragraph 5(1) of Part 1 of Schedule 5); or

⁴⁰ See <https://www.gov.uk/government/publications/environmental-permitting-regulations-guidance-on-part-a-installations>.

⁴¹ See: <https://www.gov.uk/government/publications/environmental-permitting-guidance-the-mining-waste-directive>

⁴² Note that certain radioactive substances activities require an opinion from the European Commission under Article 37 of the Euratom Treaty before grant of an environmental permit (see the Guidance on Radioactive Substances Regulation: <https://www.gov.uk/government/publications/radioactive-substance-regulations-rsr-guidance>)

- medium combustion plant and specified generators, unless the regulator determines that the public should be consulted;
 - to surrender a permit; or
 - to vary a permit (other than for a stand-alone flood risk activity or where public participation is required);
 - four months for an application:
 - for the grant of an environmental permit for any regulated facility except for the exceptions set out above; or
 - to vary a permit where public participation is required (see paragraph 5(2) to (4) of Part 1 of Schedule 5).
- 6.11 No determination period applies to an application for the grant or transfer of a permit from a nuclear site licensee in relation to a radioactive substances activity.
- 6.12 The determination period for an application for a permit for a Category A mining waste facility does not begin until the regulator is notified by the relevant emergency planner⁴³ that it has the information necessary to enable it to draw up an external emergency plan.
- 6.13 It is always open to the regulator and the applicant to agree a longer period if this is necessary.
- 6.14 Where the regulator has not determined the application within the prescribed time, the applicant can notify the regulator that it considers the application to have been refused. The applicant may then appeal against the deemed refusal (see chapter 13 on [Appeals](#)).
- 6.15 The determination periods quoted above can lengthen where:
- decisions are required as to whether information is sensitive due to commercial or industrial confidentiality and/or national security; or
 - further information is required to determine the application.
- 6.16 The “clock stops” on the determination period where the regulator has served a notice requiring further information (see paragraph 16(3)(a) of Part 1 of Schedule 5). The clock starts again once the regulator has received all the information required by the notice.

⁴³ “Competent Authority” as defined by regulation 2 of the Major Accident Off-Site Emergency Plan (Management of Waste from Extractive Industries) (England and Wales) Regulations 2009 (SI 2009/1927).

- 6.17 These are the legal requirements but, in order to meet a recommendation from the Penfold Review on non-planning consents⁴⁴, the Environment Agency aims to determine all new permit applications within 13 weeks⁴⁵. This target is subject to a number of exceptions agreed with government, including:
- major/complex projects on a scale similar to those determined through the major infrastructure planning unit;
 - factors beyond the Environment Agency's control:
 - where the statutory consultation periods take up all or a significant proportion of the 13 week period, or the site is of high public interest and extended consultation is required;
 - where the delay is due to another permission, consent or decision being required before the permit can be issued (for example "call-in" by the Secretary of State, a planning consent is required, or the permit application is linked to another permit);
 - where a notice for further information is required to complete the determination; and
 - where a different deadline is agreed with the applicant.

Requests for more information

- 6.18 Even where an application is duly made, there may be circumstances where the regulator needs to serve a notice asking for more information it needs to determine the application (paragraph 4 of Part 1 of Schedule 5).
- 6.19 The regulator should require further information only where that information is essential to allow the application to be determined. Any request for further information should meet at least one of the following criteria. The information must be necessary to:
- assess whether the proposal meets any Directive or other requirements; or
 - determine the appropriate permit conditions.
- 6.20 This information might, for example, comprise of either:
- information to understand sufficiently the environmental impact or risk posed; or

⁴⁴ See chapter 3 of the review <http://www.bis.gov.uk/assets/biscore/better-regulation/docs/p/10-1027-penfold-review-final-report.pdf>

⁴⁵ Applications, driven by legislative deadlines, that create short term yet significant increases in permit applications fall outside of the Penfold 13 week target (for example new waste installation permits required by the Industrial Emissions Directive in 2015).

- information to understand the proposed operations sufficiently.
- 6.21 Any further information notice must be served as soon as possible in the determination process. The notice must clearly specify what information the regulator requires to determine the application, why it needs that information and when the information must be supplied. A reasonable period should be given for the applicant to provide the information.
- 6.22 The applicant must provide all the information specified in the notice. Omissions either in the range or detail of information may result in the regulator considering that the applicant has failed to provide the information.
- 6.23 The regulator can decide, if the applicant does not provide the further information, that the determination should be discontinued. Where this occurs, the regulator must first review its decision to require further information and then may serve a notice stating that the application is deemed to have been withdrawn.
- 6.24 Where a regulator intends to take this step, it should normally offer the operator a final opportunity to supply the information and consider offering an opportunity for a face-to-face meeting. There is a right of appeal against the deemed withdrawal of the application (see chapter 13 on [Appeals](#)).

Duty to consider representations

- 6.25 The regulator has a duty to consider the representations made during the determination process (see paragraph 11 of Part 1 of Schedule 5). These representations may be received from:
- members of the public or interested bodies;
 - persons with rights to land; and
 - other Member States.
- 6.26 Public participation is addressed in chapter 10 on [Consultation and public participation](#).

Permit conditions requiring the consent of others

- 6.27 Regulators can impose permit conditions requiring operators to do things which they are not entitled to do without the consent of another person (see regulation 15(1)). That person is required to grant such rights as are necessary to enable the operator to comply with the condition. However, the person granting those rights is entitled to compensation from the operator (see Part 2 of Schedule 5).

- 6.28 These conditions may for example be used where it is necessary to monitor the effects of an activity on another person's land.
- 6.29 The people who own or have the ability to grant rights to the land must be notified by the regulator (see paragraph 9 of Part 1 of Schedule 5).

Notification of the determination

- 6.30 The regulator must notify the applicant of its decision and the reasons for making the decision (see paragraph 17 of Part 1 of Schedule 5). The determination must also be published on the regulator's website. Applicants must be informed of their rights of appeal (see chapter 13 on [Appeals](#)).
- 6.31 Whenever it considers it necessary, the regulator should issue a new permit consolidating any changes brought about by the application for variation, transfer (in whole or in part) or partial surrender (see paragraph 19 of Part 1 of Schedule 5). This will provide clarity for both the regulator and the operator.

Specific procedures for different types of applications

Variation applications

- 6.32 Once an operator has an environmental permit, changes in the operation of the regulated facility may require the operator to apply to vary the permit⁴⁶.
- 6.33 The operator must apply to the regulator to vary the permit conditions when proposing a change that would mean that a permit condition could no longer be complied with. Other aspects of the environmental permit may also require a variation application – for example, to change the name of the operator on the permit (though not when the operator's legal identity changes, for example a change to its unique identifier at Companies House: this would require a transfer application).
- 6.34 A variation application may include an increase to the extent of the site over which the regulated facility operates, as covered by the permit. Where this occurs, issues such as the protection of the land must be addressed.
- 6.35 However, a variation cannot reduce the extent of the site covered by the environmental permit if the permit requires consideration of the condition of the land. Since this is not required for Part B activities other than one that relates to a waste operation (regulated for emissions to air only), or for stand-

⁴⁶ Specific provisions apply to Part A installations - see the Guidance on Part A installations.

alone water discharge or groundwater activities, this restriction does not apply to them (see regulation 20(2) and 20(3)). Where the restriction does apply, an operator wishing to reduce the extent of the site of the regulated facility must apply for partial surrender (see the section on [Surrender applications and notifications](#)).

- 6.36 For applications to vary an environmental permit, public participation is required in two situations (see paragraph 5(2) of Part 1 of Schedule 5). First where there is a “substantial change” to the operation of an installation (see guidance for Part A installations⁴⁷) and mining waste facilities⁴⁸. Second, the regulator may decide that consultation is appropriate in cases (whether or not relating to an installation) that do not involve substantial changes. In these cases, the regulator will notify the operator of its decision and the consultation will proceed as if there were a substantial change (see Chapter 10 on [Consultation and public participation](#)).

Transfer applications and notifications

- 6.37 The EPR allow for permit transfers (see regulation 21). Whenever the operator's legal identity changes, for example a change to its unique identifier at Companies House; or if the permit holder ceases to be the operator, this requires a transfer application or notification.
- 6.38 A permit can be transferred:
- completely; or
 - partially, so that the regulated facility becomes two regulated facilities with the original operator retaining control of some of the original facility, which then becomes a separate regulated facility; and another operator taking over the operation of the transferred part of the original facility, which then becomes a second separate regulated facility
- 6.39 Transfer by notification is possible only in the case of any part of a permit that relates to a stand-alone water discharge, stand-alone groundwater or stand-alone flood risk activity (see regulation 21(3)). In these cases joint notification by the operator and proposed transferee must be made on a form provided by the regulator, include information specified on that form and specify an effective date for the transfer to take place. Where more than one person is the current permit holder only one such person need notify a transfer, together with the proposed operator.

⁴⁷ Available at www.defra.gov.uk/environment/policy/permits/guidance.htm

⁴⁸ See Article 8(3) of the Mining Waste Directive, and paragraph 5(2)(b) of Schedule 5, and paragraph 8 of Schedule 20.

- 6.40 In all other cases where an operator wants to transfer all, or part, of a permit to someone else, it must make a joint application with the proposed new operator. For a partial transfer, where the original operator retains part of the permit, the application must include a plan identifying which parts of the site and which regulated facility (or facilities) the operator proposes transferring.
- 6.41 Where the regulator grants an application to transfer the whole permit, it will issue a new permit to the new operator.
- 6.42 For partial permit transfers, the regulator will issue a new permit to the new operator. This will cover the parts of the operation that have been transferred. At the same time, the regulator will vary the original operator's permit to reflect the extent of the transfer.
- 6.43 Regulators should vary permit conditions, where necessary, as a result of a transfer. For example, further conditions may become necessary to reflect the shared operation. This will ensure that there is co-operation between the operators.

Transfers where the permit holder cannot be located or dies

- 6.44 Where the regulator is satisfied that the current permit holder who is a private individual cannot be located, it can accept an application or notification for a transfer from a proposed transferee alone. The regulator will require the proposed transferee to explain the basis for their view that the current permit holder cannot be found. If it appears from the explanation that the proposed transferee has not taken reasonable steps to find the current permit holder, the regulator can ask for more steps to be taken. As a last resort, the regulator has the option to reject the application as not duly made, in which case an application for a new permit would have to be made instead.
- 6.45 Where there is more than one permit holder, all the holders that can be located must join the application, but this requirement does not apply to notifications. This type of transfer is not available where the facility authorised by the permit has been out of operation for more than six months.
- 6.46 For transfers of this type that require an application, the identity and competence of the proposed new operator will be assessed in the usual way.
- 6.47 Where an environmental permit authorising the operation of a regulated facility is held by an individual who dies, the permit will vest in the personal representatives of the deceased. They must notify the regulator that the permit has vested in them as soon as practicable. They have up to six months from the date the operator died to make an application to transfer the permit. If

not transferred within the six months period, the permit will cease to have effect.

- 6.48 In some cases, personal representatives may not want to hold the permit in which case, if they request it to do so, the regulator will consider whether it is appropriate to revoke the permit. The regulator may also consider revocation if it has serious concerns about the ability of the personal representatives to operate the facility in accordance with the permit.

Surrender applications and notifications

- 6.49 There are two separate methods for surrender. The operators of some regulated facilities may simply notify the regulator; but all others must make an application to the regulator (see regulations 24 and 25).
- 6.50 Surrender of the environmental permit by notification is restricted to the operators of Part B installations (except to the extent they relate to a waste operation), mobile plant, solvent emission activities, stand-alone water discharge activities, stand-alone groundwater activities, stand-alone flood risk activities (except where a permit condition operates beyond the time when the activity is complete), medium combustion plant, and specified generators.
- 6.51 Where surrender of a permit is by application, the regulator must accept an application (except for a permit for a radioactive substances activity at a nuclear site) if it is satisfied that the necessary measures have been taken to:
- avoid a pollution risk resulting from the operation of the regulated facility; and
 - return the site of the regulated facility to a satisfactory state, having regard to the state of the site before the facility was put into operation.
- 6.52 For permits authorising flood risk activities, the regulator must also be satisfied that the necessary measures have been taken to avoid risk of flooding, of harm to the environment, and of detrimental impact on drainage.
- 6.53 The pollution control measures which the regulator is required to apply to Part B installations, water discharge activities and groundwater activities do not include measures to address pollution of the land. There is therefore no requirement to consider the condition of the land prior to surrendering the permit.
- 6.54 For mobile plant the position is similar in that there is no geographical site associated with the environmental permit. There cannot therefore be a consideration of the condition of the land before a surrender takes place. It

should be noted that, where relevant, the permit conditions for mobile plant should be in place to ensure the protection of the land on which they operate.

- 6.55 The criteria for determining surrender of a permit for a radioactive substances activity on a nuclear site are set out in guidance published jointly by the regulators for England, Wales and Scotland⁴⁹.
- 6.56 It is possible to surrender part of an environmental permit. This is the only method of reducing the extent of the site of a regulated facility covered by a permit. Where there is a partial surrender, the regulator may need to vary the permit conditions to reflect this.

Determination by the Secretary of State or the Welsh Ministers

- 6.57 The Secretary of State or the Welsh Ministers can require any application to be sent to them for determination (see regulation 62). This would be an exceptional step and likely to be taken only if the application involves issues of more than local importance – for example, if the application:
- is of substantial regional or national significance;
 - is of substantial regional or national controversy; or
 - may involve issues of national security or of foreign governments.
- 6.58 Any decision on the need for determination by the Secretary of State or Welsh Ministers would be made solely on those grounds, with no consideration of the substantive merits of the application itself.
- 6.59 The Secretary of State or the Welsh Ministers will deal with these cases as soon as possible. The regulator must consult as normal but should send any representations to the Secretary of State or the Welsh Ministers. The Secretary of State or the Welsh Ministers may choose to arrange a hearing and would normally do so if the regulator or the operator asks for one. The Secretary of State or the Welsh Ministers may then direct the regulator to:
- grant a permit, stating which conditions should be included; or
 - refuse the permit.

⁴⁹ See: <https://www.gov.uk/government/publications/decommissioning-of-nuclear-sites-and-release-from-regulation>.

7. Determining applications

This chapter deals with the decision making of the regulator in determining applications. It also sets out the relevant criteria for the different categories of applications.

Determination

- 7.1 The regulator must decide whether to grant or refuse the proposal in an application and, where applicable, what permit conditions to impose.
- 7.2 For all applications made under the EPR, the regulator must ensure that its determination delivers all relevant statutory requirements and provides the required level of protection to the environment.

Assessing environmental risk⁵⁰

- 7.3 The application to the regulator will, as relevant, include an assessment of the environmental risk of the proposals including the risk under both normal and abnormal operating conditions. The regulator should satisfy itself that the operator's assessment of the risk is sufficiently robust. In particular, any assumptions that the operator has made about its proposals must be clearly justified. The regulator should assess the application and the adequacy of the impact assessment including whether the control measures proposed by the operator are appropriate for mitigating the risks and their potential impact.
- 7.4 Guidance on environmental risk assessment has been produced and where appropriate regulators should make reference to this guidance⁵¹.

Requirements from Directives

- 7.5 EU Directives set out most of the requirements to be met through environmental permitting. Schedules 7 to 25B set out the Articles in Directives that the regulator must take into account when permitting regulated facilities under the EPR regime. Chapter 2 illustrates the way that various different Directive requirements may apply to a regulated facility and references guidance on the Directive-specific requirements.

⁵⁰ Paragraphs 7.3 and 7.4 do not apply to radioactive substances activities: see instead the Guidance on Radioactive Substances Regulation.

⁵¹ See: <https://www.gov.uk/government/publications/guidelines-for-environmental-risk-assessment-and-management-green-leaves-iii>

Refusing an application

- 7.6 The regulator must refuse a permit application in certain circumstances (see the section on [Permit applications](#)).
- 7.7 The regulator may also decide to refuse an application in certain circumstances. Examples of cases where this might be appropriate are:
- the regulator has reason to believe that the operator is not competent to run the regulated facility in accordance with the permit (see chapter 9 on [Operator competence](#));
 - the environmental impact would be unacceptable (for instance, an operator might propose siting a new facility close to an extremely sensitive environment, but with no means of providing adequate control);
 - the information provided by the operator does not provide a reasonable basis to determine the permit conditions, taking into account the operator's responses to requests for more information (see the chapter 6 section on [Requests for more information](#)); and
 - the requirements of relevant EU Directives cannot be met.

Permit conditions

- 7.8 If the regulator grants a permit it can include any conditions it sees fit (see paragraph 12(2) of Part 1 of Schedule 5). It has a duty to impose conditions in order to secure the objectives that apply to the class of regulated facility (see [Requirements from Directives](#)).
- 7.9 Where the regulator grants an application for the variation, transfer or partial surrender of an environmental permit and there are additional variations needed as a consequence of the application, the regulator should make those variations to the environmental permit (see paragraph 12(3)(a) of Part 1 of Schedule 5).
- 7.10 All permit conditions should be both necessary and enforceable. "Necessary" means that the regulator should be able to justify the permit conditions. To be enforceable, conditions should clearly state the objective, standard or desired outcome of the condition so that the operator can understand what is required. Subject to legal requirements, duplication with the requirements of other legislation should be avoided.
- 7.11 Permit conditions may comprise some or all of the following:
- conditions stipulating objectives or outcomes;
 - standards to mitigate a particular hazard/risk; and

- conditions addressing particular legislative requirements.
- 7.12 The regulator can include conditions in the permit setting out steps to be taken during, prior to and after the operation of the regulated facility.

Determining different application types

- 7.13 The general considerations set out above should be applied to all application types. In addition to these, there are specific considerations for different application types. These are set out in the following sections.

Permit applications

- 7.14 The regulator is required to refuse an application for a permit in three circumstances:
- the regulator must not grant the permit if it considers that the applicant will not be the operator of the regulated facility (see the chapter 5 section on [The operator](#));
 - except in the case of stand-alone water discharge, stand-alone groundwater or stand-alone flood risk activities, the regulator must not grant a permit if it considers that the operator will not comply with its conditions (see paragraph 13 of Part 1 of Schedule 5) – see chapter 9 on [Operator Competence](#); and
 - the regulator must refuse to grant a permit relating to an existing Category A mining waste facility if the regulator receives a notice from the relevant emergency planner that the operator has not provided the information necessary to enable the relevant emergency planner to draw up an external emergency plan (see paragraph 14(2) of Schedule 20).

Variation applications

- 7.15 A regulator does not have to accept an operator's proposals to vary a permit. If it does, it must impose conditions to secure compliance with the EPR.
- 7.16 The regulator may decide that only some parts of the variation sought should be reflected in revised permit conditions. The regulator may also consider that it needs to impose conditions that go beyond the operator's proposals.

Transfer applications

- 7.17 The regulator must determine whether to allow the transfer. The transfer must be refused if the regulator considers that the proposed transferee will not be the operator or will not operate the facility in accordance with the

environmental permit (see paragraph 13 of Part 1 of Schedule 5). The primary consideration in transferring a permit is the proposed new operator's competence to operate the regulated facility. The operator competence provisions are described in chapter 9 on [Operator Competence](#). This is the same as for new permit applications and the regulator should consider the applications in the same way.

Surrender applications

- 7.18 An environmental permit remains in force until it is surrendered, revoked or consolidated or, where a permit is held by personal representatives following the death of the permit holder (see [Transfers where the permit holder cannot be located or dies](#)), no transfer application or notification is made within 6 months of the death of the permit holder. Until that time, the operator remains subject to its conditions.
- 7.19 When a regulated facility ceases to operate⁵², an operator should (but is not compelled to) seek surrender of the permit so as to end regulation under EPR and the requirement to pay the associated annual charges.
- 7.20 Chapter 6 (see [Surrender applications and notifications](#)) sets out the two methods of surrender: application and notification; and which applies to what type of regulated facility. This section addresses only the situation where an operator is required to apply to surrender its environmental permit, that is to say where the regulator must make a decision whether or not to accept the surrender.
- 7.21 The general requirements for permit surrender (see paragraph 14 of Part 1 of Schedule 5) are that the regulator must accept the surrender of the environmental permit if it is satisfied that the necessary measures have been taken to:
- avoid any pollution risk resulting from the operation of the regulated facility (paragraph 7.23 below); and
 - return the site of the regulated facility to a satisfactory state, having regard to the state of the site before the facility was put into operation (paragraphs 7.30 to 7.33 below).
- 7.22 These requirements do not apply to an application to surrender a permit authorising a radioactive substances activity at a nuclear licensed site⁵³.

⁵² Landfill facilities and mining waste operations should not apply to surrender the permit until after the appropriate period of aftercare.

Avoiding pollution risk

- 7.23 The requirement to avoid any pollution risk must be interpreted in a proportionate way. In practical terms, operators should tackle the risks of any pollution that could occur, unless they are so small that further action is not justified. This might mean removal of tanks containing pollutants, as they could rust or get damaged, so releasing the pollutants.

The site of the regulated facility

- 7.24 “The site of the regulated facility” means all of the land on which any of the regulated facilities covered by an environmental permit may be carried on. The site is the “footprint” of the regulated facility/ies. This includes any land that is integral to the satisfactory operation of the facility, for example, areas needed for the movement of materials by vehicles or other means, and the area around any associated pipework.
- 7.25 Where there is more than one regulated facility on the same site regulated under the same permit (see the section in chapter 3 on [A single permit](#)), the site is made up of the footprints of the individual regulated facilities.
- 7.26 In many cases the site of the regulated facility can simply be defined by the perimeter fence of the facility. This is however less likely to be the case for regulated facilities situated within larger facilities.

The initial state of the site of the regulated facility

- 7.27 The regulator requires a point of reference for judging whether there has been any additional contamination of the site during operation of the regulated facility. The regulator should normally attribute any additional contamination to operation of the facility. The regulator should hold the operator responsible for any contamination on the site unless the regulator is convinced that the operator cannot reasonably be held responsible for it. At some sites contamination may have resulted from activities other than the operation of the regulated facility.
- 7.28 The regulator should not hold the operator responsible under the EPR for contamination on the site that the regulator is convinced was caused:

⁵³ The ONR has powers under the Nuclear Installations Act 1965 (NIA 65) to impose similar requirements on nuclear site licensees to protect land quality. There is a process under NIA 65 for delicensing nuclear sites. However there is no direct statutory link between delicensing and surrender of an EPR permit. For this reason the environmental regulators have published the guidance described in paragraph 6.54 above explaining how they will determine surrender applications for nuclear sites.

- before the environmental permit was issued under the EPR for a new regulated facility;
- for a regulated facility that obtained its environmental licence before the coming into force of the EPR:
 - before the PPC permit was issued for a facility previously regulated under the PPC Regulations;
 - before the issue of a licence under the Environmental Protection Act 1990 or under Part I of the Control of Pollution Act 1974 for a facility previously regulated under a waste management licence (including where the licensed site subsequently entered the PPC regime); or
 - before the issue of a registration or authorisation under the 1960 or 1993 Radioactive Substances Acts.

7.29 For those sites that were previously regulated under a waste management licence (see paragraph 7.28 above) the consideration should be of contamination which results from the use of the land for the treatment, keeping or disposal of waste (whether or not in pursuance of the waste management licence).

Satisfactory state

- 7.30 The regulator must ensure that the necessary measures have been taken to return the site of the regulated facility to a satisfactory state. This can be achieved only if operators aim to restore a site to the condition it was in before the facility was put into operation⁵⁴⁵⁵.
- 7.31 This may be significantly stricter than the “suitable for use” test of the contaminated land regime in Part IIA of the Environmental Protection Act 1990 and similar controls on redevelopment. While “suitable for use” is appropriate for pre-existing contamination, it is not the right test for the preventative environmental permitting regime. When applying to surrender a permit, applicants are advised to consider whether they might be required to carry out remediation under Part IIA and if so whether it would be more cost effective to undertake operations for both purposes at the same time.

⁵⁴ For radioactive substances activities see the Guidance on Radioactive Substances Regulation Guidance at: <https://www.gov.uk/government/publications/radioactive-substance-regulations-rsr-guidance>.

⁵⁵ Additional guidance in respect of installations covered by Chapter II of the Industrial Emissions Directive is in the Part A Guidance.

- 7.32 Other than in exceptional circumstances operators should remove any contamination and return the site to the original condition⁵⁶. However, where an operator can robustly demonstrate that is unsustainable or not practical to do this, then the contamination should be removed as far as practicable.
- 7.33 The return of the site of the regulated facility to a satisfactory state should include:
- the removal of any residual waste deposits (though clearly not for landfills or mining waste operations for the permanent deposit of extractive waste);
 - removing as far as is practical any contamination to return the site to the original condition; and
 - where removal is not practical, treating or immobilising contamination, remedying any harm the contamination may have caused, and mitigating the effects of any harm.

Notification of surrender

- 7.34 If the operator satisfies the regulator that it has removed any pollution risks and has restored the site to a satisfactory state (and, in the case of flood risk activities, it has removed any risks of flooding, harm to the environment and detrimental impact on drainage), then the regulator should accept the surrender and give the operator notice of its determination. The permit then ceases to have effect on the date specified in the notice of determination. If the regulator is not satisfied, it has to give notice of its determination stating that the application has been refused.

⁵⁶ For a landfill, mining waste operation for the permanent deposit of extractive waste, or a near surface disposal facility for solid radioactive waste, it is clearly not possible to return the site to the state that existed prior to the operation of the facility.

8. Standard rules permits

This chapter describes standard rules and their use in standard rules permits.

Standard rules⁵⁷

- 8.1 The Secretary of State, the Welsh Ministers, the Environment Agency and Natural Resources Wales can make standard rules (regulation 26⁵⁸).
- 8.2 These rules consist of requirements common to the type of facilities subject to them (“standard facilities” as defined in regulation 2(1)) and can be used instead of site-specific permit conditions. Standard rules are suitable for industry sectors where the generic risks are well-understood, assessed and mitigated.
- 8.3 Standard rules must achieve the same high level of environmental protection as site-specific conditions.
- 8.4 Each set of rules will form the conditions of the standard rules permit. Because an application for a permit subject to a set of standard rules is entirely voluntary, there is no right of appeal under regulation 31(1)(b) against the inclusion of standard rules as permit conditions (see regulation 27(3)). (All other rights of appeal are unaffected.)

Developing standard rules

- 8.5 In preparing standard rules, it is necessary to consult widely with those who may be affected by or have an interest in the rules (see regulation 26(2)), including relevant statutory bodies. The standard nature of the facilities for which standard rules will be produced allows a general consideration of the requirements and standards for all such facilities.
- 8.6 It is expected that standard rules will be developed in consultation with the relevant industry.

⁵⁷ See: <https://www.gov.uk/government/collections/standard-rules-environmental-permitting>. For Wales, see: <https://naturalresources.wales/permits-and-permissions/installations/standard-rules-permits-for-installation/?lang=en>.

⁵⁸ The Secretary of State and Welsh Ministers may make standard rules for local authority-regulated facilities in (respectively) England and Wales. The Environment Agency and Natural Resources Wales may make standard rules in relation to facilities they regulate (in England and Wales respectively).

- 8.7 Assessments of risk can be carried out nationally for common generic facilities. This understanding of the hazards and risks posed by these facilities would form the basis for the development of standard rules for standard facilities.

Standard rules permits

- 8.8 It is the operator's decision whether it wishes to operate under standard rules. Where standard rules have been made, operators of regulated facilities eligible for standard rules permits can, if they wish, request that their regulated facility be made subject to the relevant rules. This request may be made in an application for a new permit or to vary an existing environmental permit.
- 8.9 The generic assessments of risk for standard facilities should be made available to businesses to assist them in (a) determining whether their activity is within the scope of the standard rules; and (b), if they apply for a standard rules permit, in adopting suitable control measures to meet those rules.
- 8.10 One important difference from other regulated facilities is that any additional site-specific assessment of risk is not necessary for a standard facility. Regulated facilities that require a location-specific assessment of impact and risk are not suitable for standard rules.
- 8.11 If the regulator agrees that standard rules are appropriate, the permit will state that the relevant set of rules is the conditions of the permit (see regulation 27(2)). The operation of the facility covered by the rules would then be subject to the requirements in the rules rather than site-specific conditions. Where a permit covers only standard facilities subject to standard rules, it can be described as a "standard rules permit".
- 8.12 A standard rules permit can authorise the operation of more than one standard facility operated by the same operator (see regulation 17(2)(d)). It is also possible for a single environmental permit to authorise the operation of a standard facility (or facilities) and other regulated facilities run by the operator on the same site (see the section in chapter 3 on [A single permit](#)). This environmental permit would not however be a standard rules permit.
- 8.13 Public consultation on applications for individual standard facilities is not required. This reflects the fact that consultation in the development of the rules must have already taken place (see chapter 10 on [Consultation and public participation](#)).

Revision and revocation of standard rules

- 8.14 Standard rules can be revised at any time, and there is a duty imposed by the EPR on regulators to keep the rules under review (see regulation 26(4)).
- 8.15 Where revisions are proposed, a consultation must take place in the same way as for the original production of the rules. A consultation is not however required for minor administrative changes to the rules (see regulation 26(3)).
- 8.16 Where there is a proposal to revise the standard rules, operators with permits that would be affected must be notified. Where revised rules are proposed, regulators must normally give operators three months' notice before the rules take effect (see regulation 28). Operators not wishing to operate under the revised rules can apply for a variation to their permit before the rules take effect.
- 8.17 As well as being revised, standard rules can be revoked by the authority that made the rules. Again there must be a consultation process involving the same people as in the development of the rules (see regulation 29).
- 8.18 Where such a revocation is to take place the regulator must vary permits containing standard rules to include suitable alternative conditions. The revoked rules continue to be conditions of the environmental permit until the regulator varies the permit (see regulation 30).

9. Operator competence

This chapter describes the requirements for operator competence including the role of management systems.

Operator competence

- 9.1 Operator competence supports the objectives of permitting by examining and maintaining the operator's ability to operate a regulated facility and fulfil the obligations of an operator (see the chapter 5 section on [The operator](#)).
- 9.2 Operator competence can be considered by the regulator at any time, whether as part of the determination of an application or at any time during the life of the permit. The regulator may refuse an application, set and vary permit conditions, and take enforcement action, having regard to the principles of operator competence described in this Chapter.
- 9.3 Following an application for the grant or transfer of an environmental permit, there is also a specific duty on the regulator not to grant or transfer the permit if it considers that the operator/new operator will not operate the facility in accordance with the permit (see paragraph 13 of Part 1 of Schedule 5⁵⁹). In making this decision the regulator should consider whether the operator cannot or is unlikely to operate the facility in accordance with the permit. The regulator might doubt whether the operator could or is likely to comply with the permit conditions if for example, the operator:
- has an inadequate management system;
 - demonstrates inadequate technical competence;
 - has a record of poor behaviour or non-compliance with previous regulatory requirements; or
 - has inadequate financial competence.
- 9.4 The following sections deal with each of these points in turn.

⁵⁹ This requirement does not apply in relation to standalone water discharge activities, stand-alone groundwater activities or stand-alone flood risk activities, where for these classes, transfer to a new operator is by way of notification, not application (see paragraph 6.39).

Management systems

- 9.5 In order to ensure a high level of environmental protection, operators should have effective management systems. The nature of the management system depends upon the complexity of the regulated facility.
- 9.6 Waste operation permits issued before 6 April 2008 for operations not carried out at an installation or Part B mobile plant, that do not already have a relevant existing permit condition, must have effective written management systems. These must also be kept under regular review, and produced on request by the regulator.
- 9.7 Complex regulated facilities are encouraged to put in place a formal environmental management system externally certified to the international standard ISO 14001 by a United Kingdom Accreditation Service (UKAS) accredited certification body. ISO 14001 requires that the management system includes safeguards for legal compliance and a commitment to continuous improvement of environmental performance. Environmental management systems must be specific to the site and activities for which they are being relied upon.
- 9.8 For simpler regulated facilities, externally-certified schemes may be less appropriate but should still be carefully considered by operators and, where appropriate, encouraged by regulators. The step-wise approach provided by BS8555 is particularly appropriate for smaller facilities and can make environmental management system implementation much simpler. Organisations can achieve UKAS-accredited certification to one or more stages of BS8555 under the IEMA, BSI Stems or, in Wales, the Green Dragon Scheme. There is also specific guidance on management systems for some industry sectors on the website of the Institute of Environmental Management and Assessment.

Box 2 – Other sources of information on Environmental Management systems

- ISO 14001: <https://www.iso.org/iso-14001-environmental-management.html>
- IEMA: <https://www.iema.net/policy/environmental-management/>
- UKAS: www.ukas.com
- BSI Stems: www.bsi-global.com/en/Assessment-and-certificationservices/management-systems/Standards-and-Schemes/BS-8555STEMS/
- Green Dragon: <https://www.groundwork.org.uk/Sites/greendragon/pages/about-greendragon>

- 9.9 Environmental management systems have relevance to other aspects of regulation, such as determining risk-based inspection frequencies (see section on chapter 11 on [Risk-based compliance assessment](#)). Recognised quality assurance schemes may also be relevant, and regulators may also take account of non-certified systems where these can be demonstrated to provide an equivalent role in safeguarding compliance and continual improvement of environmental performance.

Technical competence

- 9.10 Operators should be technically competent to operate their facility in compliance with the conditions of their permits. The operator's wider management system should contain mechanisms for assessing and maintaining technical competence. The competence of individuals should form part of those management systems.
- 9.11 All individuals that make up the technically competent management for any activity must:
- be in a position to control the day-to-day activities authorised by the permit;
 - understand the processes and equipment being used;
 - understand the risks to people and the environment and how those risks need to be managed;
 - know how to comply with the law and relevant guidance;
 - be familiar with the management systems and management structure on site; and
 - have the authority to make appropriate interventions in the running of the operation.
- 9.12 The development of industry-led competence schemes is strongly encouraged. Scheme providers should seek the advice of the relevant Sector Skills Council where appropriate when developing the scheme. All schemes should be based predominantly on qualifications accredited by Ofqual or Qualifications Wales, based on vocational qualifications where these exist, and agreed with the regulator and government.
- 9.13 Operators managing radioactive waste must seek advice from a Radioactive Waste Adviser (RWA) in relation to certain matters. This requirement does not

apply to waste in the form of sealed radioactive sources (see paragraph 7 of Part 4 of Schedule 23⁶⁰).

9.14 For operators of Part B installations technical competence is covered in Chapter 11 of the Manual⁶¹.

Relevant waste operations: approved schemes

9.15 “Relevant waste operations” are one or both of the following:

- any permitted waste operation which is not carried on at an installation or by means of a Part B mobile plant;
- a specified waste management activity as defined in paragraph 2(4) and (5) of Part 3 of Schedule 9 to the EPR.

9.16 All operators of relevant waste operations should comply with an approved competence scheme. Where no appropriate approved competence scheme is available, the regulator should assess the technical competence of the operator. Operators must periodically give the regulator either evidence of compliance with such a scheme or confirmation that the operator has not complied with such a scheme. This must be done by means of their quarterly or annual waste returns.

9.17 Any approved competence scheme must be:

- effective in developing and demonstrating technical competence across a sector or sectors and provide equivalent competence with other schemes approved for the sectors(s);
- risk-based and proportionate.
- able to provide mechanisms for demonstration and assessment of both initial competence and continuing competence;
- based on good operational practice and appropriate legislative requirements;
- based on individual competence and offer individuals and organisations choices in how they demonstrate and maintain competence;
- based consistently on National Occupational Standards where these exist;

⁶⁰ Further information on RWAs can be found on the Scottish Environment Protection Agency’s website at <https://www.sepa.org.uk/regulations/radioactive-substances/radioactive-waste-advisers>

⁶¹ See: <https://www.gov.uk/government/publications/environmental-permitting-general-guidance-manual-on-policy-and-procedures-for-a2-and-b-installations>.

- able to cater for the evolving complexity and diversity of the waste and resources management sector;
 - applicable to all relevant waste management operations, or where appropriate to all operations within the sectors for which the scheme is designed; and
 - inclusive, and must not prevent new entrants from developing necessary competences in the workplace.
- 9.18 Approved schemes for operators of relevant waste operations that meet the above criteria are:
- CIWM/WAMITAB scheme version 9, jointly developed by the Chartered Institution of Wastes Management (CIWM) and the Waste Management Industry Training and Advisory Board (WAMITAB); and
 - Competence Management System version 4, developed by the Energy and Utility Sector Skills Council (EU Sector Skills).

Poor record of compliance and behaviour

- 9.19 In assessing operator competence the regulator may also consider whether the operator or any other “relevant person” (see below) has a poor record of compliance with regulatory requirements. These considerations will include, but are not restricted to, evidence of convictions for “relevant offences”. Other considerations may include receipt of formal enforcement notices such as enforcement or suspension notices or a history of, or acute, non-compliance with permit condition(s).
- 9.20 In this context, a “relevant offence” is an offence that is relevant to a person’s ability to operate in compliance with the permit applied for or held or to a person’s conduct as the operator of a waste facility.⁶²
- 9.21 A “relevant person” in relation to a conviction for a relevant offence or non-compliance includes:
- the operator;
 - a director, manager, secretary or other similar officer of an operator (when it is a corporate body) and a partner in a limited liability partnership (LLP), who has either been convicted of a relevant offence

⁶² A list of offences that are considered to be relevant when considering environmental permits can be found here: <https://www.gov.uk/government/publications/relevant-conviction-guidance-for-permit-applications-for-waste-activities-and-installations-only>. The list is for guidance purposes and is not intended to be exhaustive.

him/herself, or who held a position in another corporate body when it was convicted of a relevant offence; and

- any other person that the regulator has reason to believe is a controlling or guiding mind of the operation.
- 9.22 The regulator must not grant or transfer a permit to persons it considers will not be the operator of that facility or will not operate the facility in accordance with the permit⁶³. This may include persons who have such a poor record of compliance with regulatory requirements or persons who have demonstrated such poor behaviour towards officers and the regulatory process that it appears unlikely that they would comply with permit conditions. Similar considerations could, equally, lead to revocation of (an) existing permit(s).
- 9.23 “Poor behaviour” includes any behaviour that the regulator considers to be unacceptable. In addition to previous operator performance, this could include physical acts or language (written, verbal or online) that causes staff to feel intimidated, afraid, offended, threatened or abused. Preventing access to a site, relevant records or operational information, failure to provide required documents and declarations that are disingenuous may also be considered poor behaviour.
- 9.24 The regulator must take into account the terms of the Rehabilitation of Offenders Act 1974 (ROA 1974). The Act applies only where an individual has been convicted of an offence. It does not apply to corporate bodies.
- 9.25 The regulator may consider relevant offences committed by individuals that have become spent under the terms of the ROA 1974 but only where the regulator is satisfied that justice cannot be done without doing so in accordance with section 7(3) of the ROA 1974.
- 9.26 After considering all available evidence, the regulator may still decide to grant or transfer a permit, or to allow a permit to continue in force, even though an operator has demonstrated a poor record of compliance with regulatory requirements such as being convicted of a relevant offence.

Financial competence

- 9.27 The operator of any regulated facility should be financially capable of complying with the environmental permit. The regulator should consider an

⁶³ See paragraph 13(2) of Part 1 of Schedule 5. The requirement not to grant or transfer the permit where the regulator considers that the operator will not comply with permit conditions does not apply to stand-alone water discharge activities, stand-alone groundwater activities and stand-alone flood risk activities (see paragraph 13(3) of Part 1 of Schedule 5).

operator's financial competence when determining the operator's ability to comply with the conditions in its permit.

- 9.28 Specific provisions apply to landfill facilities (see Guidance on the Landfill Directive⁶⁴), mining waste facilities (see Guidance on the Mining Waste Directive⁶⁵) and radioactive substances activities (see the section on high-activity sealed sources in the Guidance on Radioactive Substances Regulation⁶⁶).

Maintaining competence

- 9.29 Operators must maintain the standards of their management systems and competence throughout the regulated facility's life. Regulators can impose permit conditions to ensure this.
- 9.30 Regulators can reassess competence at any time and if not satisfied can take enforcement action including revocation of the permit (see the section in Chapter 11 on [Revocation](#)). In particular, if the operator of a relevant waste operation fails to comply with an approved competence scheme, the regulator may revoke the permit.

⁶⁴ See: <https://www.gov.uk/government/publications/environmental-permitting-guidance-the-landfill-directive>.

⁶⁵ See: <https://www.gov.uk/government/publications/environmental-permitting-guidance-the-mining-waste-directive>.

⁶⁶ See: <https://www.gov.uk/government/publications/radioactive-substance-regulations-rsr-guidance>.

10. Consultation and public participation

This chapter covers the requirements for consulting the public.

- 10.1 Consultation serves to inform the public (and other interested bodies) so that they can make informed comments to the regulator, allowing the regulator to make better decisions.
- 10.2 Regulators must take into consideration any representations made by consultees during the period stipulated for the consultation.

Consulting the public

- 10.3 The EPR require consultation of the public on some permit applications but do not prescribe the methods of consultation. This allows proportionate and flexible approaches to public participation to be developed by the regulators.
- 10.4 The meaning of “public consultee” is given in paragraph 1 of Part 1 of Schedule 5 to the EPR and includes anyone whom the regulator considers is, or is likely to be affected by, or has an interest in the application.
- 10.5 Public participation is provided for where there is an application for an environmental permit (see paragraph 5 of Part 1 of Schedule 5). This requirement to consult does not apply to permit applications for:
- mobile plant;
 - radioactive substances activities involving mobile radioactive apparatus;
 - standard facilities;
 - certain small Part B installations;
 - a mining waste operation not involving a mining waste facility to which Article 7 of the Mining Waste Directive applies⁶⁷;
 - certain stand-alone flood risk activities⁶⁸;
 - medium combustion plant; and
 - specified generators⁶⁹.

⁶⁷ Article 8 of the Mining Waste Directive requires public participation in relation to mining waste facilities requiring a permit under Article 7.

⁶⁸ Consultation is not required on an application for a permit for a stand-alone flood risk activity which is not likely to have a significant adverse effect on the environment; or for which a consultation has been carried out under separate legislation in which the potential environmental impact of that activity has been addressed.

- 10.6 Mobile plant and radioactive substances activities that involve mobile radioactive apparatus can operate at different locations and therefore local involvement cannot be meaningfully provided at the application stage. The permitting requirements for standard rules have been set out above (see chapter 8 on [Standard Rules Permits](#)). These require that consultation takes place on the production (and review) of the rules rather than on individual applications. Public consultation is not required for applications for small waste oil burners, dry cleaners and some Part B activities associated with petrol unloading and motor vehicle refuelling (see paragraph 5(4) of Part 1 of Schedule 5). For mining waste operations, public participation is only required where the Mining Waste Directive requires it⁷⁰.
- 10.7 Substantial changes to Part A installations must be consulted on (see the Guidance on Part A installations⁷¹). The requirement to consult on a substantial change applies both to applications for a variation by the operator and variations initiated by the regulator (see paragraph 5(2)(a) and 5(3)(a) of Part 1 of Schedule 5). There must also be consultation if the regulator proposes to grant a derogation for a Part A installation under Article 15(4) of the Industrial Emissions Directive⁷².
- 10.8 The regulator may decide that other variations to environmental permits should also be subject to public consultation (see paragraph 5(2)(b) and 5(3)(b) of Part 1 of Schedule 5).
- 10.9 Any information that is to be excluded from the public register in the interests of national security or because it is commercially or industrially confidential (see chapter 14 on [Public registers and information](#)) must not form part of the public consultation.

The Environment Agency and Natural Resources Wales's public participation statements

- 10.10 The Environment Agency and Natural Resources Wales must prepare a statement of their policies on Public Participation (regulation 60)⁷³. These

⁶⁹ In the case of medium combustion plant and specified generators, consultation is required on the permit application where the regulator determines that the operation of the regulated facility may have significant negative effects on human beings or the environment.

⁷⁰ See Chapter 5 of the Mining Waste Directive Guidance. Available at: <https://www.gov.uk/government/publications/environmental-permitting-guidance-the-mining-waste-directive>.

⁷¹ Available at <https://www.gov.uk/government/publications/environmental-permitting-regulations-guidance-on-part-a-installations>.

⁷² The operation of this derogation is explained in detail in the Part A Guidance.

⁷³ For England see: <https://www.gov.uk/government/publications/environmental-permits-when-and-how-we-consult>. For Wales, see: <https://naturalresources.wales/about-us/what-we-do/how-we->

policies must relate to each body's duties in relation to determining applications for permits and permit variations, and making or revising standard rules.

- 10.11 In preparing or revising the statement the Environment Agency and Natural Resources Wales must consult those people they consider are, or are likely to be affected by, or who have an interest in the statement. This consultation will be in accordance with the government's consultation principles⁷⁴. The Environment Agency and Natural Resources Wales must keep their statements under review, revise them when they consider it necessary, and publish any revised version.

[regulate-you/environmental-permitting-how-we-work-together/?lang=en](https://www.gov.uk/government/publications/environmental-permitting-general-guidance-manual-on-policy-and-procedures-for-a2-and-b-installations). For local authority consultation see: <https://www.gov.uk/government/publications/environmental-permitting-general-guidance-manual-on-policy-and-procedures-for-a2-and-b-installations>.

⁷⁴ See: <https://www.gov.uk/government/publications/consultation-principles-guidance>.

11. Compliance assessment, enforcement and review

This chapter describes the powers and duties of the regulator (and the operator) in ensuring compliance with the regulations and permit conditions.

Compliance assessment

Risk-based compliance assessment

11.1 Risk-based compliance assessment should include:

- targeting those facilities that:
 - pose the greatest risk to the environment or human health;
 - have poorer standards of operation;
 - are failing to comply with the terms and conditions of the permit; or
 - are having a greater adverse impact;
- reducing the regulatory burden on operators whose standard of operations are consistently high; and
- taking into account the different stages in the lifetime of a facility.

11.2 The Environment Agency and Natural Resources Wales should maintain guidance on a risk-based approach to compliance assessment⁷⁵. This should take into account the operator's management of the facility.

Methods of compliance assessment

11.3 The operator is responsible for ensuring that its regulated facility does not cause pollution of the environment and harm to human health. Checking compliance with the terms and conditions of the permit is the principal way in which the operator's performance in relation to that responsibility should be assessed. In addition, the regulator should also audit the operator's systems for the management and supervision of the facility.

⁷⁵ For England, see: Hyperlink should now be <https://www.gov.uk/government/publications/assessing-and-scoring-environmental-permit-compliance>. For Wales, see: <https://naturalresourceswales.gov.uk/about-us/what-we-do/how-we-regulate-you/how-we-assess-business-compliance/?lang=en>.

- 11.4 The EPR place a duty on regulators to undertake appropriate periodic inspections of regulated facilities (see regulation 34(2))⁷⁶. There is also a duty on the exemption registration authority (see chapter 15 on [Exempt facilities](#)) to carry out periodic inspections of exempt waste operations (see paragraph 18 of Schedule 2).
- 11.5 This inspection process can include reviewing information from the operator as well as carrying out independent monitoring, site inspections, in-depth audits and other compliance-related work.
- 11.6 In its procedures for the EPR regime the regulator should have regard to the Recommendation of the European Parliament and of the Council (2001/331/EC) of 4 April 2001 on the minimum criteria for environmental inspection⁷⁷.
- 11.7 Operators may also have significant responsibility for monitoring under environmental permits. The permit conditions may require operators not just to provide basic data (for example, the actual results from monitoring equipment), but also to demonstrate whether they are meeting the conditions of the permit.

Enforcement

Enforcement notices

- 11.8 Regulation 36 allows the regulator to serve an enforcement notice if it believes an operator has contravened, is contravening, or is likely to contravene any permit conditions.
- 11.9 Enforcement notices will specify the steps required to remedy the problem and the timescale in which they must be taken. Enforcement notices may include steps to remedy the effects of any harm and to bring a regulated facility back into compliance.

Suspension notices

- 11.10 The regulator can serve a suspension notice on the operator if the operation of a regulated facility involves a risk of serious pollution (see regulation 37(2)); or if the way in which the regulated facility is being operated both contravenes a permit condition and involves a risk of pollution (see regulation 37(5)).

⁷⁶ Part A installations are subject to minimum inspection requirements as a result of Article 23 of the Industrial Emissions Directive, as described in the Part A Guidance.

⁷⁷ See: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32001H0331>

- 11.11 This means that, where the operator has contravened a permit condition, there has to be a risk of pollution, but not of serious pollution.
- 11.12 In the case of a flood risk activity, the regulator may also serve a suspension notice where it considers there is a risk of serious flooding, serious detrimental impact on drainage, or serious harm to the environment (see regulation 37(2)); and where breach of a permit conditions involves a risk of flooding, detrimental impact on drainage or harm to the environment (see regulation 37(5)).
- 11.13 A suspension notice may also be served by a local authority regulator for non-payment of a charge. Guidance on this is contained in the Manual.
- 11.14 The suspension notice must describe the nature of the risk of pollution and the actions necessary to remove that risk. The notice must specify the deadline for taking actions.
- 11.15 When the regulator serves a suspension notice, the permit ceases to authorise the operation of the entire regulated facility or specified activities depending upon what is specified in the notice.
- 11.16 A suspension notice should allow activities to continue unless their cessation is necessary to address the risk of pollution. While the suspension notice is in force, additional steps may need to be taken in relation to any activities that are allowed to continue. Where this is the case the suspension notice must set out these additional steps.
- 11.17 When the operator has taken the remedial steps required by the notice, the regulator must withdraw the notice.

Prosecutions

- 11.18 If an operator has committed a criminal offence under the EPR, regulators should consider a prosecution. Conviction in a magistrates' court carries an unlimited fine and up to twelve months' imprisonment⁷⁸ for the most serious offences under the EPR. Conviction in the Crown court may lead to an unlimited fine and imprisonment for up to five years.
- 11.19 Regulators have clear guidance on the factors to take into account when deciding whether to prosecute. Regulators should take account of the Regulators' Code⁷⁹ and the Code for Crown Prosecutors⁸⁰. These contain

⁷⁸ See regulation 39(3) – pending the commencement of section 154(1) of the Criminal Justice Act 2003, the maximum term of imprisonment on summary conviction is 6 months.

⁷⁹ See: <https://www.gov.uk/government/publications/regulators-code>.

important safeguards for operators to ensure that the enforcement action taken by regulators is proportionate to the risks posed to the environment and to the seriousness of any breach of the law.

- 11.20 The Environment Agency and Natural Resources Wales's enforcement and sanctions policies⁸¹ set out a range of possible enforcement actions. These range from warnings to formal cautions to prosecution depending upon the facts. Individual local authorities should also have enforcement policies.
- 11.21 The EPR also contain another important safeguard for operators, the emergency defence (see regulation 40(1)). This provides a defence where the operator shows that the acts are done in an emergency to avoid danger to human health, all reasonable steps are taken to minimise pollution and the regulator is informed promptly. Emergencies ought to be relatively rare occurrences.
- 11.22 Where an EPR regulator and another enforcement body both have the power to prosecute in respect of the same subject matter, they should endeavour to liaise to avoid inconsistencies and make sure that any proceedings are for the most appropriate offence.
- 11.23 The regulator must place details of any conviction or formal caution on the public register. This requirement does not override the ROA 1974 regarding spent conditions, and regulators must take care to remove relevant entries at the appropriate time⁸². Formal cautions must be removed from the register after 5 years has lapsed. It is important that the regulators have the systems in place to ensure that this is done.

Enforcement undertakings

- 11.24 Regulation 39(6) and Schedule 26 provide that the Environment Agency⁸³ may, where it has reasonable grounds to suspect that a specified offence⁸⁴ under the EPR has been committed, accept an enforcement undertaking instead of, for example, bringing criminal proceedings.

⁸⁰ See: <https://www.cps.gov.uk/sites/default/files/documents/publications/Code-for-Crown-Prosecutors-October-2018.pdf>.

⁸¹ For England, see: <https://www.gov.uk/government/publications/environment-agency-enforcement-and-sanctions-policy>. For Wales, see: <https://naturalresources.wales/about-us/what-we-do/how-we-regulate-you/regulatory-responsibilities/?lang=en>.

⁸² See: <https://www.nacro.org.uk/resettlement-advice-service/support-for-individuals/disclosing-criminal-records/rehabilitation-offenders-act/>.

⁸³ In relation to England only.

⁸⁴ See paragraph 1(1) of Schedule 26.

- 11.25 An “enforcement undertaking” is a written undertaking, made by the person who has committed the offence, to take specified actions within a specified period (see paragraph 1(3) of Schedule 26). If the Environment Agency accepts the undertaking, it cannot then prosecute the offence, so long as the operator complies with the undertaking (see paragraph 3 of Schedule 26).
- 11.26 The Environment Agency publishes its procedure for entering into an enforcement undertaking⁸⁵. It also publishes details of the undertakings it accepts⁸⁶.

Revocation

- 11.27 The regulator can revoke a permit, in whole or in part, by serving a “revocation notice” (see regulation 22). The regulator may use revocation whenever appropriate. Revocation may be appropriate where exhaustive use of other enforcement tools has failed to protect the environment properly, where the permit holder is no longer the operator (for example, where a transfer application should have been made but has not been) or where the operator is considered not to be competent (see Chapter 9 on [Operator competence](#)). Unlike other types of notice, if a revocation notice is appealed the revocation does not take effect until the appeal is determined or withdrawn (see regulation 31(7)(b)).
- 11.28 The permit ceases to authorise the operation of a regulated facility, facilities or part of a facility to the extent specified in the revocation notice. Any post-operation requirements, such as site restoration, may remain in force (see regulation 22).
- 11.29 The revocation notice must specify any additional steps the operator must take to avoid any pollution risk or to return the site to a satisfactory state. Regulators may enforce the restoration requirements by issuing enforcement notices and, if necessary, they can use their powers to remedy harm and recover costs (see the section on [Remediation](#)).

Remediation⁸⁷

- 11.30 If the operation of a regulated or exempt facility gives rise to a risk of serious pollution, a regulator may arrange for the risk to be removed (see regulation

⁸⁵ See: <https://www.gov.uk/government/publications/environment-agency-enforcement-and-sanctions-policy/annex-1-res-act-the-environment-agencys-approach-to-applying-civil-sanctions-and-accepting-enforcement-undertakings>.

⁸⁶ See: <https://www.gov.uk/government/publications/the-environment-agencys-use-of-civil-sanctions>.

⁸⁷ Special arrangements apply in the case of remediation of radioactive contamination on a nuclear site: see the Nuclear Installations Act 1965 and associated guidance.

57). If an operator commits an offence that causes pollution, the regulator may arrange for steps to be taken to remedy pollution at the operator's expense.

- 11.31 If the operation of a regulated or exempt flood risk activity gives rise to a risk of serious flooding, serious detrimental impact on drainage or serious harm to the environment, the regulator may arrange for the risk to be removed at the operator's expense under regulation 58.
- 11.32 In the case of an emergency relating to a flood risk activity, the regulator may serve an emergency works notice requiring the operator, owner or person responsible for the activity to take action, such as remove or modify a structure, carry on the activity or take remedial action on flooding/risk to flooding, harm/risk of harm to the environment or detrimental impact on drainage.
- 11.33 If the regulator considers that an unauthorised flood risk activity is being or has been carried on, it may serve a remediation notice on the operator and certain other categories of people (as set out in paragraph 8(1) and (4) of Part 1 of Schedule 25). The regulator may also take steps to remove, alter or pull down any works carried out pursuant to an unauthorised flood risk activity at the expense of the person responsible for that activity.
- 11.34 Site protection must be addressed throughout the life of a permit. The requirement for restoration of the site at closure cannot justify letting the operator contaminate the site during the operation of the facility. It will not usually be desirable to wait until the regulated facility ceases to operate before removing any contamination or remedying any harm at the site.
- 11.35 Where an incident such as a spillage occurs, the regulator should be notified and the operator should take all practical steps to address any contamination at the time of the incident. A record of the steps taken to return the site to a satisfactory state should be made available to the regulator.

Enforcement against the Crown

- 11.36 The Crown is bound by the EPR, as are people who work for it. However, the Crown is not criminally liable, even if it contravenes the EPR. The regulator cannot take proceedings to the High Court if the Crown does not comply with an enforcement or suspension notice. However, the regulator may apply to the High Court to have something the Crown has done (or failed to do) declared unlawful if it contravenes the EPR. These provisions are set out in

Schedule 4. Special provisions apply in the case of radioactive substances activities (see the Guidance on Radioactive Substances Regulation⁸⁸).

Ongoing review

Variation of conditions by the regulator

- 11.37 The regulator may vary permit conditions at any time, even if the operator has not requested this (see regulation 20), except in certain circumstances in the case of a stand-alone water discharge activity⁸⁹ or a stand-alone flood risk activity⁹⁰. It is most likely to do this in response to the findings of a permit review (see paragraphs 11.41 to 11.42), because additional conditions are needed to deal with new matters or where compliance assessment has identified a need to vary the conditions.
- 11.38 A variation may however be necessary for another reason, such as a new environmental quality standard (EQS). A local authority regulator will also need to vary the permit conditions on releases to water from a Part A installation regulated by the authority if the Environment Agency or Natural Resources Wales requests this under regulation 59 (see paragraph 4.7).
- 11.39 Where the regulator decides to vary permit conditions, it will serve a variation notice and may require the operator to pay a fee. (see paragraph 8 of Part 1 of Schedule 5).
- 11.40 The regulator will consult on a proposed variation notice, in much the same way as when the operator applies for a variation. Regulators can assess competence at any time and if not satisfied can revoke the permit. In particular, if the operator of a relevant waste operation fails to comply with an approved competence scheme, the regulator may revoke the permit.

Permit reviews

- 11.41 Regulators are required to review permits periodically (see regulation 34(1)). Permit reviews are required to check whether permit conditions continue to reflect appropriate standards and remain adequate in light of experience and new knowledge. Reviews should guard against permits becoming obsolete as techniques develop.

⁸⁸ See: <https://www.gov.uk/government/publications/radioactive-substance-regulations-rsr-guidance>.

⁸⁹ See the Guidance on Water Discharge Activities.

⁹⁰ Guidance on when and how the Environment Agency will use its powers under regulation 20(7) can be found at www.gov.uk/guidance/flood-risk-activities-environmental-permits#complying-with-your-permit.

11.42 Regulators should review permit conditions in the light of new information on environmental effects, best available techniques or other relevant issues:

- if a review shows that new or varied permit conditions are needed, the regulator determines them by the regulator-initiated variation procedures above ([Variation of conditions by the regulator](#));
- the EPR do not specify when regulators should carry out permit reviews, except in relation to Part A installations under Article 21(3) of the Industrial Emissions Directive⁹¹. The Environment Agency and Natural Resources Wales will determine when to carry out reviews, having regard to their experience of regulating the various sectors. Local authorities may be guided in making their decisions by advice from the Secretary of State. Regulators should inform operators at the start of a review so that they are able to input into the review process.

⁹¹ Article 21(3) of the Industrial Emissions Directive requires permit reviews after publication of decisions on BAT Conclusions, as further described in the Part A Guidance.

12. Charging

This chapter describes the system of charging for environmental permits.

12.1 Two separate but related sets of charging schemes apply to regulated facilities:

- for facilities where the Environment Agency or Natural Resources Wales is the regulator, under section 41 of the Environment Act 1995 and approved by the Secretary of State⁹²; and
- for facilities where the local authority is the regulator, set by the Secretary of State and the Welsh Ministers under regulation 66⁹³.

12.2 Within this overall arrangement, different charges are payable at different regulatory stages. They will also vary across sectors.

Charges for applications

12.3 Applications will normally incur charges. Where an operator must pay a charge when submitting an application, the application will not be duly made until the regulator receives the charge.

12.4 Regulators must allow for different charges for different categories of variation application. This is to allow an approach that can reflect the:

- amount of effort that the regulator puts into determining the application;
- the potential environmental impact or risk; and
- the extent of public participation.

Subsistence

12.5 Operators must pay subsistence charges to support the regulator's ongoing costs: for example, for checking monitoring data or assessing compliance. If an operator fails to pay a subsistence charge, the regulator may revoke the permit.

⁹² For England, see: <https://www.gov.uk/government/publications/environmental-permitting-charging-scheme-2019>. For Wales, see: <https://naturalresources.wales/about-us/what-we-do/how-we-regulate-you/our-charges/?lang=en>.

⁹³ See: <https://www.gov.uk/local-authority-environmental-permit>.

13. Appeals

This chapter sets out when an appeal can be made and the procedures for making appeals.

Appeal procedures

When can an appeal be made?

13.1 A person may appeal (see regulation 31) when:

- the regulator has refused their application (for the grant, variation, transfer or surrender of a permit)⁹⁴;
- they disagree with any of the conditions imposed by the regulator where the regulator has varied the permit: either on its own initiative; or to reflect a partial transfer, partial revocation or partial surrender of the permit;
- an application is deemed to have been refused (see paragraph 15(1) of Part 1 of Schedule 5);
- the regulator has decided not to authorise the closure procedure mentioned in Article 13 of the Landfill Directive or Article 12 of the Mining Waste Directive; or
- the regulator has served an enforcement, revocation, suspension or prohibition notice, a landfill or mining waste facility closure notice, or a flood risk activity emergency works notice, notice of intent or remediation notice on them⁹⁵.

13.2 A person may appeal under regulation 53 where the regulator has determined that certain information in relation to their application or permit must be included on the public register.

13.3 A person may not however appeal where:

- the regulator's decision implements a statutory direction by the Secretary of State or Welsh Ministers;

⁹⁴ This includes where the regulator deems an application withdrawn under paragraph 4(2) of Part 1 of Schedule 5.

⁹⁵ But no right of appeal exists against a revocation or a suspension notice served because of a failure by the operator to pay a subsistence charge for its permit.

- the regulator has refused an application for the grant or variation of a permit in relation to a Category A mining waste facility that is an existing mining waste facility, under paragraph 14(2) of Schedule 20; or
 - a local authority issues a revocation or suspension notice because of a failure to pay subsistence charges.
- 13.4 Time limits for making appeals vary according to the basis of the appeal (see paragraph 3 of Schedule 6). The Secretary of State or the Welsh Ministers have the power to extend some of the limits but will do so only in the most compelling circumstances.
- 13.5 An appeal must be made:
- before a revocation notice takes effect;
 - no later than 15 working days after the date of a notice that an application is deemed to be withdrawn (see paragraph 4(2) of Part 1 of Schedule 5);
 - within two months from the date of an enforcement, regulator-initiated variation, suspension, mining waste facility closure or landfill closure notice, or a flood risk activity remediation notice;
 - no later than 21 days after the date of a prohibition notice; and
 - in all other cases within six months of the date of the decision or deemed decision.
- 13.6 An appeal under regulation 53 must be made no later than 15 working days from the date of a notice that certain information must be included on the public register.

To whom should an appeal be made?

- 13.7 Appeals must be made to the Secretary of State or the Welsh Ministers (as appropriate).
- 13.8 The Secretary of State and the Welsh Ministers may appoint another person to determine appeals on their behalf⁹⁶. The Planning Inspectorate (PINS) is generally appointed to determine appeals under the EPR. The Secretary of State or the Welsh Ministers can exceptionally recover any appeal, but this is likely to be done only if the appeal meets particular criteria⁹⁷.

⁹⁶ Section 114 of the Environment Act 1995

⁹⁷ See Appendix 2 to the Planning Inspectorate's environmental appeals guidance: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/792726/EP_appeal_guide_March_2019.pdf.

- 13.9 The Planning Inspectorate's environmental permit appeals guidance⁹⁸ explains the procedure. A failure to follow that procedure may lead to adverse costs implications.

While the appeal is being considered

- 13.10 If a person appeals against a revocation notice, the revocation does not take effect until the appeal has been determined or withdrawn (see regulation 31(7)(b)), (except in certain circumstances in relation to stand-alone water discharge activities⁹⁹).
- 13.11 If the appeal is against a permit condition, or a variation notice, enforcement notice, suspension notice, prohibition notice, landfill closure notice, mining waste facility closure notice, flood risk activity emergency works notice, flood risk activity notice of intent or flood risk activity remediation notice, then the notice or condition must be complied with until the appointed person, or the Secretary of State or the Welsh Ministers has determined the appeal (see regulation 31(7)(a)), except in certain circumstances in relation to stand-alone water discharge activities (see regulation 31(9)).

Who should be informed that an appeal has been made?

- 13.12 Following receipt of the notice of appeal (other than against a decision on commercial confidentiality), the regulator should contact anyone it thinks may be affected by, or has a particular interest in the matter (see paragraph 4 of Schedule 6). The regulator should ensure that the relevant people are informed as to the nature of the appeal and are made aware that representations can be made in writing to the appointed person or the Secretary of State or the Welsh Ministers.
- 13.13 The regulator should tell the appointed person or the Secretary of State or the Welsh Ministers who it has notified of the appeal and when (see paragraph 4(3) of Schedule 6).

Conducting an appeal

- 13.14 An appeal may be conducted by written representations, or through a hearing or inquiry under the control of the Secretary of State's or the Welsh Ministers'

⁹⁸ See:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/831106/EP_appeal_guide_September_2019.pdf.

⁹⁹ See the Guidance on Water Discharge Activities:

<https://www.gov.uk/government/publications/environmental-permitting-guidance-water-discharge-activities>.

appointee. All parties have the right to request a hearing and one will also be held if the Secretary of State or the Welsh Ministers or their appointee decides one is necessary. Each appeal procedure will be conducted in the spirit of the rules and Regulations for planning appeals¹⁰⁰.

Withdrawing an appeal

13.15 An appellant may withdraw an appeal at any time by giving notice in writing to the Secretary of State's or the Welsh Ministers' appointee, copied to the regulator.

13.16 The Secretary of State's or the Welsh Ministers' appointee should tell anyone with an interest in the appeal that it has been withdrawn.

13.17 The regulator should inform all the people it notified of the appeal (see paragraph 4(4) of Schedule 6).

Costs

13.18 The appellant and regulator will normally be expected to pay their own expenses during an appeal. Where a hearing or inquiry is held, however, either the appellant or the regulator can apply for costs.

13.19 Following an application for costs, the appointed person or the Secretary of State in England will act in the spirit of Circular 03/09¹⁰¹. In Wales the Welsh Ministers will act in the spirit of Welsh Office Circular 23/93¹⁰².

13.20 Applications for costs will only be allowed if the party claiming them can show that the other side behaved unreasonably and put them to unnecessary expense.

Appeal decisions

13.21 After the exchange of written representations has been completed or the hearing or inquiry held, the appointed person will either make a decision or

¹⁰⁰ See, in relation to England, The Town and Country Planning (Appeals) (Written Representations Procedure) (England) Regulations 2009 (SI 2009 No. 452); The Town and Country Planning (Hearings Procedure) (England) Rules 2000 (S.I. 2000 No.1626); The Town and Country Planning (Inquiries Procedure) (England) Rules 2000 (SI 2000 No.1624) and The Town and Country Planning Appeals (Determination by Inspectors) (Inquiries Procedure) (England) Rules 2000 (SI 2000 No.1625).

¹⁰¹ Costs Awards in Appeals and other Planning Proceedings.

¹⁰² Awards of Costs incurred in Planning and other (including compulsory purchase order) proceedings.

report their conclusions and recommendations to the Secretary of State or the Welsh Ministers for determination.

- 13.22 The appointed person or the Secretary of State or the Welsh Ministers may dismiss the appeal or may uphold the appeal in total or in part. They may quash or vary any notice. They may also direct the regulator on what permit conditions to impose.
- 13.23 If the appeal is dismissed, the original decision by the regulator continues in force. Where the original decision has been ineffective during the appeal (i.e. for a revocation notice), the regulator's decision becomes effective from the end of the day on which the appeal is dismissed or withdrawn.
- 13.24 If the appeal is upheld, either in total or in part, the regulator has a duty to give effect to that decision. Consequently, where the regulator grants a permit or issues a variation notice following an appeal, such a notice should include reference to the fact that the decision is giving effect to a determination by the appointed person or the Secretary of State or the Welsh Ministers.
- 13.25 The regulator should take into account relevant appeal decisions when reviewing and developing the conditions to be attached to permits.
- 13.26 Appeal decisions may be challenged by judicial review on a point of law.

14. Public registers and information

This chapter explains regulators' duty to maintain public registers for environmental permits and refers to other sources of information on environmental permitting.

- 14.1 Information relevant to environmental permitting is available through public registers and under the Freedom of Information Act (FOIA)¹⁰³ and the Environmental Information Regulations (EIR)¹⁰⁴.
- 14.2 In order to ensure that information is readily and easily available for the purposes of public participation under the EPR, regulators must maintain public registers of specified information on environmental permitting¹⁰⁵.
- 14.3 Under the FOIA, public authorities are required to maintain publication schemes and publish information they hold in accordance with those schemes. Under both FOIA and EIR there is a statutory duty to respond to requests for information and provide advice and assistance.
- 14.4 The following sections cover the specific requirements for public registers and the relevant aspects of other information legislation.

Public registers

Duty to maintain public registers

- 14.5 Regulators must maintain registers containing information on all the regulated facilities for which they are responsible (see regulation 46).
- 14.6 The registers must be available for inspection by the public free of charge at all reasonable times (regulation 46(6)(a)). Copies of any entry on a register must be available to any member of the public on payment of a reasonable charge (regulation 46(6)(b)). Where information is excluded from the register on grounds of confidentiality, a statement must be placed on the register indicating the existence of that information (regulation 46(5)).

¹⁰³ Sections 19-20 Freedom of Information Act 2000.

¹⁰⁴ R 4 Environmental Information Regulations 2004 (SI 2004/3391).

¹⁰⁵ For England, see: <https://www.gov.uk/guidance/access-the-public-register-for-environmental-information>. For Wales, see: <https://naturalresourceswales.gov.uk/permits-and-permissions/check-for-a-permit-licence-or-exemption/?lang=en>.

Form and content of registers

- 14.7 The register can be in any form (regulation 46(7)), but should allow proper public access. Regulators generally may choose¹⁰⁶, for example, to maintain computerised or internet-based registers. If they do, they should make sure that they provide help for members of the public who are unfamiliar with the technology.
- 14.8 Registers must contain the information set out in paragraph 1 of Schedule 27. This includes copies of permits, applications, enforcement notices and monitoring information.
- 14.9 The regulator is not required to place information relating to criminal proceedings on the register while the proceedings are in progress (see regulation 46(2)).

Withdrawal of information

- 14.10 Paragraph 2 of Schedule 27 states that a regulator is not required to keep in its register any information which is no longer relevant for the purposes of public participation. This will enable the regulator to remove unnecessary information to make the register easier to consult.
- 14.11 It should be noted that although unnecessary information may have been removed from the public register, the information may still be available from the regulator either through the publication scheme or in response to information requests under the FOIA or the EIR (see the section on [Other information legislation](#)).

National security

- 14.12 No information should be included in a register if, in the opinion of the Secretary of State or the Welsh Ministers, doing so would be contrary to the interests of national security (see regulation 47).
- 14.13 Exclusion on this ground follows a determination by the Secretary of State or the Welsh Ministers. The Secretary of State or the Welsh Ministers may direct the regulator to exclude specified information, or a specified description of information from the register (see regulation 47(1)).

¹⁰⁶ Except in respect of Part A installations, for which Article 24 of the Industrial Emissions Directive prescribes use of the internet.

- 14.14 The Secretary of State or the Welsh Ministers may direct the regulator to refer a specified description of information to him/her for determination before its inclusion on the register (see regulation 47(3)).
- 14.15 The operator (or any other person, including the regulator) may notify the Secretary of State or the Welsh Ministers that, in their opinion, the inclusion of information on a register would be contrary to the interests of national security (see regulation 47(4)). The operator (or other notifying person) must let the regulator know that it has notified the Secretary of State or the Welsh Ministers. The operator must not however exclude that information from any submission to the regulator, such as a permit application. The regulator must exclude this information from the register unless or until the Secretary of State or the Welsh Ministers determines that it should be included (see regulation 47(7)).

Commercial and industrial confidentiality

- 14.16 Information may be withheld from the public register where the regulator judges that it may be commercially or industrially confidential (regulation 48). When this occurs, the regulator must place a statement on the register indicating the existence of that information. “Confidential information” is defined in regulation 2(1) as information that is commercially or industrially confidential in relation to any person.
- 14.17 The possible exclusion of information from the register can be triggered where:
- the regulator decides that the information may be commercially or industrially confidential (see regulation 51); or
 - anyone objects¹⁰⁷ to the inclusion of information on the grounds of commercial or industrial confidentiality.
- 14.18 If an operator wants information it considers confidential to be excluded from the register, it should make a request at the time the information is submitted to the regulator, whether as part of an application, as monitoring information or for any other purpose. The operator should provide clear justification for exclusion for each item it wishes to be kept from the register. It will not be enough, for example, merely to assert commercial prejudice: the operator must provide evidence that the confidentiality is provided by law to protect a legitimate economic interest.

¹⁰⁷ The objector will normally be the operator, but could be, for example, someone who supplies information to the operator. Whoever objects is referred to in Part 5 of the EPR as “the information subject”, but for simplicity in the rest of this chapter it is assumed that it will be the operator.

- 14.19 The amount of information requested to be excluded from the register should be kept to the minimum necessary to safeguard the operator's commercial advantage.
- 14.20 The operator should make sure that any information which it considers confidential is readily identifiable. It may assist the regulator if the information the operator wishes to be excluded is submitted in a way which will allow it to be easily removed should the claim be granted: for example on separate pages, marked "claimed confidential".
- 14.21 The regulator must give notice of its decision on whether information should be withheld from the register within 20 working days (or such longer period as is agreed with the operator) of, the date:
- when the operator requests information to be excluded under regulation 48(1)(b);
 - when the operator objects to information being included after a notification by the regulator under regulation 49(1); or
 - 15 working days from when the regulation 49(1) notice is given if, by then, no response has been received to the 49(1) notice.
- 14.22 The regulator may determine requests only on the basis of the information provided to it. If the information provided does not clearly demonstrate that information should be legitimately protected, the regulator must determine that it is not confidential. The regulator must always determine that information relating to "emissions" must be included on the register (regulation 51(3)).
- 14.23 In reaching its decision, the regulator must apply the legal criteria and:
- take account of any reasons given by the operator in any objection notice;
 - apply a presumption in favour of putting the information on the register; and
 - exclude only information that is commercial or industrial information; its confidentiality is provided by law to protect a legitimate economic interest; and taking account all circumstances, the public interest in maintaining the confidentiality of the information outweighs the public interest in including it on the register.
- 14.24 Other information may be withheld if it cannot reasonably be separated for the purposes of inclusion on the register (see regulation 51(4)).
- 14.25 If a determination is made regarding the confidentiality of monitoring information and the information is to be withheld from the public register (see

paragraph 1(5) of Schedule 27), the regulator must place a statement in the register indicating whether the operator has complied with permit conditions.

- 14.26 If the regulator fails to notify the operator of its determination within the 20 working days (or agreed longer period) referred to above, the operator may write to the regulator confirming that the request has not been determined. This constitutes a written notice of a deemed decision by the regulator to place the information on the register; and a right of appeal against this deemed decision. The operator then has 15 working days from the date of this notice of deemed decision to appeal.
- 14.27 At this point, whether the regulator has actively determined that information is not confidential, or the operator has notified the regulator of its deemed determination, the regulator must keep the information from the register for a further 15 working days. This is the period within which an appeal may be made to the Secretary of State or the Welsh Ministers (regulation 53). If no appeal has been made within that time, the regulator must place the information on the register.
- 14.28 An appeal against the inclusion of information on the public register must be made to the Secretary of State or the Welsh Ministers (see chapter 13 on [Appeals](#)).
- 14.29 If an appeal is made to the Secretary of State or the Welsh Ministers, the information in question must not be placed on the public register before the appeal is decided (regulation 53(3)).
- 14.30 The regulator may grant confidentiality for four years or specify a shorter period when it makes the original decision (see regulation 55(1)).
- 14.31 If it wishes to keep the information off the register, the operator must re-apply for commercial confidentiality before the end of the four years (or shorter period). If the operator fails to apply, the regulator must place all previously commercially confidential information on the public register.
- 14.32 If practicable, the regulator should write and inform operators that the end of a time period is approaching, allowing sufficient time for re-application. Operators should not, however, rely on the regulator providing this service.

Other information legislation

- 14.33 FOIA and EIR provide a system of fully enforceable rights of access to information held by public authorities.

- 14.34 The FOIA gives a statutory right of access to all types of recorded information and data held by public authorities on request. It also places a duty on public authorities to make information available pro-actively through a publication scheme.
- 14.35 The EIR provide extra rights of access to environmental information, with a wide definition of what is environmental. Under the EIR there is duty to progressively make information available to the public by electronic means, organising information with a view to the active and systematic dissemination of the information to the public. Where an information request is for environmental information, there is an exemption under the FOIA so that the EIR apply. The EIR will apply to most of the information held by regulators.
- 14.36 There are several “exemptions” under the FOIA and “exceptions” under the EIR from rights of access (for example personal data and commercial confidentiality) that balance openness with confidentiality and privacy.
- 14.37 Further information on access to information is provided by the Information Commissioner’s Office¹⁰⁸.

¹⁰⁸ See: <https://ico.org.uk/for-organisations/guide-to-the-environmental-information-regulations/>.

15. Exempt facilities

This chapter describes the general requirements for exempt facilities and the requirements for registering exemptions and keeping records. For further information, see the guidance on Exempt Waste Operations. This chapter does not apply to radioactive substances activities. Guidance on exempt radioactive substances activities is provided in the guidance on the scope of and exemptions from the Radioactive Substances Legislation in the UK¹⁰⁹.

- 15.1 Some facilities that pose a sufficiently low risk can be exempt from the need to hold a permit. This can happen, however, only where no applicable European Directive requires a permit. A waste operation¹¹⁰, water discharge, groundwater or flood risk activity must meet certain criteria in order to be exempt from the need for an environmental permit.
- 15.2 A facility can be exempt only if it meets the general requirements of Schedule 2.
- 15.3 The compliance effort for exempt facilities should follow the same principles as for regulated facilities (see chapter 11 on [Compliance Assessment, Enforcement and Review](#)).

Registration of exempt facilities

- 15.4 A waste operation can be exempt from the need to hold a permit only where the operation, and an establishment or undertaking in relation to that operation have been registered (see paragraph 4(1) of Schedule 2). In the case of a water discharge activity or groundwater activity either the occupier or operator must register, depending on the description of activity (see paragraphs 5(b) and 6(b) of Schedule 2 in relation to water discharge activities; and paragraphs 7(b) and 8(b) in relation to groundwater activities in Wales and England (respectively)). In the case of a flood risk activity, the operator and the flood risk activity must be registered (see paragraph 9 of Schedule 2).
- 15.5 The exemption registration authority for each type of exempt facility is identified in see paragraph 2 of Schedule 2.

¹⁰⁹ <https://www.gov.uk/government/publications/guidance-on-the-scope-of-and-exemptions-from-the-radioactive-substances-legislation-in-the-uk>.

¹¹⁰ See: <https://www.gov.uk/government/publications/environmental-permitting-guidance-exempt-waste-operations>.

- 15.6 The regulator is required to maintain a register of exempt facilities and relevant particulars (see paragraph 11 of Schedule 2). This is required only where the registration authority has been notified of the facility. Entries must be removed from the register in certain circumstances (see paragraph 12 of Schedule 2) including where the exempt facility is no longer in operation or has ceased to be an exempt facility. The Secretary of State or the Welsh Ministers may direct the exemption registration authority that information must be excluded from the register on the grounds of national security (see paragraph 13 of Schedule 2).

Annex 1: Connections with other legislation

A1.1 Regulated facilities will often need to comply with other relevant environmental legislation, as well as the EPR. Some of this legislation should be addressed by the environmental permit (through permit conditions and/or the decisions of the regulator). This Annex explains the main connections between EPR and legislation relating to: the regulators (paragraphs A.1.2 to A.1.3); other relevant regimes (paragraphs A.1.4 to A.1.21); and permitting considerations (paragraphs A.1.22 to A.1.35), but it should not be regarded as covering all possible environmental legislation applicable in individual cases.

Regulators

Environment Agency

A1.2 The Environment Act 1995 established the Environment Agency and conferred upon it various duties and powers. The most notable sections in relation to EPR are:

- Section 4, stating the principal aim and objectives of the Environment Agency in terms of environment protection and contributing to sustainable development¹¹¹;
- Section 39, giving the Environment Agency the general duty to have regard to costs and benefits in exercising its powers;
- Sections 41 to 43 concerning financial charging; and
- Sections 108 to 112, relevant to enforcement and prosecution.

Natural Resources Wales

A1.3 The Natural Resources Body for Wales (Establishment) Order 2012 established a new statutory body, usually known as Natural Resources Wales, and provided for its purpose, membership, procedure, financial governance and initial functions. The Natural Resources Body for Wales (Functions) Order 2013 makes further provision about the Body, including provision about the modification and transfer of environmental functions to the Body.

Other relevant regimes

Contaminated Land

A1.4 A local authority is responsible for the determination of “contaminated land” in its area under Part IIA of the Environmental Protection Act 1990¹¹².

¹¹¹ Statutory guidance from Ministers to the Environment Agency under section 4 of the Environment Act 1995 was published most recently in December 2002 and is available at <http://archive.defra.gov.uk/corporate/about/partners/ea/sustainable.htm#ep>.

- A1.5 A local authority with a regulated facility in its area will normally receive a copy of the permit application for that facility, either as the regulator or as a consultee. The information in the application may suggest to the local authority that the site might meet the statutory definition of contaminated land under Part IIA and that further investigation is necessary to establish if this is the case.
- A1.6 If an operator believes that a site may meet the statutory definition of contaminated land, it may wish to discuss this with the local authority.
- A1.7 If the regulator finds that the site of a regulated facility is polluted as a result of the regulated activities, it cannot seek remedial action under Part IIA if enforcement action under the EPR is possible.
- A1.8 After an environmental permit has been surrendered the regulator may consider further remediation under Part IIA. EPR requirements for site restoration will usually be of a higher standard than that required under Part IIA. However, if the site is polluted with material from operations pre-dating the reference point for contamination, then remediation under the Part IIA regime is possible.
- A1.9 In 2006 the Part IIA regime was extended to include radioactive contaminated land in England and Wales, and a further modification came into force in December 2007. It does not however apply to land contaminated with radioactivity on nuclear-licensed sites. The Office for Nuclear Regulation (ONR) has powers under the Nuclear Industry Act 1965 to regulate land contaminated with radioactivity within the boundaries of nuclear licensed sites.

Control of Major Accident Hazards

- A1.10 The Control of Major Accident Hazards (COMAH) Regulations 2015¹¹³ implement Directives 96/82/EC and 2003/105/EC on the control of major accident hazards involving dangerous substances. The COMAH Regulations aim to prevent major accidents and limit their consequences for people and the environment. They set out measures which apply to establishments that hold or use specified dangerous substances, or specified generic classes of dangerous substances above qualifying quantities listed in the Directive. The competent authority for the purposes of the COMAH Regulations in England and Wales is the Health and Safety Executive (HSE) and the Environment Agency or Natural Resources Wales (as appropriate) acting jointly.
- A1.11 The COMAH Regulations, amongst other things:
- impose a duty on the operator of an establishment to take all measures necessary to prevent major accidents and limit their consequences for persons and the environment;

¹¹² See: <https://www.gov.uk/guidance/land-affected-by-contamination>.

¹¹³ SI 2015 No. 483.

- require the operator to prepare an on-site emergency plan for specified purposes and containing specified information;
- require the operator to demonstrate to the competent authority that it has taken all measures necessary to comply with the COMAH Regulations; and
- require the operator to notify major accidents to the competent authority.

Greenhouse gas emission trading

A1.12 The Greenhouse Gas Emissions Trading Scheme Regulations 2012¹¹⁴ provide the framework for a greenhouse gas emissions trading scheme for the purpose of implementing Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the EU. These Regulations control emissions of carbon dioxide from any of the activities listed in Schedule 1.

Groundwater Directive

A1.13 The Groundwater Directive (Directive 2006/118/EC) requires the setting of criteria for assessing groundwater chemical status of groundwater bodies including the establishment of threshold values; procedure for assessing chemical status of groundwater bodies; and identification of significant and sustained upward trends of pollutants. It is thus mainly concerned with the classification of groundwater bodies. It also, however, requires measures to prevent or limit the input of pollutants to groundwater. The EPR are one of the mechanisms for meeting the requirements for such measures.

Health and safety

A1.14 The Health and Safety at Work Act 1974 provides the foundations for the protection of the workforce and the general public from health and safety hazards which industrial facilities variously present. The Health and Safety Executive and local authorities enforce those safety requirements. Regulators should take those requirements into account when setting permit conditions, and both parties should in particular ensure that environmental permitting and Health and Safety requirements do not impose conflicting obligations.

A1.15 There is Health and Safety Legislation directly relevant to some mining waste operations, such as the Quarries Regulations 1999.

A1.16 Specific guidance on interfaces with HSE and the ONR in relation to radioactive substances activities is contained in the Guidance on Radioactive Substances Activities.

¹¹⁴ SI 2012/3038.

Land use planning

A1.17 The relationship between pollution control and planning is set out in the National Planning Policy Framework¹¹⁵.

A1.18 The Major Accident Off-Site Emergency Plan (Management of Waste from Extractive Industries) (England and Wales) Regulations 2009¹¹⁶ designate the appropriate emergency planning authority in respect of a Category A mining waste facility. That authority must draw up a plan which specifies the measures to be taken off-site in the event of a major accident and which meets the objectives set out in the Regulations.

Statutory nuisance

A1.19 Part III of the Environmental Protection Act 1990 is concerned with “statutory nuisances” and is regulated by local authorities. Local authorities must investigate complaints of statutory nuisance in their area and, if they establish a nuisance has been, is being or is likely to be caused, must serve an abatement notice on the person causing the nuisance. Failure to comply with an abatement notice can lead to prosecution.

A1.20 The local authority has the same duties where a nuisance is caused by a regulated facility or an exempt facility. It may not bring a prosecution, however, where action to address the nuisance may be taken by the regulator (including determining that the activity is no longer exempt and should be permitted), without the consent of the Secretary of State or Welsh Ministers (as appropriate). The local authority must nevertheless take all the steps prior to prosecution but should also liaise as appropriate with the regulator.

A1.21 It should be noted that the mere existence of a permit does not automatically guarantee that action to address a statutory nuisance can be taken under that permit. Local authorities should liaise with the regulator (where that is not the local authority) to determine the regulatory position. Environmental permits relating only to radioactive substances activities or stand-alone water discharge, or stand-alone groundwater activities will not address nuisance.

A1.22 The requirement for consent prior to prosecution is to avoid “double jeopardy” for operators. However, court proceedings in relation to activities that are not covered by EPR (even though they are on the sites of regulated or exempt facilities) may be taken under the statutory nuisance provisions without the Secretary of State’s or Welsh Ministers’ consent. The same applies where the statutory nuisance cannot be addressed under the environmental permit. The provisions do not stop members of the public bringing private prosecutions under section 82 of the EPA 1990. For Part B installations reference should be made to the local authority Manual.

¹¹⁵ See: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>.

¹¹⁶ SI 2009/1927.

Permitting considerations¹¹⁷

Air quality strategy

A1.23 Part IV of the Environment Act 1995 concerns air quality. Section 80 requires the Secretary of State to prepare a national air quality strategy, and section 81 requires the Environment Agency and Natural Resources Wales to have regard to that strategy when discharging their pollution control functions.

Conservation

A1.24 The Conservation of Habitats and Species Regulations 2017¹¹⁸ implement Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive). They require sites which are important for either habitats or species (listed in Annexes I and II to the Habitats Directive respectively) to be designated as Special Areas of Conservation. These sites and Special Protection Areas classified under Council Directive 79/409/EEC on the Conservation of Wild Birds (the Wild Birds Directive) form a network termed Natura 2000.

A1.25 The Habitats Directive requires member states to take measures to maintain or restore the relevant natural habitats and wild species at a favourable conservation status. Accordingly, the 2017 Regulations provide that, when determining an environmental permit application which is likely to have a significant effect on a European site, either alone or in combination with other plans or projects, the regulator must carry out an appropriate assessment of the implications for the site in view of that site's conservation objectives.

A1.26 These assessments should ascertain whether an application will have an adverse effect on the integrity of the site interest features. The assessment may therefore cause the permit application to be refused, or to be granted subject to stringent conditions to protect the designated site.

A1.27 1.26 In carrying out the appropriate assessment, the regulator must consult the relevant statutory nature conservation body and have regard to any representation made by them. The Environment Agency and Natural Resources Wales will carry out this consultation in accordance with their public participation statements (see chapter 10 on [Consultation and public participation](#)).

A1.28 Part II of The Wildlife and Countryside Act 1981 provides protection to Sites of Special Scientific Interest (SSSIs) in England and Wales. The includes provisions which apply to owners and occupiers who wish to undertake notified operations likely to damage the special interest of the site, but more important in this context are the requirements that apply to public bodies such as local authorities and the Environment Agency and Natural Resources Wales. Section 28G places a duty on

¹¹⁷ In relation to Part B facilities, the permitting considerations only apply insofar as they relate to the control of air emissions.

¹¹⁸ SI 2017/1012.

such bodies to take reasonable steps, consistent with the proper exercise of the authorities' functions, to further the conservation and enhancement of special interest features of SSSIs. Section 28 also requires that they consult statutory nature conservation bodies before permitting (section 28I) any operation likely to damage a SSSI (see chapter 10 on [Consultation and public participation](#)).

A1.29 The EPR regulator has a duty to have regard to the purpose of conserving biodiversity in the exercise of its functions. This duty is provided by section 40 of the Natural Environment and Rural Communities Act 2006 which extends the pre-existing duty on Ministers of the Crown, government departments and the Welsh Government to all public authorities (this replaces section 74(1) of the Countryside and Rights of Way Act 2000).

Water Framework Directive

A1.30 The Water Environment (Water Framework Directive) Regulations 2017¹¹⁹ make provision for the purpose of implementing 2000/60/EC establishing a framework for Community action in the field of water policy ("the Water Framework Directive") in river basin districts within England and Wales. They require a planning process to be established to manage, protect and improve the quality of water resources. The Environment Agency and Natural Resources Wales are the competent authorities for England and Wales (respectively), and they prepare river basin management plans for Secretary of State's and the Welsh Ministers' (respectively) approval. The plans are to set environmental objectives and to set out programmes of measures to fulfil the plans. The Secretary of State, Welsh Ministers, the Environment Agency and Natural Resources Wales must exercise their functions, including permitting powers under EPR, so as to secure compliance with the requirements of the Water Framework Directive.

A1.31 The second cycle of Plans was produced, approved and published in December 2015, and the programmes of measures have to be made operational to meet the objectives identified in the Plan by December 2021. All Protected Areas have to meet their objectives by then. A third cycle of plans and programmes of measures are required for the following six years. Along with other public bodies, the Environment Agency and Natural Resources Wales are required to have regard to river basin management plans and to any supplementary plans in exercising their functions in relation to river basin districts. Their preparation and execution may influence regulation of activities under environmental permitting although it is too early to determine those influences.

The Bathing Waters Directive (2006/7/EC)

A1.32 This Directive aims to protect designated bathing waters from faecal pollution, in order to protect human health and the environment. It therefore affects any

¹¹⁹ SI 2017 No 407.

discharges from urban waste water treatment works, as well as some other types of business and industry, that may impact on the quality of the bathing waters.

A1.33 This Directive has been transposed via the Bathing Waters Regulations 2013¹²⁰ which established water quality objectives for designated bathing waters. The Environment Agency and Natural Resources Wales must exercise their powers, including their permitting powers under the EPR, so as to ensure compliance with the requirements of the Bathing Waters Directive.

The Urban Waste Water Treatment Directive (91/271/EEC)

A1.34 This Directive aims to protect the environment from the adverse effects of the collection, treatment and discharge of urban waste water. The Directive covers statutory water and sewerage companies, since they own and operate the public sewerage system and the urban waste water treatment works. Discharges from certain industrial sectors such as food and drink processing plants can have a similar polluting effect to untreated sewage, so some of these are also covered by the Directive.

A1.35 This Directive has been transposed by Urban Waste Water Treatment (England and Wales) Regulations 1994¹²¹ which impose a duty on the Environment Agency and Natural Resources Wales to reflect the requirements of the Regulations in any permits they grant.

A1.36 A permit must be obtained for any discharge to water that is covered by any of the above Directives. This is so that the regulator can limit the potential for pollution in the receiving waters and ensure the waters meet the objectives set by the legislation, thereby protecting the environment and human health.

¹²⁰ SI 2013/1675.

¹²¹ SI 1994/2841.

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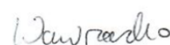
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Project / Site name:	Wood Waste	Samples received on:	25/06/2021
Your job number:	SUPPLIES ASSESSMENT	Samples instructed on/ Analysis started on:	25/06/2021
Your order number:	C2810	Analysis completed by:	05/07/2021
Report Issue Number:	1	Report issued on:	05/07/2021
Samples Analysed:	15 non soil samples		



Signed:

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For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

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Analytical Report Number: 21-83276
Project / Site name: Wood Waste
Your Order No: C2810

Lab Sample Number				1916486	1916487	1916488	1916489
Sample Reference				PLA00110/B	PLA00111/F	PLA00112/C	PLA00113/F
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				17/06/2021	17/06/2021	17/06/2021	18/06/2021
Time Taken				1210	2230	1530	1000
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	0.94	0.60	0.47	0.82
Total mass of sample received	kg	0.001	NONE	0.20	0.20	0.20	0.20

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	NONE	15	1.1	9.4	1.2
Boron (total)	mg/kg	1	NONE	15	2.0	13	2.9
Cadmium (aqua regia extractable)	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	NONE	26	< 1.0	21	1.2
Copper (aqua regia extractable)	mg/kg	1	NONE	42	4.9	35	4.9
Lead (aqua regia extractable)	mg/kg	1	NONE	57	< 1.0	49	4.2
Mercury (aqua regia extractable)	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	NONE	2.4	< 1.0	1.7	< 1.0
Selenium (aqua regia extractable)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	NONE	78	8.4	78	12

VOCs

Chloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	NONE	270	< 1.0	110	< 1.0
1,1,2-Trichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0

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Analytical Report Number: 21-83276
Project / Site name: Wood Waste
Your Order No: C2810

Lab Sample Number				1916486	1916487	1916488	1916489
Sample Reference				PLA00110/B	PLA00111/F	PLA00112/C	PLA00113/F
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				17/06/2021	17/06/2021	17/06/2021	18/06/2021
Time Taken				1210	2230	1530	1000
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
1,1,2,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/kg	1	NONE	110	< 1.0	130	< 1.0
1,2-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0

VOCs TICs

VOCs TICs Compound Name		N/A	NONE	Camphene	ND	Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-, (1S)-	ND
VOC % Match	%	N/A	NONE	95		91	
VOCs TICs Compound Name		N/A	NONE	.alpha.-Pinene			
VOC % Match	%	N/A	NONE	90			
VOCs TICs Compound Name		N/A	NONE	Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-, (1S)-			
VOC % Match	%	N/A	NONE	90			

SVOCs

Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1

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Analytical Report Number: 21-83276
Project / Site name: Wood Waste
Your Order No: C2810

Lab Sample Number				1916486	1916487	1916488	1916489
Sample Reference				PLA00110/B	PLA00111/F	PLA00112/C	PLA00113/F
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				17/06/2021	17/06/2021	17/06/2021	18/06/2021
Time Taken				1210	2230	1530	1000
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Hexachlorobutadiene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	NONE	2.9	< 0.1	1.5	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	NONE	0.22	< 0.05	< 0.05	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	NONE	0.3	< 0.2	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	NONE	0.35	< 0.05	< 0.05	< 0.05
Azobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	NONE	2.2	< 0.05	1.4	< 0.05
Anthracene	mg/kg	0.05	NONE	0.34	< 0.05	< 0.05	< 0.05
Carbazole	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	0.9	< 0.2
Anthraquinone	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	NONE	2.2	< 0.05	1.6	< 0.05
Pyrene	mg/kg	0.05	NONE	1.5	< 0.05	1.2	< 0.05
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05

SVOCs TICs

SVOCs TICs Compound Name				Octacosane	Heneicosane	Octacosane	1,3,6,10-Cyclotetradecatetraene, 3,7,11-trimethyl-14 (1-methylethyl)-, [S-(E,Z,E,E)]-
SVOC % Match	%	N/A	NONE	99	99	99	99
SVOCs TICs Compound Name				Triacotane	Octacosane	1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,9,10,10a-octahydro-1,4a-dimethyl-7-(1-methylethyl)-, [1R-(1.alpha.,4a.beta.,10a.alpha.)]-	Triacotane
SVOC % Match	%	N/A	NONE	99	99	99	99

Analytical Report Number: 21-83276
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 Your Order No: C2810

Lab Sample Number				1916486	1916487	1916488	1916489
Sample Reference				PLA00110/B	PLA00111/F	PLA00112/C	PLA00113/F
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				17/06/2021	17/06/2021	17/06/2021	18/06/2021
Time Taken				1210	2230	1530	1000
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
SVOCs TICs Compound Name		N/A	NONE	Heneicosane	Ergost-5-en-3-ol, (3.beta.)-	Hentriacontane	Octacosane
SVOC % Match	%	N/A	NONE	98	99	99	99
SVOCs TICs Compound Name		N/A	NONE	Pentacosane	.gamma.-Sitosterol	Dotriacontane	Hentriacontane
SVOC % Match	%	N/A	NONE	98	99	99	99
SVOCs TICs Compound Name		N/A	NONE	Tetracosane	Tetracosane	Heptadecane, 9- octyl-	Ergost-5-en-3-ol, (3.beta.)-
SVOC % Match	%	N/A	NONE	98	98	98	99
SVOCs TICs Compound Name		N/A	NONE	Hentriacontane	1-Hexacosene	Nonacosane	.gamma.-Sitosterol
SVOC % Match	%	N/A	NONE	98	98	97	99
SVOCs TICs Compound Name		N/A	NONE	3-Carene	Octadecane	Docosane	Heneicosane
SVOC % Match	%	N/A	NONE	97	97	97	98
SVOCs TICs Compound Name		N/A	NONE	3-Cyclohexen-1-ol, 4-methyl-1-(1-methylethyl)-	Nonacosane	Heneicosane	Naphthalene, 1,2,3,5,6,8a- hexahydro-4,7- dimethyl-1-(1- methylethyl)-, (1S- cis)-
SVOC % Match	%	N/A	NONE	97	97	97	97
SVOCs TICs Compound Name		N/A	NONE	Docosane	Pentacosane	1S-.alpha.-Pinene	Heptadecane
SVOC % Match	%	N/A	NONE	97	97	96	97
SVOCs TICs Compound Name		N/A	NONE	1S-.alpha.-Pinene	Tetratriacontane	3-Carene	Eicosane
SVOC % Match	%	N/A	NONE	96	97	96	97

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-83276
Project / Site name: Wood Waste
Your Order No: C2810

Lab Sample Number				1916490	1916491	1916492	1916493
Sample Reference				PLA00114/H	PLA00115/G	PLA00116/E	PLA00117/I
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				18/06/2021	18/06/2021	21/06/2021	21/06/2021
Time Taken				1000	1450	1540	1250
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	0.84	1.1	1.9	0.69
Total mass of sample received	kg	0.001	NONE	0.20	0.20	0.20	0.20

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	NONE	14	9.9	1.3	6.4
Boron (total)	mg/kg	1	NONE	13	8.1	3.5	11
Cadmium (aqua regia extractable)	mg/kg	0.2	NONE	< 0.2	0.3	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	NONE	27	15	2.7	13
Copper (aqua regia extractable)	mg/kg	1	NONE	46	27	5.5	25
Lead (aqua regia extractable)	mg/kg	1	NONE	66	54	4.6	41
Mercury (aqua regia extractable)	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	NONE	1.8	1.2	1.5	1.7
Selenium (aqua regia extractable)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	NONE	58	55	19	52

VOCs

Chloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	NONE	91	12	68	72
1,1,2-Trichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	72
Tribromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0

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Analytical Report Number: 21-83276
Project / Site name: Wood Waste
Your Order No: C2810

Lab Sample Number				1916490	1916491	1916492	1916493
Sample Reference				PLA00114/H	PLA00115/G	PLA00116/E	PLA00117/I
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				18/06/2021	18/06/2021	21/06/2021	21/06/2021
Time Taken				1000	1450	1540	1250
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
1,1,2,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/kg	1	NONE	180	110	250	120
1,2-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0

VOCs TICs

VOCs TICs Compound Name		N/A	NONE	Bicyclo[3.1.1]hept-2-ene, 2,6,6-trimethyl-, (.+/-)-	ND	Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-, (1S)-	Bicyclo[3.1.1]hept-2-ene, 2,6,6-trimethyl-, (.+/-)-
VOC % Match	%	N/A	NONE	94	0	95	95
VOCs TICs Compound Name		N/A	NONE				.beta.-Pinene
VOC % Match	%	N/A	NONE				
VOCs TICs Compound Name		N/A	NONE				
VOC % Match	%	N/A	NONE				

SVOCs

Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1

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Analytical Report Number: 21-83276
Project / Site name: Wood Waste
Your Order No: C2810

Lab Sample Number				1916490	1916491	1916492	1916493
Sample Reference				PLA00114/H	PLA00115/G	PLA00116/E	PLA00117/I
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				18/06/2021	18/06/2021	21/06/2021	21/06/2021
Time Taken				1000	1450	1540	1250
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Hexachlorobutadiene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	0.24
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	NONE	1.8	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	NONE	0.26	< 0.05	< 0.05	0.31
Azobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	NONE	2.0	0.99	< 0.05	2.1
Anthracene	mg/kg	0.05	NONE	2.5	< 0.05	< 0.05	0.31
Carbazole	mg/kg	0.3	NONE	0.5	< 0.3	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	1.0	< 0.2	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	NONE	2.6	1.4	< 0.05	2.0
Pyrene	mg/kg	0.05	NONE	1.8	0.96	< 0.05	1.4
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05

SVOCs TICs

SVOCs TICs Compound Name				1,4-Methanoazulene, decahydro-4,8,8- trimethyl-9-methylene , [1S- (1.alpha.,3a.beta.,4.alpha. pha.,8a.beta.)]-	Octacosane	1,4-Methanoazulene, decahydro-4,8,8- trimethyl-9-methylene , [1S- (1.alpha.,3a.beta.,4.alpha. pha.,8a.beta.)]-	Octacosane
SVOC % Match	%	N/A	NONE	99	99	99	99
SVOCs TICs Compound Name				Octacosane	1- Phenanthrenecarboxyl ic acid, 1,2,3,4,4a,9,10,10a- octahydro-1,4a- dimethyl-7-(1- methylethyl)-, [1R- (1.alpha.,4a.beta.,10a .alpha.)]-	Heneicosane	1- Phenanthrenecarboxyl ic acid, 1,2,3,4,4a,9,10,10a- octahydro-1,4a- dimethyl-7-(1- methylethyl)-, [1R- (1.alpha.,4a.beta.,10a .alpha.)]-
SVOC % Match	%	N/A	NONE	99	99	99	99

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Analytical Report Number: 21-83276
 Project / Site name: Wood Waste
 Your Order No: C2810

Lab Sample Number				1916490	1916491	1916492	1916493
Sample Reference				PLA00114/H	PLA00115/G	PLA00116/E	PLA00117/I
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				18/06/2021	18/06/2021	21/06/2021	21/06/2021
Time Taken				1000	1450	1540	1250
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
SVOCs TICs Compound Name		N/A	NONE	Abietic acid	Abietic acid	Nonacosane	Hentriacontane
SVOC % Match	%	N/A	NONE	99	99	99	99
SVOCs TICs Compound Name		N/A	NONE	Hentriacontane	Hentriacontane	Phenanthrenecarboxylic acid, 1,2,3,4,4a,9,10,10a-octahydro-1,4a-dimethyl-7-(1-methylethyl)-, [1R-(1.alpha.,4a.beta.,10a.alpha.)]	Triacontane
SVOC % Match	%	N/A	NONE	99	99	99	99
SVOCs TICs Compound Name		N/A	NONE	.gamma.-Sitosterol	.gamma.-Sitosterol	Hentriacontane	.gamma.-Sitosterol
SVOC % Match	%	N/A	NONE	99	99	99	99
SVOCs TICs Compound Name		N/A	NONE	Eicosane	Eicosane	.gamma.-Sitosterol	Nonacosane
SVOC % Match	%	N/A	NONE	98	98	99	98
SVOCs TICs Compound Name		N/A	NONE	Heptadecane, 9-octyl-	Heneicosane	Heptacosane	Tetracosane
SVOC % Match	%	N/A	NONE	98	98	98	98
SVOCs TICs Compound Name		N/A	NONE	Triacontane	Hexacosane	Tetracosane	Heneicosane
SVOC % Match	%	N/A	NONE	98	98	98	98
SVOCs TICs Compound Name		N/A	NONE	Heneicosane	Octadecane, 1-iodo-	Dotriacontane	Docosane
SVOC % Match	%	N/A	NONE	98	98	98	98
SVOCs TICs Compound Name		N/A	NONE	1R-.alpha.-Pinene	3-Carene	Bicyclo[3.1.1]hept-3-en-2-one, 4,6,6-trimethyl-, (1S)-	Dotriacontane
SVOC % Match	%	N/A	NONE	97	97	97	98

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-83276
Project / Site name: Wood Waste
Your Order No: C2810

Lab Sample Number				1916494	1916495	1916496	1916497
Sample Reference				PLA00118/G	PLA00119/B	PLA00120/E	PLA00121/D
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				23/06/2021	21/06/2021	21/06/2021	23/06/2021
Time Taken				1100	1710	1610	1240
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	0.54	0.75	1.6	0.90
Total mass of sample received	kg	0.001	NONE	0.20	0.20	0.20	0.20

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	NONE	10	13	< 1.0	13
Boron (total)	mg/kg	1	NONE	10	12	2.5	14
Cadmium (aqua regia extractable)	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	NONE	16	21	< 1.0	24
Copper (aqua regia extractable)	mg/kg	1	NONE	36	42	4.5	43
Lead (aqua regia extractable)	mg/kg	1	NONE	40	57	3.0	61
Mercury (aqua regia extractable)	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	NONE	1.2	1.8	< 1.0	1.8
Selenium (aqua regia extractable)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	NONE	46	61	16	58

VOCs

Chloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	NONE	45	110	73	300
1,1,2-Trichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/kg	1	NONE	< 1.0	170	< 1.0	90
Tribromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0

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Analytical Report Number: 21-83276
Project / Site name: Wood Waste
Your Order No: C2810

Lab Sample Number				1916494	1916495	1916496	1916497
Sample Reference				PLA00118/G	PLA00119/B	PLA00120/E	PLA00121/D
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				23/06/2021	21/06/2021	21/06/2021	23/06/2021
Time Taken				1100	1710	1610	1240
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
1,1,2,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/kg	1	NONE	49	180	150	480
1,2-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0

VOCs TICs

VOCs TICs Compound Name		N/A	NONE	1,3,6-Octatriene, 3,7-dimethyl-, (E)-	ND	Bicyclo[3.1.1]hept-2-ene, 2,6,6-trimethyl-, (+/-)-	Bicyclo[3.1.1]hept-2-ene, 2,6,6-trimethyl-, (+/-)-
VOC % Match	%	N/A	NONE	94		95	94
VOCs TICs Compound Name		N/A	NONE				
VOC % Match	%	N/A	NONE				
VOCs TICs Compound Name		N/A	NONE				
VOC % Match	%	N/A	NONE				

SVOCs

Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1

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Analytical Report Number: 21-83276
Project / Site name: Wood Waste
Your Order No: C2810

Lab Sample Number				1916494	1916495	1916496	1916497
Sample Reference				PLA00118/G	PLA00119/B	PLA00120/E	PLA00121/D
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				23/06/2021	21/06/2021	21/06/2021	23/06/2021
Time Taken				1100	1710	1610	1240
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Hexachlorobutadiene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	NONE	< 0.1	0.6	< 0.1	0.5
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	0.5
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	0.65
Azobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	NONE	1.1	1.4	< 0.05	5.3
Anthracene	mg/kg	0.05	NONE	0.20	0.27	< 0.05	0.76
Carbazole	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	1.2	< 0.2	2.0
Anthraquinone	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	0.7
Fluoranthene	mg/kg	0.05	NONE	2.0	1.9	< 0.05	5.7
Pyrene	mg/kg	0.05	NONE	1.3	1.3	< 0.05	3.8
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	1,4-Methanoazulene, decahydro-4,8,8- trimethyl-9-methylene , [1S- (1.alpha.,3a.beta.,4.alpha. pha.,8a.beta.)]-	Tetracosane	1,4-Methanoazulene, decahydro-4,8,8- trimethyl-9-methylene , [1S- (1.alpha.,3a.beta.,4.alpha. pha.,8a.beta.)]-	1,4-Methanoazulene, decahydro-4,8,8- trimethyl-9-methylene , [1S- (1.alpha.,3a.beta.,4.alpha. pha.,8a.beta.)]-
SVOC % Match	%	N/A	NONE	99	99	99	99
SVOCs TICs Compound Name		N/A	NONE	Abietic acid	1- Phenanthrenecarboxyl ic acid, 1,2,3,4,4a,9,10,10a- octahydro-1,4a- dimethyl-7-(1- methylethyl)-, [1R- (1.alpha.,4a.beta.,10a .alpha.)]-	Octacosane	Heptacosane
SVOC % Match	%	N/A	NONE	99	99	99	99

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Analytical Report Number: 21-83276
Project / Site name: Wood Waste
Your Order No: C2810

Lab Sample Number				1916494	1916495	1916496	1916497
Sample Reference				PLA00118/G	PLA00119/B	PLA00120/E	PLA00121/D
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				23/06/2021	21/06/2021	21/06/2021	23/06/2021
Time Taken				1100	1710	1610	1240
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
SVOCs TICs Compound Name		N/A	NONE	Hentriacontane	Abietic acid	Phenanthrenecarboxylic acid, 1,2,3,4,4a,9,10,10a-octahydro-1,4a-dimethyl-7-(1-methylethyl)-, [1R-(1.alpha.,4a.beta.,10a.alpha.)]	Phenanthrenecarboxylic acid, 1,2,3,4,4a,9,10,10a-octahydro-1,4a-dimethyl-7-(1-methylethyl)-, [1R-(1.alpha.,4a.beta.,10a.alpha.)]
SVOC % Match	%	N/A	NONE	99	99	99	99
SVOCs TICs Compound Name		N/A	NONE	.gamma.-Sitosterol	Hentriacontane	Abietic acid	Abietic acid
SVOC % Match	%	N/A	NONE	99	99	99	99
SVOCs TICs Compound Name		N/A	NONE	Heneicosane	.gamma.-Sitosterol	Hentriacontane	.gamma.-Sitosterol
SVOC % Match	%	N/A	NONE	98	99	99	99
SVOCs TICs Compound Name		N/A	NONE	Tetracosane	.alpha.-Cadinol	Triacotane	Caryophyllene
SVOC % Match	%	N/A	NONE	98	98	99	98
SVOCs TICs Compound Name		N/A	NONE	3-Carene	Hexacosane	.gamma.-Sitosterol	.alpha.-Cadinol
SVOC % Match	%	N/A	NONE	97	98	99	98
SVOCs TICs Compound Name		N/A	NONE	3-Cyclohexene-1-methanol, .alpha.,.alpha.,4-trimethyl-, (S)-	Nonacosane	Tetracosane	Hentriacontane
SVOC % Match	%	N/A	NONE	97	98	98	98
SVOCs TICs Compound Name		N/A	NONE	Bicyclo[3.1.1]hept-3-en-2-one, 4,6,6-trimethyl-	Heneicosane	Heneicosane	Docosane
SVOC % Match	%	N/A	NONE	97	98	98	98
SVOCs TICs Compound Name		N/A	NONE	Octadecane		1-Hexacosene	Heneicosane
SVOC % Match	%	N/A	NONE	97		98	98

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-83276

Project / Site name: Wood Waste

Your Order No: C2810

Lab Sample Number				1916498	1916499	1916500
Sample Reference				PLA00122/B	PLA00123/J	PLA00124/F
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				22/06/2021	23/06/2021	23/06/2021
Time Taken				1800	2140	1950
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	0.77	1.5	2.2
Total mass of sample received	kg	0.001	NONE	0.20	0.20	0.20

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	NONE	13	4.1	8.5
Boron (total)	mg/kg	1	NONE	13	6.1	7.8
Cadmium (aqua regia extractable)	mg/kg	0.2	NONE	< 0.2	< 0.2	0.2
Chromium (aqua regia extractable)	mg/kg	1	NONE	21	7.1	13
Copper (aqua regia extractable)	mg/kg	1	NONE	42	19	28
Lead (aqua regia extractable)	mg/kg	1	NONE	44	30	44
Mercury (aqua regia extractable)	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	NONE	30	< 1.0	1.7
Selenium (aqua regia extractable)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	NONE	64	45	46

VOCs

Chloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Bromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Benzene	µg/kg	1	NONE	7.4	< 1.0	< 1.0
Tetrachloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	NONE	120	70	25
1,1,2-Trichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	NONE	20	< 1.0	< 1.0
p & m-Xylene	µg/kg	1	NONE	12	< 1.0	< 1.0
Styrene	µg/kg	1	NONE	94	170	26
Tribromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
o-Xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0

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Analytical Report Number: 21-83276
Project / Site name: Wood Waste
Your Order No: C2810

Lab Sample Number				1916498	1916499	1916500
Sample Reference				PLA00122/B	PLA00123/J	PLA00124/F
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				22/06/2021	23/06/2021	23/06/2021
Time Taken				1800	2140	1950
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
1,1,2,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/kg	1	NONE	130	180	130
1,2-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0

VOCs TICs

VOCs TICs Compound Name		N/A	NONE	ND	Bicyclo[3.1.1]hept-2-ene, 2,6,6-trimethyl-, (.+/-)-	ND
VOC % Match	%	N/A	NONE		94	
VOCs TICs Compound Name		N/A	NONE		.beta.-Pinene	
VOC % Match	%	N/A	NONE		93	
VOCs TICs Compound Name		N/A	NONE			
VOC % Match	%	N/A	NONE			

SVOCs

Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	3.0	< 0.2
2-Chlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1

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Analytical Report Number: 21-83276
 Project / Site name: Wood Waste
 Your Order No: C2810

Lab Sample Number				1916498	1916499	1916500
Sample Reference				PLA00122/B	PLA00123/J	PLA00124/F
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				22/06/2021	23/06/2021	23/06/2021
Time Taken				1800	2140	1950
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Hexachlorobutadiene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	NONE	1.7	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	NONE	0.23	< 0.05	< 0.05
Azobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	NONE	1.7	0.33	0.62
Anthracene	mg/kg	0.05	NONE	0.29	< 0.05	< 0.05
Carbazole	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	1.3	0.5	< 0.2
Anthraquinone	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	NONE	2.0	0.53	0.95
Pyrene	mg/kg	0.05	NONE	1.4	0.40	0.69
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05

SVOCs TICs

SVOCs TICs Compound Name				1,4-Methanoazulene, decahydro-4,8,8-trimethyl-9-methylene, [1S-(1.alpha.,3a.beta.,4.alpha.,8a.beta.)]-	1,4-Methanoazulene, decahydro-4,8,8-trimethyl-9-methylene, [1S-(1.alpha.,3a.beta.,4.alpha.,8a.beta.)]-	Abietic acid
SVOC % Match	%	N/A	NONE	99	99	99
SVOCs TICs Compound Name				Abietic acid	Heneicosane	1-Hexacosene
SVOC % Match	%	N/A	NONE	99	99	99

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Analytical Report Number: 21-83276
 Project / Site name: Wood Waste
 Your Order No: C2810

Lab Sample Number				1916498	1916499	1916500
Sample Reference				PLA00122/B	PLA00123/J	PLA00124/F
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				22/06/2021	23/06/2021	23/06/2021
Time Taken				1800	2140	1950
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
				Triacantane	Octacosane	Hentriacontane
SVOCs TICs Compound Name		N/A	NONE			
SVOC % Match	%	N/A	NONE	99	99	99
				.gamma.-Sitosterol	Phenanthrenecarboxylic acid, 1,2,3,4,4a,9,10,10a-octahydro-1,4a-dimethyl-7-(1-methylethyl)-, [1R-(1.alpha.,4a.beta.,10a.alpha.)]	.gamma.-Sitosterol
SVOCs TICs Compound Name		N/A	NONE			
SVOC % Match	%	N/A	NONE	99	99	99
SVOCs TICs Compound Name		N/A	NONE	Eicosane	Abietic acid	Eicosane
SVOC % Match	%	N/A	NONE	98	99	98
SVOCs TICs Compound Name		N/A	NONE	Dotriacontane	.gamma.-Sitosterol	Heneicosane
SVOC % Match	%	N/A	NONE	98	99	98
SVOCs TICs Compound Name		N/A	NONE	Heptacosane	Heptacosane	Cyclopentadecanone, 2-hydroxy-
SVOC % Match	%	N/A	NONE	98	98	98
				1S-.alpha.-Pinene	Triacantane	Tetracosane
SVOCs TICs Compound Name		N/A	NONE			
SVOC % Match	%	N/A	NONE	97	98	98
SVOCs TICs Compound Name		N/A	NONE	3-Carene	3-Carene	Triacantane
SVOC % Match	%	N/A	NONE	97	97	98
SVOCs TICs Compound Name		N/A	NONE	3-Cyclohexene-1-methanol, .alpha.,.alpha.-4-trimethyl-	3-Cyclohexene-1-methanol, .alpha.,.alpha.-4-trimethyl-, (S)-	Heptacosane
SVOC % Match	%	N/A	NONE	97	97	98

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 21-83276

Project / Site name: Wood Waste

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1916486	PLA00110/B	None Supplied	None Supplied	Non Soil**
1916487	PLA00111/F	None Supplied	None Supplied	Non Soil**
1916488	PLA00112/C	None Supplied	None Supplied	Non Soil**
1916489	PLA00113/F	None Supplied	None Supplied	Non Soil**
1916490	PLA00114/H	None Supplied	None Supplied	Non Soil**
1916491	PLA00115/G	None Supplied	None Supplied	Non Soil**
1916492	PLA00116/E	None Supplied	None Supplied	Non Soil**
1916493	PLA00117/I	None Supplied	None Supplied	Non Soil**
1916494	PLA00118/G	None Supplied	None Supplied	Non Soil**
1916495	PLA00119/B	None Supplied	None Supplied	Non Soil**
1916496	PLA00120/E	None Supplied	None Supplied	Non Soil**
1916497	PLA00121/D	None Supplied	None Supplied	Non Soil**
1916498	PLA00122/B	None Supplied	None Supplied	Non Soil**
1916499	PLA00123/J	None Supplied	None Supplied	Non Soil**
1916500	PLA00124/F	None Supplied	None Supplied	Non Soil**

**Non MCERTS Matrix

Analytical Report Number : 21-83276

Project / Site name: Wood Waste

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Tentatively identified compounds (SVOC) in soil	Determination of semi-volatile organic compounds total ion count in soil by extraction with dichloromethane and hexane followed by GC-MS followed by a full library scan.	In-house method based on USEPA 8270	L064-PL	D	NONE
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Tentatively identified compounds (VOC) in soil	Determination of volatile organic compounds total ion count in soil by headspace GC-MS followed by a full library scan.	In-house method based on USEPA8260	L073-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Evidence

Material comparators for end-of-waste decisions

Animal bedding: straw

Report – SC130040/R13

Version 2

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Executive summary

This report details the work carried out to characterise straw, a key comparator. This information will inform end-of-waste assessments for waste-derived materials intended to replace straw as animal bedding.

The Waste Framework Directive (Article 6) provides criteria for identifying when a waste material has become a product and no longer needs to be regulated as a waste. Through Article 6 the case law requires the Environment Agency to consider the environmental and human health impacts from materials in comparison with their non-waste material alternatives.

'It should be enough that the holder has converted the waste material into a distinct, marketable product, which can be used in exactly the same way as a [non-waste material], and with no worse environmental effects.'

Market research was used to define straw as an ordinary comparator and a literature review was used to identify any existing published data.

A limited number of suitable pre-existing datasets were found during the literature review.

Ten samples of straw were collected from various suppliers across England. Analytical data from these samples are presented in this report.

We recommend comparing the concentrations of analytes in the comparators dataset to the concentrations in the waste-derived material, paying attention to the higher values. This comparison does not constitute a pass/fail test or an end of waste view. It will provide an indication of whether the waste material contains similar levels of analytes to non-waste materials and whether an end-of-waste application may be appropriate or that further analysis or improved treatment processes may be warranted.

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1 Introduction

To define end-of-waste criteria, the Environment Agency requires a set of ordinary material comparator data for use as a benchmark against which other materials and wastes can be assessed.

The Waste Framework Directive (Article 6) provides criteria for identifying when a waste material has become a product and no longer needs to be regulated as a waste. Through Article 6 the case law requires the Environment Agency to consider the environmental and human health impacts from materials in comparison with their non-waste material alternatives.

'It should be enough that the holder has converted the waste material into a distinct, marketable product, which can be used in exactly the same way as a [non-waste material], and with no worse environmental effects.'

The purpose of this report is to provide an evidence base of the composition and characteristics of straw which is defined as an ordinary material comparator that is currently permitted for use as animal bedding.

This report provides the results from the primary analysis of 10 straw samples.

2 Definition

Straw is defined for the purpose of this project as dried stems/stalks of plants such as wheat, rye, oats and barley. Straw is cut or shredded to provide bedding and soiling material for livestock and domestic pets. Straw may also be pelletised for use as animal bedding.

The following types of straw are available for use as animal bedding:

- winter and spring barley
- hay
- oats
- Miscanthus
- wheat straw
- oil seed rape

2.1 Material properties relevant to use

Wheat straw is cheap, easily available, absorbent, warm and easy to muck out. It rots down well, and is easy to dispose of in a muck heap and makes a good garden fertiliser (Countrywide Farmers 2013).

Wheat straw is not suitable for horses with dust allergies or respiratory problems. It can be very dusty and poorer quality straw can be mouldy too. Storage can be a problem – bales need a lot of space in a dry area. Oat straw is more expensive. It quickly becomes saturated, which makes it the least suitable straw for bedding. Some horses

will eat the straw and it can cause several problems such as allergic coughing to the dust (Countrywide Farmers 2013).

3 Comparator sub-types

Ten straw samples were obtained from a variety of suppliers across England to provide a cross-section of the main straw types used for animal bedding. The samples can be further divided into sub-types. Figure 3.1 shows a breakdown of the samples by sub-type.

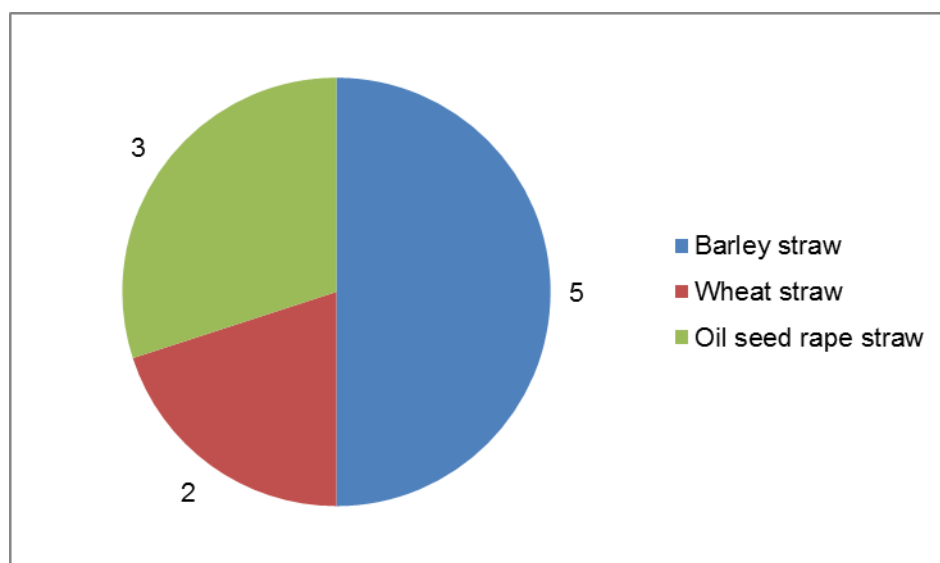


Figure 3.1 Number of samples of each straw sub-type

4 Material sources and sampling procedure

An internet search was used to produce a list of straw suppliers. Straw samples were requested from all these suppliers to ensure a cross-section of straw types were sampled. Samples were collected from those willing to participate.

No sampling standards for straw used for animal bedding were identified during the literature review. Straw samples were taken in accordance with BS EN 14778:2011 (BSI 2011).

5 Analytical parameters

The main parameters determined, together with units of measurement, are summarised in Tables 5.1 to 5.4.

Testing was carried out in accordance with in-house methods documented by the Environment Agency's National Laboratory Service (NLS) which meet the requirements of the performance standards of the Environment Agency's monitoring certification scheme (MCERTS). Specific tests used are outlined in the tables. Other test methods are available.

In the tables, 'LE' refers to the NLS Leeds laboratory and 'SAL' refers to Scientific Laboratories Ltd.

Table 5.1 Analysis: physical properties

Parameter/ determinand	Test method used	Unit
pH	LE I pH and EC 01 pH and conductivity – water extracted, determined by specific electrode from 'as received' sample	–
Conductivity	LE I pH and EC 01 pH and conductivity – water extracted, determined by specific electrode from 'as received' sample	µS/cm
Dry solids @ 30°C	LE P soil preparation 01 – sample air dried at <30°C in a controlled environment until constant weight is achieved	%
Dry solids @ 105°C	LE I dry solids (105°C) – thermally treated, determined by gravimetry	%
Loss on ignition (LoI) @ 500°C (organic matter content)	Loss on ignition (500°C) – thermally treated, determined by gravimetry	%
Particle size distribution (PSD)	SAL determination of percentage particles. The particle size distribution calculates the percentage of a sample which is distributed via sieving between 2 and 20 mm, between 20 and 50 mm, and over 50 mm. The determination is performed on the >2 mm fraction of the sample (that is, the fraction of the sample that does not pass through the 2 mm sieve).	%
Bulk density	The test portion is filled into a standard container of a given size and shape, and is weighed afterwards. The density is calculated from the net weight per standard volume and reported.	kg/m ³
Moisture content	Parameter by calculation	%

Table 5.2 Analysis: metals

Parameter/ determinand	Test method used	Unit
Aluminium, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, lithium, magnesium, manganese, mercury, molybdenum, nickel, phosphorus, potassium, selenium, silver, sodium, strontium, thallium, tin, titanium, vanadium, zinc	LE I metals (ICP-OES) 01– digestion block aqua regia extracted under reflux; determined by ICP-OES	mg/kg
Chromium VI	Hexavalent chromium by spectrophotometry	mg/kg

Table 5.3 Analysis: organic contaminants

Parameter/ determinand	Test method used	Unit
Polycyclic aromatic hydrocarbons (PAHs) (USEPA16) ¹	Organics dichloromethane (DCM) extracted; hexane exchange determined by gas chromatography–mass spectrometry (GCMS) (scan mode)	µg/kg
Benzene, toluene, ethylbenzene and xylenes (BTEX)	Organics DCM extracted; hexane exchange determined by GCMS (scan mode)	µg/kg
Polychlorinated biphenyls (PCBs)	LE O HRMS3 – dioxins; furans – toluene accelerated solvent extraction (ASE); three-stage clean-up; determined by high resolution GCMS	µg/kg
Halogenated organics (including lindane, pentachlorophenol)	Organics DCM extracted; hexane exchange determined by GCMS (scan mode) and LE O Phenols (HPLC) 01 – methanol extracted; determined by high performance liquid chromatography (HPLC) with diode array detection (DAD) from ‘as received’ sample	µg/kg

Notes: ¹ List of 16 PAHs classified by the US Environmental Protection Agency (USEPA) as priority pollutants.

Table 5.4 Analysis: microbiological contaminants

Parameter/ determinand	Test method used	Unit
<i>Escherichia coli</i> (E. coli)	NLS B ECOLI ENV – Enumeration of <i>Escherichia coli</i> by membrane filtration (confirmed) NLS B ECOLI ENV – Enumeration of <i>Escherichia coli</i> by membrane filtration (Presumptive)	Number present per g wet weight (WW) of sample

Parameter/ determinand	Test method used	Unit
<i>Salmonella</i> spp.	NLS B SAL PA – Qualitative analysis for <i>Salmonella</i> spp. (not <i>S. typhi</i>) by membrane filtration	Present or absent

6 Existing data

Only one dataset relating to straw for animal bedding were identified during the literature review. This is presented in Table 6.1.

Primary data from another report in this series, 'Product comparators for materials applied to land: straw' (Environment Agency 2014), are reproduced in Tables 6.2 to 6.4. The straw sampled in that project had the potential to be used as animal bedding.

Table 6.1 Straw analysis

	Dry matter	Pb	Ni	Zn	Cd	Hg	Cr	Cu
	% m/m	mg/kg						
Straw	88.2	5*	2*	4.8	0.1*	0.01*	1*	2.2

Notes: * Below limit of measurement
Source: WRAP (2007)

Table 6.2 Physical properties of straw

Sample ID	pH	Conductivity	Dry solids @ 30°C	Dry solids @ 105°C	LoI @ 500°C (organic matter content)
		mS/cm	%	%	%
Straw 01a	8.56	1.97	91.5	86.9	93.2
Straw 02a	7.76	2.50	91.6	85.8	90.3
Straw 03a	8.12	1.60	83.8	81.7	92.6
Straw 04a	7.03	1.94	95.8	86.3	90.1
Straw 05a	6.83	2.76	90.8	85.8	87.9
Straw 06a	7.72	1.86	76.8	83.5	93.9
Straw 07a	7.94	1.99	95.8	86.6	93.1
Straw 08a	7.06	1.29	89.1	82.1	90.3
Straw 09a	7.90	2.73	97.3	87.7	92.8
Straw 10a	8.01	3.02	97.0	87.2	90.1
Mean	7.69	2.17	91.0	85.4	91.4
Median	7.83	1.98	91.6	86.1	91.5
Minimum	6.83	1.29	76.8	81.7	87.9
Maximum	8.56	3.02	97.3	87.7	93.9
No. of samples	10	10	10	10	10
90 th percentile	8.16	2.79	97.0	87.3	93.3
LOD	0.2	10	0.5	0.5	0.5

Notes: Source: Environment Agency (2014)

Table 6.3 Primary data for straw: metals (mg/kg DW)

(a)

Sample ID	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Cr VI	Co	Cu	Fe	Pb	Li
Straw 01a	346.0	<1.00	0.70	42.2	<0.100	4.45	<0.200	3950	0.94	<0.70	0.13	4.42	414	1.48	<1.00
Straw 02a	<50.0	<1.00	0.52	37.0	<0.100	2.78	<0.200	4280	0.58	<0.70	<0.10	4.49	<200	<1.00	<1.00
Straw 03a	<50.0	<1.00	<0.50	22.5	<0.100	2.84	<0.200	1880	<0.50	<0.40	<0.10	3.39	<200	<1.00	<1.00
Straw 04a	<50.0	<1.00	0.52	38.9	<0.100	1.48	<0.200	2010	<0.50	<0.70	<0.10	3.53	<200	<1.00	<1.00
Straw 05a	<50.0	<1.00	<0.50	82.6	<0.100	3.72	<0.200	2840	0.63	<0.70	<0.10	2.55	<200	<1.00	<1.00
Straw 06a	<60.0	<1.00	<0.60	30.1	<0.100	3.97	<0.200	1560	<0.60	<0.90	<0.10	5.88	<200	<1.00	<1.00
Straw 07a	<50.0	<1.00	3.66	55.6	<0.100	3.28	0.207	3480	<0.50	<0.70	<0.10	2.80	<200	<1.00	<1.00
Straw 08a	53.5	<1.00	3.71	66.8	<0.100	4.02	0.332	3310	0.73	<0.80	<0.10	3.30	<200	1.03	<1.00
Straw 09a	<60.0	<1.00	3.99	49.8	<0.100	4.28	0.297	3160	<0.60	<0.70	<0.10	2.50	<200	<1.00	<1.00
Straw 10a	<50.0	<1.00	3.53	39.9	<0.100	1.46	0.222	1830	0.91	<0.70	<0.10	3.78	<200	<1.00	<1.00
Mean	82.0	1.00	1.82	46.5	0.100	3.23	0.226	2830	0.65	0.70	0.10	3.66	221	1.05	1.00
Median	50.0	1.00	0.65	41.1	0.100	3.50	0.200	3000	0.60	0.70	0.10	3.46	200	1.00	1.00
Minimum	50.0	1.00	0.50	22.5	0.100	1.46	0.200	1560	0.50	0.40	0.10	2.50	200	1.00	1.00
Maximum	346.0	1.00	3.99	82.6	0.100	4.45	0.332	4280	0.94	0.90	0.13	5.88	414	1.48	1.00
No. of samples	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
90 th percentile	88.6	1.00	3.74	68.4	0.100	4.30	0.301	3983	0.91	0.81	0.10	4.63	221	1.08	1.00
LOD	50	1	0.5	0.5	0.1	1	0.2	60	0.5	0.3	0.1	1	1	1	1

(b)

Sample ID	Mg	Mn	Hg	Mo	Ni	P	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V	Zn
Straw 01a	882	20.9	<0.20	1.01	<0.70	870	4960	1.23	<1.00	235.0	11.10	<1.00	<1.00	6.71	0.87	25.70
Straw 02a	1260	10.1	<0.20	1.72	<0.70	826	11100	1.20	<1.00	149.0	14.70	<1.00	<1.00	<3.00	0.15	13.50
Straw 03a	576	16.6	<0.20	<1.00	<0.60	993	6220	1.11	<1.00	82.1	3.47	<1.00	<1.00	<3.00	<0.10	9.09
Straw 04a	536	7.7	<0.20	6.73	<0.60	1280	18300	1.32	<1.00	61.6	3.89	<1.00	<1.00	<3.00	<0.10	13.70
Straw 05a	1020	13.4	<0.20	<1.00	<0.60	1250	8220	1.26	<1.00	51.8	80.50	<1.00	<1.00	<3.00	0.16	8.81
Straw 06a	692	17.8	<0.20	1.10	<0.70	1570	9670	1.20	<1.00	150.0	7.51	<1.00	<1.00	<3.00	<0.10	9.84
Straw 07a	949	16.7	<0.20	1.03	<0.60	1200	9780	<1.00	<1.00	66.9	10.60	2.90	<1.00	<3.00	0.18	9.65
Straw 08a	943	37.4	<0.20	<1.00	<0.60	1420	6850	<1.00	<1.00	119.0	10.40	2.95	<1.00	<3.00	0.34	15.80
Straw 09a	833	30.4	<0.20	<1.00	<0.70	1750	10800	<1.00	<1.00	53.0	7.91	3.29	<1.00	<3.00	0.23	20.70
Straw 10a	751	12.0	<0.20	1.17	<0.60	1230	12400	<1.00	<1.00	55.6	5.24	2.75	<1.00	<3.00	0.18	19.80
Mean	844	18.3	0.20	1.68	0.64	1239	9830	1.13	1.00	102.0	15.5	1.79	1.00	3.37	0.24	14.70
Median	858	16.7	0.20	1.02	0.60	1240	9725	1.16	1.00	74.5	9.16	1.00	1.00	3.00	0.17	13.60
Minimum	536	7.7	0.20	1.00	0.60	826	4960	1.00	1.00	51.8	3.47	1.00	1.00	3.00	0.10	8.81
Maximum	1260	37.4	0.20	6.73	0.70	1750	18300	1.32	1.00	235.0	80.50	3.29	1.00	6.71	0.87	25.70
No. of samples	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
90 th percentile	1044	31.1	0.20	2.22	0.70	1588	12990	1.27	1.00	159.0	21.30	2.98	1.00	3.37	0.39	21.20
LOD	20	2	0.2	1	0.6	10	50	1	1	10	1	1	1	3	0.1	2.0

Notes: Source: Environment Agency (2014)
DW = dry weight

Table 6.4 Primary data for straw: GCMS semi-volatile screen ^{1,2} (mg/kg DW)

(a)

Sample ID	1-hexacosene	1,19-eicosadiene	13-octadecanal	14,16-hentriacontanediene	1-nonadecene	1-octadecene	4,22-stigmastadiene-3-one	beta-sitosterol	boscalid	camasterol	campesterol	cyclooctacosane	eicosane	ergosta-4,22-dien--3-one	ergosterol	gamma-sitosterol	hentriacontane
Straw 01a		12				79			11		14					57	
Straw 02a		91					12		20							30	92
Straw 03a	53	31					16									32	13
Straw 04a				120			12				14	134				43	
Straw 05a				110			24				14	400				45	
Straw 06a							26				13				11	30	19
Straw 07a		14			66		22				13					34	
Straw 08a		23				30										26	
Straw 09a							29				15		33			54	58
Straw 10a			26		158			42		11			36	19			

(b)

Sample ID	heptacosane	heptacosyl acetate	hexadecane	hexatriacontane	lup-20(29)-ene-3-one	nonacosane	octacosane	octacosyl acetate	octadecanal	octadecane	oxirane,heptadecyl-	pentatriacontane	squalene	stigmast-3,6-dione, (5.alpha.)-cane	stigmast-4-en-3-one	stigmasten-4-en-3-one	stigmasterol	tetracosane
Straw 01a			22				82	154	73		27	17			40		15	
Straw 02a		14				50	25	90							27			
Straw 03a					13						11		12		42		22	49
Straw 04a					10	31									29		25	
Straw 05a	20			28	11	85									59		21	
Straw 06a					25									16	48		21	21
Straw 07a					25	30									41		27	
Straw 08a		61			15										33		18	
Straw 09a					15	30									70		18	
Straw 10a					11											53	14	

Notes: ¹ Analytes >10 mg/kg (DW) only; analytes not detected or those with <10mg/kg (DW) have not been reported.

² The compounds identified at concentrations greater than the detection level during the GCMS screen are believed to be, in the vast majority of cases, naturally occurring substances within the sample matrix, rather than pollutants.

Source: Environment Agency (2014, Table 8.5)

7 Primary data

7.1 Statistical analysis of data

All 'less than' values were taken as the measured value. The mean, median, minimum, maximum and 90th percentile were calculated for each analyte.

Box plots can be used to graphically represent groups of quantitative data. The sample minimum, lower quartile (Q1), median (Q2), upper quartile (Q3) and sample maximum are used. The median is indicated by the horizontal line that runs across the box. The top of the box is 75th percentile (upper quartile or Q3). The bottom of the box is the 25th percentile (lower quartile or Q1). The interquartile range is represented by the height of the box (Q3 – Q1). A smaller interquartile range indicates less variability in the dataset while a larger interquartile range indicates a variable dataset. Whiskers extend out of the box to represent the sample minimum and maximum. Outliers are plotted as asterisks and are defined as data points that are 1.5 times the interquartile range.

Outliers can adversely affect the statistical analysis by:

- giving serious bias or influence to estimates that may be of less interest
- increasing the error variance and reducing the power of statistical tests
- decreasing normality (if non-random) and altering the odds of type I and II errors

A box and whisker plot of phosphorus concentration in straw is shown in Figure 7.1. This diagram demonstrates the issue of outliers in the dataset.

It is important to provide a reasonable sized dataset for comparison purposes. Where there is sufficient sample size (≥ 10) to calculate a 90th percentile of the data, the 90th percentile has been calculated.

7.1.1 Organics analytical data

Due to difficulties encountered during sample preparation, the limit of detection (LOD) for some analytes was elevated above the target limit of detection. This was particularly the case for many of the organics analyses where all the analytical results were less than a LOD. Due to the difficult nature of the matrices the LODs achieved varied across different samples.

The Environment Agency considers that these natural, non-waste materials do not contain the substances analysed for. A decision has been taken that in these cases the 90th percentile has been replaced by a target concentration corresponding to the lowest LOD actually achieved for any of the comparators for that substance. Those results are highlighted in **red** in the tables 7.1 to 7.8.

We consider this a reasonable and proportionate position.

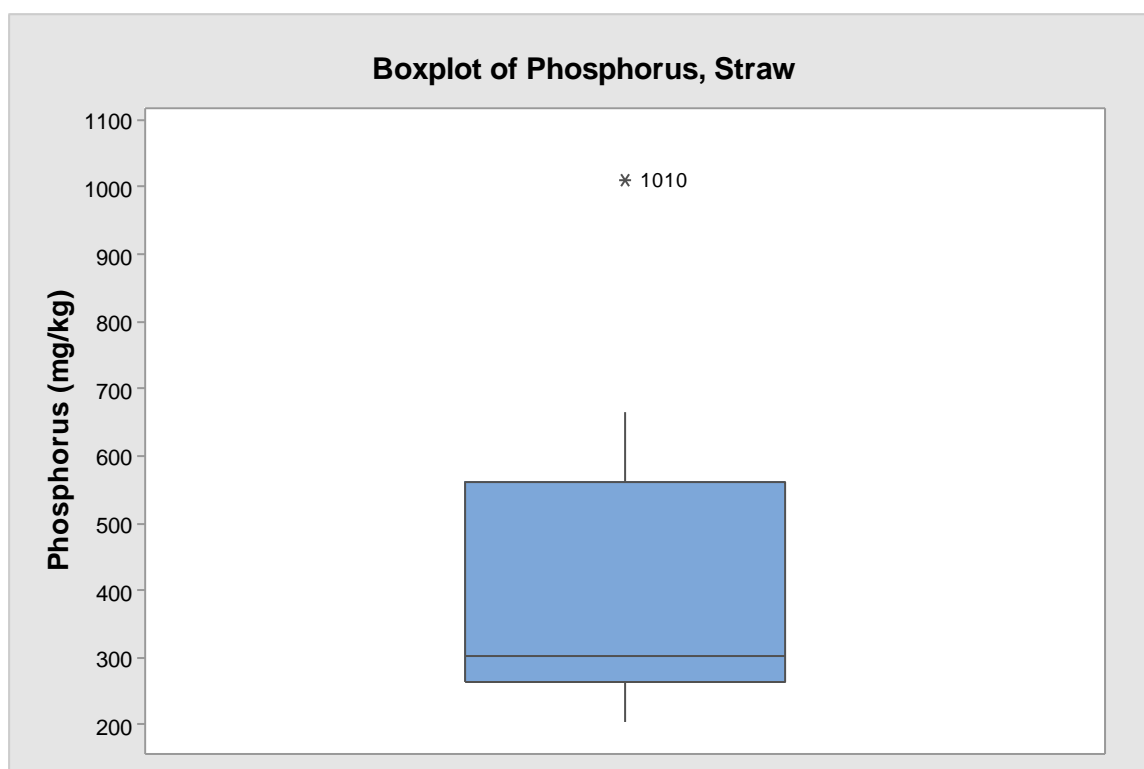


Figure 7.1 Boxplot of phosphorus, straw

7.2 Using the data tables

Data are presented in tables summarising:

- physical properties
- metals
- microbiological contaminants
- organic contaminants

We recommend comparing the concentrations of analytes in the comparators dataset to the concentrations in the waste-derived material, paying attention to the higher values. This comparison does not constitute a pass/fail test or an end of waste view. It will provide an indication of whether the waste material contains similar levels of analytes to non-waste materials and whether an end-of-waste application may be appropriate or that further analysis or improved treatment processes may be warranted.

Due to difficulties encountered during sample preparation, the limit of detection (LOD) for some analytes was elevated above the target limit of detection.

7.3 Primary data tables

Primary data are shown in Tables 7.1 to 7.8.

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Table 7.1 Primary data for straw: physical properties

Sample ID	Moisture content air dried @ 105°C	Dry solids @ 30°C	Dry solids @ 105°C	LoI @ 500°C	PSD 2–20 mm	PSD 20–50 mm	PSD > 50 mm	Loose bulk density	Conductivity	pH
	%	%	%	%	%	%	%	kg/m ³	mS/cm	
Straw 01	15.8	92.5	84.2	94.3	94.8	<0.1	<0.1	31	3.890	7.83
Straw 02	16.6	92.3	83.4	95.2	40.0	<0.1	<0.1	62	2.910	6.32
Straw 03	10.5	91.4	89.5	96.4	100.0	<0.1	<0.1	35	9.990	7.22
Straw 04	9.9	92.2	90.1	94.1	100.0	<0.1	<0.1	43	12.200	8.19
Straw 05	16.6	89.9	83.4	92.7	100.0	<0.1	<0.1	77	18.200	6.94
Straw 06	16.2	85.6	83.8	95.7	100.0	<0.1	<0.1	58	3.680	7.37
Straw 07	10.4	90.5	89.6	95.7	100.0	<0.1	<0.1	36	10.200	7.72
Straw 08	13.5	88.9	86.5	91.7	100.0	<0.1	<0.1	39	11.800	7.22
Straw 09	10.9	92.1	89.1	95.2	100.0	<0.1	<0.1	37	3.070	6.86
Straw 10	10.8	91.0	89.2	96.6	99.8	<0.1	<0.1	17	7.640	7.63
Mean	13.1	90.6	86.9	94.8	93.5	0.1	0.1	44	8.358	7.33
Median	12.2	91.2	87.8	95.2	100.0	0.1	0.1	38	8.815	7.30
Minimum	9.9	85.6	83.4	91.7	40.0	0.1	0.1	17	2.910	6.32
Maximum	16.6	92.5	90.1	96.6	100.0	0.1	0.1	77	18.200	8.19
No. of samples	10	10	10	10	10	10	10	10	10	10
90 th percentile	16.6	92.3	89.7	96.4	100.0	0.1	0.1	64	12.800	7.87
LOD	n/a	0.5	0.5	0.5	n/a	n/a	n/a	n/a	0.01	0.2

n/a = not applicable

Table 7.2 Primary data for straw: metals (mg/kg DW)

(a)

Sample ID	Al	Sb	As	Ba	Be	Bo	Cd	Ca	Cr	Cr VI	Co	Cu	Fe	Pb	Li
Straw 01	<50.0	<1	0.738	35.5	<0.1	2.30	<0.200	2060	<0.5	<0.6	<0.1	2.57	<200	<1	<1
Straw 02	53.8	<1	0.764	22.3	<0.1	24.30	0.262	11400	<0.5	<0.6	<0.1	2.13	<200	<1	<1
Straw 03	89.6	<1	0.912	16.7	<0.1	3.02	<0.200	3700	<0.5	<1.2	<0.1	1.70	<200	<1	<1
Straw 04	<50.0	<1	0.839	46.4	<0.1	4.11	<0.200	3890	<0.5	<1.2	<0.1	1.77	<200	<1	<1
Straw 05	70.7	<1	0.940	12.5	<0.1	19.20	<0.200	12300	<0.5	<0.6	<0.1	1.66	<200	<1	<1
Straw 06	67.9	<1	0.973	32.5	<0.1	22.30	0.283	13400	<0.5	<1.2	<0.1	4.17	<200	<1	<1
Straw 07	<50.0	<1	0.798	15.8	<0.1	5.07	<0.200	4450	<0.5	<0.6	<0.1	2.49	<200	<1	<1
Straw 08	<50.0	<1	0.898	18.3	<0.1	4.08	<0.200	3580	<0.5	<1.2	<0.1	1.45	<200	<1	<1
Straw 09	<50.0	<1	0.798	14.0	<0.1	2.94	<0.200	2730	<0.5	11	<0.1	1.62	<200	<1	<1
Straw 10	<50.0	<1	0.592	34.1	<0.1	4.22	<0.200	4460	<0.5	<0.6	<0.1	3.13	<200	<1	<1
Mean	58.2	1	0.825	24.8	0.1	9.15	0.215	6197	0.5	1.9	0.1	2.27	200	1	1
Median	50.0	1	0.819	20.3	0.1	4.17	0.200	4170	0.5	0.9	0.1	1.95	200	1	1
Minimum	50.0	1	0.592	12.5	0.1	2.30	0.200	2060	0.5	0.6	0.1	1.45	200	1	1
Maximum	89.6	1	0.973	46.4	0.1	24.30	0.283	13400	0.5	11	0.1	4.17	200	1	1
No. of samples	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
90 th percentile	72.6	1	0.943	36.6	0.1	22.50	0.264	12410	0.5	2.2	0.1	3.23	200	1	1
LOD	50	1	0.5	0.5	0.1	1	0.2	60	0.5	0.6	0.1	1	200	1	1

(b)

Sample ID	Mg	Mn	Hg	Mo	Ni	P	K	Se	Ag	Na	Sr	Tl	Sn	Ti	V	Zn
Straw 01	708	5.04	<0.2	<1.00	<0.6	1010	13000	<1	<1	289.0	4.36	<1	<1	<3	0.108	12.70
Straw 02	953	31.40	<0.2	<1.00	<0.6	301	8830	<1	<1	209.0	19.50	<1	<1	<3	0.120	11.10
Straw 03	357	11.30	<0.2	<1.00	<0.6	380	11100	<1	<1	159.0	4.68	<1	<1	<3	0.186	4.04
Straw 04	575	7.39	<0.2	1.65	<0.6	346	14600	<1	<1	1770.0	14.70	<1	<1	<3	<0.100	2.90
Straw 05	1040	7.65	<0.2	<1.00	<0.6	272	16200	<1	<1	465.0	46.10	<1	<1	<3	0.159	9.37
Straw 06	1180	10.10	<0.2	<1.00	<0.6	666	3470	<1	<1	151.0	47.90	<1	<1	<3	0.136	10.90
Straw 07	196	12.30	<0.2	<1.00	<0.6	262	15700	<1	<1	228.0	16.60	<1	<1	<3	<0.100	2.22
Straw 08	506	23.80	<0.2	3.47	<0.6	304	13100	<1	<1	41.1	12.00	<1	<1	<3	<0.100	2.93
Straw 09	748	5.01	<0.2	<1.00	<0.6	291	12300	<1	<1	24.2	8.10	<1	<1	<3	<0.100	3.98
Straw 10	460	7.91	<0.2	<1.00	<0.6	620	16800	<1	<1	341.0	9.31	<1	<1	<3	<0.100	4.81
Mean	672	12.19	0.2	1.31	0.6	445.2	12510	1	1	367.7	18.33	1	1	3	0.121	6.50
Median	642	9.01	0.2	1.00	0.6	325	13050	1	1	218.5	13.35	1	1	3	0.104	4.43
Minimum	196	5.01	0.2	1.00	0.6	262	3470	1	1	24.2	4.36	1	1	3	0.100	2.22
Maximum	1180	31.40	0.2	3.47	0.6	1010	16800	1	1	1770.0	47.90	1	1	3	0.186	12.70
No. of samples	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
90 th percentile	1054	24.56	0.2	1.83	0.6	700.4	16260	1	1	595.5	46.28	1	1	3	0.162	11.26
LOD	20	2	0.2	1	0.6	10	50	1	1	10	1	1	1	3	0.1	2

Table 7.3 Primary data for straw: microbiological contaminants

Sample ID	E. coli confirmed	E. coli presumptive	Salmonella
	No. per g WW	No. per g WW	Present/Absent (WW)
Straw 01	1	1	Abs
Straw 02	<1	<1	Abs
Straw 03	<9	<9	Abs
Straw 04	380	380	Abs
Straw 05	<9	<9	Abs
Straw 06	<9	18	Abs
Straw 07	<9	<9	Abs
Straw 08	<9	<9	Abs
Straw 09	<9	<9	Abs
Straw 10	<1	<1	Abs
Mean	43.7	44.6	n/a
Median	9	9	n/a
Minimum	1	1	n/a
Maximum	380	380	n/a
No. of samples	10	10	10
90 th percentile	46.1	54.2	n/a
LOD	1	1	n/a

Abs = absent; n/a = not applicable

Table 7.4 Primary data for straw: PAHs (USEPA 16) (µg/kg DW)

(a)

Sample ID	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene
Straw 01	2.67	<20	<400	<400	<400	<400	<100	<400
Straw 02	5.64	<9	<200	<200	<200	<200	<50	<200
Straw 03	6.16	<20	<400	<400	<400	<400	<30	<400
Straw 04	9.92	<20	<400	<400	<400	<400	<20	<400
Straw 05	<1.00	<10	<300	<300	<300	<300	<10	<300
Straw 06	11.00	<20	<300	<300	<300	<300	<20	<300
Straw 07	<2.00	<20	<400	<400	<400	<400	<100	<400
Straw 08	<2.00	<20	<300	<300	<300	<300	<30	<300
Straw 09	<2.00	<20	<400	<400	<400	<400	<100	<400
Straw 10	<2.00	<20	<400	<400	<400	<400	<100	<400
Mean	4.44	18	350	350	350	350	56	350
Median	2.34	20	400	400	400	400	40	400
Minimum	1.00	9	200	200	200	200	10	200
Maximum	11.00	20	400	400	400	400	100	400
No. of samples	10	10	10	10	10	10	10	10
90 th percentile	10.03	9	200	200	200	200	10	200
LOD	0.1	1	20	20	20	20	6	20

Numbers in red represent target concentrations, see Section 7.1.1 above for the full explanation

(b)

Sample ID	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
Straw 01	<600	<60	<400	<200	<600	<200	<400	<400
Straw 02	<300	<30	<200	<90	<300	<90	<200	<200
Straw 03	<500	<50	<400	<200	<500	<200	<400	<400
Straw 04	<500	<50	<400	<200	<500	<200	<400	<400
Straw 05	<400	<40	<300	<100	<400	<100	<300	<300
Straw 06	<500	<50	<300	<200	<500	<200	<300	<300
Straw 07	<700	<70	<400	<200	<700	<200	<400	<400
Straw 08	<500	<50	<300	<200	<500	<200	<300	<300
Straw 09	<600	<60	<400	<200	<600	<200	<400	<400
Straw 10	<600	<60	<400	<200	<600	<200	<400	<400
Mean	520	52	350	179	520	179	350	350
Median	500	50	400	200	500	200	400	400
Minimum	300	30	200	90	300	90	200	200
Maximum	700	70	400	200	700	200	400	400
No. of samples	10	10	10	10	10	10	10	10
90 th percentile	300	30	200	90	300	90	200	200
LOD	30	3	20	10	30	10	20	20

Numbers in red represent target concentrations, see Section 7.1.1 above for the full explanation

Table 7.5 Primary data for straw: organochlorine pesticides (OCPs) (µg/kg DW)

(a)

Sample ID	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,3,5-Trichlorobenzene	2,3,5,6-Tetrachloroaniline	2,3,5,6-Tetrachloroanisole	Aldrin	Chlordane -cis [Chlordane – alpha]	Chlordane -trans [Chlordane - gamma]
Straw 01	<20	<20	<20	<40	<20	<40	<40	<40
Straw 02	<7	<7	<9	<20	<9	<20	<20	<20
Straw 03	<10	<10	<20	<40	<20	<40	<40	<40
Straw 04	<10	<10	<20	<40	<20	<40	<40	<40
Straw 05	<10	<10	<10	<30	<10	<30	<30	<30
Straw 06	<10	<10	<20	<30	<20	<30	<30	<30
Straw 07	<20	<20	<20	<40	<20	<40	<40	<40
Straw 08	<10	<10	<20	<30	<20	<30	<30	<30
Straw 09	<20	<20	<20	<40	<20	<40	<40	<40
Straw 10	<20	<20	<20	<40	<20	<40	<40	<40
Mean	14	14	18	35	18	35	35	35
Median	10	10	20	40	20	40	40	40
Minimum	7	7	9	20	9	20	20	20
Maximum	20	20	20	40	20	40	40	40
No. of samples	10	10	10	10	10	10	10	10
90 th percentile	7	7	9	20	9	20	20	20
LOD	0.8	0.8	1	2	1	2	2	2

Numbers in red represent target concentrations, see Section 7.1.1 above for the full explanation

(b)

Sample ID	Chlorpropham	DDD -op	DDE -op	DDE -pp	DDT -op + DDD pp	DDT -pp	Dichlobenil	Dieldrin
Straw 01	<40	<40	<40	<40	<2	<40	<20	<40
Straw 02	<20	<20	<20	<20	<2	<20	<8	<20
Straw 03	<40	<40	<40	<40	<40	<40	<20	<40
Straw 04	<40	<40	<40	<40	<40	<40	<20	<40
Straw 05	<30	<30	<30	<30	<2	<30	<10	<30
Straw 06	<30	<30	<30	<30	<2	<30	<20	<30
Straw 07	<40	<40	<40	<40	<2	<40	<20	<40
Straw 08	<30	<30	<30	<30	<2	<30	<10	<30
Straw 09	<40	<40	<40	<40	<2	<40	<20	<40
Straw 10	<40	<40	<40	<40	<2	<40	<20	<40
Mean	35	35	35	35	10	35	17	35
Median	40	40	40	40	2	40	20	40
Minimum	20	20	20	20	2	20	8	20
Maximum	40	40	40	40	40	40	20	40
No. of samples	10	10	10	10	10	10	10	10
90 th percentile	20	20	20	20	2	20	8	20
LOD	2	2	2	2	2	2	0.9	2

Numbers in red represent target concentrations, see Section 7.1.1 above for the full explanation

(c)

Sample ID	Endosulfan A	Endosulfan B	Endrin	HCH -alpha	HCH -beta	HCH -delta	HCH -epsilon	HCH -gamma [lindane]
Straw 01	<40	<40	<40	<40	<40	<40	<40	<40
Straw 02	<20	<20	<20	<20	<20	<20	<20	<20
Straw 03	<40	<40	<40	<40	<40	<40	<40	<40
Straw 04	<40	<40	<40	<40	<40	<40	<40	<40
Straw 05	<30	<30	<30	<30	<30	<30	<30	<30
Straw 06	<30	<30	<30	<30	<30	<30	<30	<30
Straw 07	<40	<40	<40	<40	<40	<40	<40	<40
Straw 08	<30	<30	<30	<30	<30	<30	<30	<30
Straw 09	<40	<40	<40	<40	<40	<40	<40	<40
Straw 10	<40	<40	<40	<40	<40	<40	<40	<40
Mean	35	35	35	35	35	35	35	35
Median	40	40	40	40	40	40	40	40
Minimum	20	20	20	20	20	20	20	20
Maximum	40	40	40	40	40	40	40	40
No. of samples	10	10	10	10	10	10	10	10
90 th percentile	20	20	20	20	20	20	20	20
LOD	2	2	2	2	2	2	2	2

Numbers in red represent target concentrations, see Section 7.1.1 above for the full explanation

(d)

Sample ID	Heptachlor	Heptachlor epoxide -cis	Heptachlor epoxide -trans	Hexachlorobenzene	Hexachlorobutadiene	Isodrin	Metazachlor	Methoxychlor
Straw 01	<40	<40	<40	<20	<20	<40	<40	<40
Straw 02	<20	<20	<20	<8	<8	<20	<20	<20
Straw 03	<40	<40	<40	<20	<20	<40	<40	<40
Straw 04	<40	<40	<40	<20	<20	<40	<40	<40
Straw 05	<30	<30	<30	<10	<10	<30	<30	<30
Straw 06	<30	<30	<30	<20	<20	<30	<30	<30
Straw 07	<40	<40	<40	<20	<20	<40	<40	<40
Straw 08	<30	<30	<30	<10	<10	<30	<30	<30
Straw 09	<40	<40	<40	<20	<20	<40	<40	<40
Straw 10	<40	<40	<40	<20	<20	<40	<40	<40
Mean	35	35	35	17	17	35	35	35
Median	40	40	40	20	20	40	40	40
Minimum	20	20	20	8	8	20	20	20
Maximum	40	40	40	20	20	40	40	40
No. of samples	10	10	10	10	10	10	10	10
90 th percentile	20	20	20	8	8	20	20	20
LOD	2	2	2	0.9	0.9	2	2	2

Numbers in red represent target concentrations, see Section 7.1.1 above for the full explanation

(e)

Sample ID	Pendimethalin	Permethrin -cis	Permethrin -trans	Propachlor	Tecnazene	Trifluralin	Vinclozolin
Straw 01	<40	<40	<40	<40	<40	<20	<40
Straw 02	<20	<20	<20	<20	<20	<8	<20
Straw 03	<40	<40	<40	<40	<40	<20	<40
Straw 04	<40	<40	<40	<40	<40	<20	<40
Straw 05	<30	<30	<30	<30	<30	<10	<30
Straw 06	<30	<30	<30	<30	<30	<20	<30
Straw 07	<40	<40	<40	<40	<40	<20	<40
Straw 08	<30	<30	<30	<30	<30	<10	<30
Straw 09	<40	<40	<40	<40	<40	<20	<40
Straw 10	<40	<40	<40	<40	<40	<20	<40
Mean	35	35	35	35	35	17	35
Median	40	40	40	40	40	20	40
Minimum	20	20	20	20	20	8	20
Maximum	40	40	40	40	40	20	40
No. of samples	10	10	10	10	10	10	10
90 th percentile	20	20	20	20	20	8	20
LOD	2	2	2	2	2	0.9	2

Numbers in red represent target concentrations, see Section 7.1.1 above for the full explanation

Table 7.6 Primary data for straw: PCBs (µg/kg DW)

(a)

Sample ID	PCB-008	PCB-020	PCB-028	PCB-035	PCB-052	PCB-077	PCB-101	PCB-105	PCB-118
Straw 01	<40	<40	<2	<40	<20	<40	<40	<20	<20
Straw 02	<20	<20	<2	<20	<9	<20	<20	<9	<9
Straw 03	<40	<40	<40	<40	<20	<40	<40	<20	<20
Straw 04	<40	<40	<40	<40	<20	<40	<40	<20	<20
Straw 05	<30	<30	<20	<30	<10	<30	<30	<10	<10
Straw 06	<30	<30	<20	<30	<20	<30	<30	<20	<20
Straw 07	<40	<40	<40	<40	<20	<40	<40	<20	<20
Straw 08	<30	<30	<20	<30	<20	<30	<30	<20	<20
Straw 09	<40	<40	<40	<40	<20	<40	<40	<20	<20
Straw 10	<40	<40	<2	<40	<20	<40	<40	<20	<20
Mean	35	35	23	35	18	35	35	18	18
Median	40	40	20	40	20	40	40	20	20
Minimum	20	20	2	20	9	20	20	9	9
Maximum	40	40	40	40	20	40	40	20	20
No. of samples	10	10	10	10	10	10	10	10	10
90 th percentile	20	20	2	20	9	20	20	9	9
LOD	2	2	2	2	1	2	2	1	1

Numbers in red represent target concentrations, see Section 7.1.1 above for the full explanation

(b)

Sample ID	PCB-126	PCB-128	PCB-138	PCB-149	PCB-153	PCB-156	PCB-169	PCB-170	PCB-180
Straw 01	<20	<20	<20	<20	<20	<20	<20	<2	<20
Straw 02	<9	<9	<9	<9	<9	<8	<8	<2	<9
Straw 03	<20	<20	<20	<20	<20	<20	<20	<40	<20
Straw 04	<20	<20	<20	<20	<20	<20	<20	<40	<20
Straw 05	<10	<10	<10	<10	<10	<10	<10	<20	<10
Straw 06	<20	<20	<20	<20	<20	<20	<20	<20	<20
Straw 07	<20	<20	<20	<20	<20	<20	<20	<2	<20
Straw 08	<20	<20	<20	<20	<20	<10	<10	<20	<20
Straw 09	<20	<20	<20	<20	<20	<20	<20	<40	<20
Straw 10	<20	<20	<20	<20	<20	<20	<20	<2	<20
Mean	18	18	18	18	18	17	17	19	18
Median	20	20	20	20	20	20	20	20	20
Minimum	9	9	9	9	9	8	8	2	9
Maximum	20	20	20	20	20	20	20	40	20
No. of samples	10	10	10	10	10	10	10	10	10
90 th percentile	9	9	9	9	9	8	8	2	9
LOD	1	1	1	1	1	0.9	0.9	2	1

Numbers in red represent target concentrations, see Section 7.1.1 above for the full explanation

Table 7.7 Primary data for straw: phenols (µg/kg DW)

(a)

Sample ID	2,3,4,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4-Dichlorophenol	2,4-Dinitrophenol	2-Nitrophenol	3,4-Dimethylphenol [3,4-Xylenol]	3,5-Dimethylphenol [3,5-Xylenol]
Straw 01	<20000	<20000	<20000	<20000	<20000	<20000	<20000
Straw 02	<20000	<20000	<20000	<20000	<20000	<20000	<20000
Straw 03	<20000	<20000	<20000	<20000	<20000	<20000	<20000
Straw 04	<20000	<20000	<20000	<20000	<20000	<20000	<20000
Straw 05	<20000	<20000	<20000	<20000	<20000	<20000	<20000
Straw 06	<20000	<20000	<20000	<20000	<20000	<20000	<20000
Straw 07	<20000	<20000	<20000	<20000	<20000	<20000	<20000
Straw 08	<20000	<20000	<20000	<20000	<20000	<20000	<20000
Straw 09	<20000	<20000	<20000	<20000	<20000	<20000	<20000
Straw 10	<5000	<5000	<5000	<5000	<5000	<5000	<5000
Mean	18500	18500	18500	18500	18500	18500	18500
Median	20000	20000	20000	20000	20000	20000	20000
Minimum	5000	5000	5000	5000	5000	5000	5000
Maximum	20000	20000	20000	20000	20000	20000	20000
No. of samples	10	10	10	10	10	10	10
90 th percentile	5000	5000	5000	5000	5000	5000	5000
LOD	1000	1000	1000	1000	1000	1000	1000

Numbers in red represent target concentrations, see Section 7.1.1 above for the full explanation

(b)

Sample ID	4-Chloro-3-methylphenol [<i>p</i> -chloro- <i>m</i> -cresol]	4-Methylphenol [<i>p</i> -Cresol]	DNOC	Dinoseb [2-Methyl-n-propyl-4,6-dinitrophenol]	Pentachlorophenol	Phenol	Resorcinol [1,3-Dihydroxybenzene]
Straw 01	<20000	<20000	<20000	<20000	<20000	<20000	<20000
Straw 02	<20000	<20000	<20000	<20000	<20000	<20000	<20000
Straw 03	<20000	<20000	<20000	<20000	<20000	<20000	<20000
Straw 04	<20000	<20000	<20000	<20000	<20000	<20000	<20000
Straw 05	<20000	<20000	<20000	<20000	<20000	<20000	<20000
Straw 06	<20000	<20000	<20000	<20000	<20000	<20000	<20000
Straw 07	<20000	<20000	<20000	<20000	<20000	<20000	<20000
Straw 08	<20000	<20000	<20000	<20000	<20000	<20000	<20000
Straw 09	<20000	<20000	<20000	<20000	<20000	<20000	<20000
Straw 10	<5000	<5000	<5000	<5000	<5000	<5000	<5000
Mean	18500	18500	18500	18500	18500	18500	18500
Median	20000	20000	20000	20000	20000	20000	20000
Minimum	5000	5000	5000	5000	5000	5000	5000
Maximum	20000	20000	20000	20000	20000	20000	20000
No. of samples	10	10	10	10	10	10	10
90 th percentile	5000	5000	5000	5000	5000	5000	5000
LOD	1000	1000	1000	1000	1000	1000	1000

Numbers in red represent target concentrations, see Section 7.1.1 above for the full explanation

Table 7.8 Primary data for straw: BTEX (µg/kg DW)

Sample ID	1,2-Dimethylbenzene [o-Xylene]	Benzene	Dimethylbenzene sum of (1,3- 1,4-)	Ethylbenzene	Toluene [Methylbenzene]
Straw 01	<10	<10	<20	<5	<30
Straw 02	<9	<9	<20	<4	<30
Straw 03	<10	<10	2.48	0.849	6.02
Straw 04	<7	<7	<10	0.834	3.86
Straw 05	<5	<5	<10	<3	<20
Straw 06	<6	<6	<10	<3	<20
Straw 07	<6	<6	<10	<3	<20
Straw 08	<9	<9	<20	<5	3.31
Straw 09	1.44	<10	4.03	0.799	5.98
Straw 10	<20	<20	<40	<10	<60
Mean	8.34	9	14.65	3.548	19.92
Median	8	9	10	3	20
Minimum	1.44	5	2.48	0.799	3.31
Maximum	20	20	40	10	60
No. of samples	10	10	10	10	10
90 th percentile	11	5	22	5.5	33
LOD	1	1	2	0.5	3

Numbers in red represent target concentrations, see Section 7.1.1 above for the full explanation

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List of abbreviations

Ag	Silver
Al	Aluminium
As	Arsenic
B	Boron
Ba	Barium
Be	Beryllium
BTEX	Benzene, toluene, ethylbenzene, xylene
C	Carbon
Ca	Calcium
Cd	Cadmium
Chromium VI	Chromium Hexavalent
Co	Cobalt
Cr	Chromium
Cu	Copper
DAD	diode array detection
DCM	dichloromethane
DW	dry weight
EC	electrical conductivity
Fe	Iron
GCMS	gas chromatography–mass spectrometry
Hg	Mercury
HPLC	high performance liquid chromatography
ICP	inductively coupled plasma
HR	high resolution
ICP-OES	inductively coupled plasma optical emission spectrometry
ITEQ	International Toxicity Equivalents
K	Potassium
LE	Leeds laboratory of NLS
Li	Lithium
LOD	limit of detection
LoI	loss on ignition
MCERTS	Environment Agency's Monitoring Certification Scheme

Mg	Magnesium
Mn	Manganese
Mo	Molybdenum
N	Nitrogen
Na	Sodium
Ni	Nickel
NLS	National Laboratory Service [Environment Agency]
NO ₂	Nitrogen dioxide
OCP	organochlorine pesticide
P	Phosphorus
PAH	polycyclic aromatic hydrocarbon
Pb	Lead
PCB	polychlorinated biphenyl
PSD	particle size distribution
SAL	Scientific Analysis Laboratories Limited
Sb	Antimony
Se	Selenium
Sn	Tin
Sr	Strontium
TC	total carbon
Ti	Titanium
Tl	Thallium
TN	total nitrogen
USEPA	United States Environmental Protection Agency
V	Vanadium
WW	wet weight
Zn	Zinc

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From: Oliver Matthews MAILER-DAEMON 
Subject: Permit Application - Ref. WPCC 10788
Date: 8 July 2021 at 10:32
To: waste.permittingenquiries@cyfoethnaturiolcymru.gov.uk
Cc: Caroline Platt 

OM

Microsoft Exchange Server;converted from html;

Dear Sir / Madam,

I am writing in respect of the above application which was acknowledged as received on the 21st May 2021.

Included with the Application package were details of sampling and analysis results for wood waste with comparison to various standards and parameters. Additionally, there were details included for on-going sampling of the various wood waste materials being received by the applicant. The sampling of incoming materials has continued since the application was submitted and there are now over 100 sets of analysis results comprised of both treated and clean wood waste streams. This provides a wider and more detailed range of information relating to the materials being received by the applicant and may greatly assist with determination of the application.

The applicants would be more than happy to pass on this information if it will assist with the determination and help add context to the nature of the application and process being undertaken.

Yours faithfully,

Oliver Matthews MSc AMIOA MCIEH
Principal Consultant




website: www.ecl.world



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From: Waste Permitting Enquiries waste.permittingenquiries@cyfoethnaturiolcymru.gov.uk 
Subject: PAN-014252 - Platts Agriculture
Date: 16 July 2021 at 16:32



Dear Mr. Matthews,

We have not yet carried out the duly made assessment of your application submitted 21 May 2021. Before we do, we would like to make you aware that we have noted the pre-application advice that you were given by the local area officer on 09/07/20.

As per the attached, we advised you of our position that treated waste wood cannot be used to produce animal bedding and that whilst an Environmental Permit would allow the treatment and recovery of waste, that there are limited recovery options for non-hazardous treated waste wood (i.e. wood that has been treated by veneers, MDF, glues, varnishes, stains etc.). Recovery of waste means that the outputs are suitable for the intended purpose, and that treated non-hazardous waste wood used to produce animal bedding is not suitable as a waste recovery operation.

We note that your non-technical summary submitted with the application states:

"Platts propose to undertake one Specified Waste Operation as follows:

☐ *storage of non-hazardous waste wood with treatment limited to pulverising and removal of wood dust from clean wood waste for use as animal bedding material and pulverising of treated wood waste to produce wood dust for use as a cubicle conditioner within the agricultural livestock sector.*

You should be aware that *should* your application be duly made, we will determine your application in accordance with the advice that you were made aware of during pre-application, that treated non-hazardous waste wood used to produce animal bedding is not suitable as a waste recovery operation.

We are advising you of this as it appears as though 'cubicle conditioner' is used in the bedding of livestock. We are not asking for any further information from you at this stage but just want to make our position clear before we carry out the duly made assessment.

We will continue to process the application unless directed otherwise by yourselves.

Kind regards,

Kate

Kate Thomas

Swyddog Arbenigol Arweiniol Trwyddedu (Gwastraff) / Lead Specialist Officer (Waste)

Cyfoeth Naturiol Cymru / Natural Resources Wales

[REDACTED] Cardiff

In light of recent events, I am currently working from home and as such not contactable on the phone. If you need to get in touch, please email me and I will respond as quickly as possible.

Yn sgil y datblygiadau diweddaraf rwy'n gweithio gartref ar hyn o bryd ac felly nid mewn cyswllt ar y ffôn. Os oes angen i chi gysylltu, anfonwch e-bost ataf os gwelwch yn dda a byddaf yn ymateb cyn gynted â phosib.

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Notice of request for more information

Environmental Permitting (England and
Wales) Regulations 2016

Notice requiring further information

To:

Company Secretary
Platts Agriculture Limited
Miners Park
Miners Road
Llay Industrial Estate North
Llay
Wrexham
LL12 0PJ

CC: Oliver Matthews - [REDACTED]

Application number: PAN-016818

Natural Resources Wales, in exercise of its powers under paragraph 4 of Part 1 of Schedule 5 of the above Regulations, requires you to provide the information detailed in the attached schedule. The information is required in order to determine your application for a permit, dated **13/04/22**.

The information requested should be sent to the following address by **17/08/2022**.

Information should be sent to:

[REDACTED]
waste.permittingenquiries@cyfoethnaturiolcymru.gov.uk,
and
[REDACTED]

Name	Date
Kate Thomas	19/07/2022

Authorised on behalf of Natural Resources Wales

Schedule

1. End of waste

We have assessed the 'Environmental Permitting Technical Requirements' document submitted as part of your application (document reference ECL Ref: PLAT.02.01/EPTR Version: Issue 1 January 2022) and we require further information. We refer to this document as EPTR hereon in.

ACTION: Provide further information to demonstrate that the processed wood waste meets 'end of waste'. This must be done via an individual assessment on a case-by-case basis produced in accordance with Article 6 of the revised Waste Framework Directive, including procedures you will have in place to ensure that this is carried out for all waste treated on site.	
Reference number	Detail
1.1.1	<p>Your application is for a bespoke waste facility for the storage and treatment of wood waste to produce animal bedding and cubicle conditioner for use within the agricultural livestock sector.</p> <p>Section 2.1.4 of the EPTR states: <i>'As part of the Permit application, it is proposed that the processed wood waste material should be considered a 'product' and should no longer be considered a waste, based on the PAS111 standards and protocols'.</i></p> <p>End of waste (EoW) can be determined using one of three methods:</p> <ul style="list-style-type: none">• compliance with end of waste regulations• meeting a quality protocol• through an individual assessment on a case-by-case basis <p>'PAS 111 -Specification for the requirements and test methods for processing waste wood' is an industry standard – it is not a quality protocol or a regulatory standard. A quality protocol does not exist for wood or wood related materials. End of waste regulations do not exist for wood or wood related materials. As a result, as no other means of demonstrating EoW are available, in order for regulatory controls to no longer apply to this material it would need to be determined via an individual assessment on a case-by-case basis. This requires the submission of evidence to demonstrate that the claim of EoW has a valid basis.</p> <p>A case-by-case assessment of EoW can be made by taking into account waste law principles, relevant case law and the revised Waste Framework Directive. Article 6 (1) of the rWFD sets out the harmonised criteria that must be met for a substance, material, or object to achieve end of waste status, this can be referred to as the end of waste test.</p>

	<p>These criteria are:</p> <ol style="list-style-type: none"> 1. it will be used for specific purposes 2. there is an existing market or demand for it 3. it fulfils the technical requirements for the specific purposes and meets the existing legislation and standards applicable to products 4. the use will not lead to overall adverse environmental or human health impacts <p>For a case-by-case assessment, the information you provide should also reflect where necessary the criteria in Article 6(2)(a) to (e) of the rWFD, which are:</p> <p><i>(a) permissible waste input material for the recovery operation</i> <i>(b) allowed treatment processes and techniques</i> <i>(c) quality criteria for end of waste materials resulting from the recovery operation in line with the applicable product standards, including limit values for pollutants where necessary</i> <i>(d) requirements for management systems to demonstrate compliance with the end of waste criteria, including for quality control and self-monitoring, and accreditation</i> <i>(e) a requirement for a statement of conformity</i></p> <p>taking into account limit values for pollutants and any possible adverse environmental and human health impacts.</p> <p>The information you provide should be sufficiently detailed and address the above requirements. Further information can be found on our website Natural Resources Wales / Meeting the end of waste test.</p> <p>It is important to remember that any variability of the feedstock needs to be addressed in each individual assessment, and evidence needs to suitably consider this variability. This is particularly important given the waste codes you propose to accept include wood waste from Chapter 17 – Construction and demolition wastes.</p> <p>Full traceability needs to be in place to ensure no cross contamination with any clean and untreated wood being kept totally separate from other wood.</p>
--	--

Ffôn/Tel 0300 065 4487

Ffacs/Fax 0300 065 3001

Ebost/Email kate.thomas03@cyfoethnaturiolcymru.gov.uk

kate.thomas03@naturalresourceswales.gov.uk

Gwasanaeth Trwyddedu (Caerdydd), Cyfoeth Naturiol Cymru, Tŷ Cambria, 29 Heol Casnewydd, Caerdydd. CF24 0TP

Permitting Service (Cardiff), Natural Resources Wales, Cambria House, 29 Newport Road, Cardiff. CF24 0TP

Gwefan/Website www.cyfoethnaturiolcymru.gov.uk

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322-

Croesewir gohebiaeth yn y Gymraeg a'r Saesneg
Correspondence welcomed in Welsh and English

	<p>We expect the case-by-case assessment to determine at which point in the waste operation that the material becomes end of waste.</p> <p>Material would need to be treated as waste up until the point at which it meets end of waste. If it does not meet end of waste, regulatory controls would apply, and the application would need to demonstrate that the activity meets the standards set out in the relevant guidance. This includes (<i>but is not limited to</i>) “Natural Resources Wales Fire Prevention & Mitigation Plan Guidance – Waste Management, Guidance Note 16”. Therefore, we may require you to submit further information depending on your response to this Schedule 5 Notice.</p> <p><u>Please note:</u></p> <p>Sections 3.1 and 4.3.3 of PAS 111 (<i>as quoted below</i>) are clear that treated wood (i.e., anything not Grade A in the PAS 111 specifications) should not be used as a feedstock for animal bedding or soiling materials. The reason treated wood is not allowed for the purposes of animal bedding/husbandry is due to:</p> <ul style="list-style-type: none"> ○ Direct animal welfare concerns ○ Indirect animal welfare and environmental concerns when the material finds its way through onto land usually via manure systems. <p><i>Section 3.1 defines animal bedding as ‘material, cut or shredded, to provide bedding and soiling material for livestock’ and domestic pets.’ Section 4.3.3 states ‘Animal bedding: Recovered wood intended for PAS 111 compliant animal bedding shall meet minimum testing requirements as set out in PAS 111. Only grade A wood should be used as input, and should be tested in accordance with 6.3.1 and 6.3.2’</i></p>
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(<https://www.gov.uk/government/organisations/environment-agency>).

Form

Guidance for the end of waste request form

Updated 4 October 2021

Applies to England

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Follow this guidance to complete your [end of waste request form](https://www.gov.uk/government/publications/get-an-opinion-from-the-definition-of-waste-service) (<https://www.gov.uk/government/publications/get-an-opinion-from-the-definition-of-waste-service>) correctly. The guidance follows the same structure as the form.

Before you fill in the form

Get initial advice

The definition of waste service can give you initial advice on the information you need to give in the form. For example, on:

- selecting appropriate comparators
- discussions about intended end use

This is a service you pay for so, before you request initial advice, you should read the published guidance on:

- [check if your material is waste](https://www.gov.uk/guidance/check-if-your-material-is-waste) (<https://www.gov.uk/guidance/check-if-your-material-is-waste>)
- [how to use the definition of waste service](https://www.gov.uk/government/publications/get-an-opinion-from-the-definition-of-waste-service) (<https://www.gov.uk/government/publications/get-an-opinion-from-the-definition-of-waste-service>)

Consider the requirements of the end of waste test in the Waste Framework Directive 2008

Article 6 of the Waste Framework Directive 2008 (as amended by Directive (EU) 2018/851) provides that waste which has undergone a recycling or other recovery operation is considered to have ceased to be waste, if all the following conditions are met:

- 6 (1) (a) the substance or object is to be used for specific purposes
- 6 (1) (b) a market or demand exists for such a substance or object
- 6 (1) (c) the substance or object fulfils the technical requirements for the specific purposes and meets the existing legislation and standards applicable to products
- 6 (1) (d) the use of the substance or object will not lead to overall adverse environmental or human health impacts

For case by case assessments, the following criteria should also be reflected in an end of waste decision (where necessary):

- 6 (2) (a) permissible waste input material for the recovery operation

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- 6 (2) (b) allowed treatment processes and techniques
- 6 (2) (c) quality criteria for end of waste materials resulting from the recovery operation in line with the applicable product standards, including limit values for pollutants where necessary
- 6 (2) (d) requirements for management systems to demonstrate compliance with the end of waste criteria, including for quality control and self-monitoring, and accreditation
- 6 (2) (e) a requirement for a statement of conformity

Prepare detailed information

The end of waste request form contains the questions you must answer. The definition of waste service will use the information you give to decide if the article 6 end of waste test has been met.

It is essential that you include detailed information with the form. The definition of waste service will not technically review it until you give all the information that's needed.

Sometimes they may have to ask for extra information when they look at the information you gave in the form in more detail. This will cost you more and can mean that it takes them longer to make a decision. Include the correct detailed information in the form to avoid this delay.

For the purposes of the form, the term 'waste' refers to the material considered waste before any treatment or processing. The term 'final waste-derived material' refers to the final material, substance or object after all processing, which you propose has achieved end of waste status.

A. About the operator

A1 Main contact details

Include details for the main contact for the request. Apart from queries regarding billing or invoices, the main contact is the person the definition of waste service will contact for all other queries about the request (including information requests, updates and administration queries).

A2 Operator details

Give details for the company, partnership, public body or individual making the request, or on whose behalf the request is being made.

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In many cases, the operator will be the company who receive or generate the waste and who treat and process the waste to produce the final waste-derived material. However, for some requests, this may be the company who wish to source the final waste-derived material directly for subsequent use (and are submitting to assess end of waste status of the material they are to receive). You should give details for the company who are organising and financing the request (that is, the main operator).

A3 Site details

A3.1

Give details for the site at which the main treatment and processing of the final waste-derived material will take place. This will be the site where the final waste-derived material is produced and, in most cases, will be the site at which the material is proposed to have achieved end of waste status.

If this site is owned by a company other than the operator detailed in A2, give details of this company in this section.

A4 Billing information

Detail the relevant contact for all communications about billing and payment for the request. This will be the contact who the definition of waste service will send invoices to for completed work.

A5. Operator information

Give details for the company detailed in question A2, outlining a general overview of the company. Details should include:

- a summary of the main purpose of the company and its activities
- the size of the company and the number of sites operated
- the products and materials processed and generated
- any other details you identify as important for us to understand the general business of the company

B. Executive summary

B1

You must include an executive summary document. You should limit the executive summary to a maximum of 4 pages. The executive summary must give an overview of the request, summarising the main points identified. This is so the

definition of waste service can understand the general proposal within the request in terms of:

- the companies and stakeholders involved
- wastes for input
- the treatment processes
- materials generated
- the final use of the final waste-derived material
- an identified final market

C. Process inputs

This section is about the non-waste and waste feedstocks used to produce the final waste-derived material. These are the feedstocks that will be used in the process on the site identified in question A3.1, that is, the process which generates the final waste-derived material.

C1

Give a list of all inputs into the process which generates the final waste-derived material (both wastes and non-wastes). Make sure you give corresponding European Waste Catalogue (EWC) codes for all the wastes listed.

Make sure the list includes all inputs which may feasibly be used within the process, even if they are not used in every instance. Identify any inputs which may be used in this way and explain when and why they are used.

C3

Give permit details for any regulated activities which generate or supply (or both) the waste for use in the production of the final waste-derived material (which you identified in question C2).

C4

For all the wastes identified for question C1, give information on how each waste arises.

Where waste is generated from another process (for example, bottom ash generated from a combustion plant following the burning of biomass), give information on the inputs to this process (for example, all inputs into the combustion plant). State whether the inputs to the process which generates the waste (such as combustion) are consistent. If not consistent, explain how varying

inputs to the process might affect the composition of the waste generated. Make sure to include discussion of how you considered the varying inputs when collecting the sampling data given for question C6.

This question is to identify the source of all wastes used in the production of the final waste-derived material and the potential for variability in these wastes.

C5

This question is to identify what happens from when the wastes arise to acceptance onto site for use in producing the final waste-derived material.

C6

In most cases, you need to give samples of the input wastes and present the data in Excel 2013 or a compatible format.

The definition of waste service may not require sampling data for some wastes, for example where the waste and final waste-derived material are similar in composition (that is, where minimal treatment or processing is carried out before the proposed end of waste status). If you think sampling data for the input waste is not applicable for your request, give justification to explain this.

We use this data to identify environmental and human health risks which may not be clear from the final waste-derived material sampling data.

You need to design the sampling data to demonstrate the following.

The number of samples given are sufficient to fully characterise the waste

The definition of waste service estimate you will need a minimum of 20 samples. However, if you feel fewer samples are sufficient, give justification of why this is supported by relevant data analysis. For example, a waste with a restricted number of inputs, which is produced under a controlled process which is accompanied by sampling data which demonstrates low relative standard deviations seen for parameters tested, may require fewer samples to fully characterise the waste.

All substances which are potentially of concern are identified and sampled for in the waste material

These may include basic elemental composition, metals, physical properties, anions, polychlorinated biphenyls (PCBs) and dioxins. You should consider the material, source and final use in deciding what substances may be of concern. The selection of the sampling suite should be linked to the hazards posed by the material and appropriately justified.

Sampling techniques and frequency are designed to make sure the data is representative of the composition of the waste over the long term

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For example, where there is a seasonal variation or where multiple or sporadic inputs have been identified (in question C1.1), make sure data is given to demonstrate the waste composition for these varying input materials and scenarios.

The composition and variability of the waste has been assessed through appropriate data analysis

This must include providing values for the mean, max, min, median, standard deviation, relative standard deviation, 95th percentile and 99th percentile data for each tested parameter.

The relative standard deviation (also referred to as the coefficient of variation) is used to determine whether the standard deviation (SD) of a dataset is small or large when compared to the mean (that is, how precise the mean value is). The formula for calculating the relative standard deviation is:

$$(SD \times 100) \div \text{mean} = \text{relative standard deviation}$$

Appropriate sampling techniques have been used

You should give copies of the original laboratory test certificates in addition to the Excel versions of the sampling data) to evidence the sampling techniques and laboratory methods used.

Where an input specification for the incoming wastes is in place, the data shows the waste is compliant with the specification.

C7

Give a specification for the incoming waste. This must be part of the acceptance procedure for the waste on site. The specification should include the identified substances of concern from the sampling data.

In addition, give an acceptance procedure to accompany the specification, including how you will assess whether the specification is met and a process for rejecting material if it does not comply with the specification.

If there is no specification in place, give justification outlining how you will make sure only appropriate incoming waste is accepted for the process on site.

D. About the process

This section asks about the processing and treatment techniques you will use to produce the final waste-derived material.

The processing:

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- must be done on the site you identified in question A3.1
- will use the identified wastes and non-wastes (from question C1) as inputs
- will result in the production of the final waste-derived material proposed for end of waste status

D1

Fully detail the processing and treatment techniques proposed, outlining how the input materials (outlined in question C1) are processed to produce the final waste-derived material.

Tell us about the:

- inputs and outputs
- plant and equipment used
- required timings for each stage of the processing

Explain the reason for doing each stage, for example:

- water extraction
- size reduction
- contaminant removal

We recommend that you include a flowchart to clearly outline the processing and treatment.

D2

Explain why each input waste and non-waste has been selected for inclusion in the process.

State the role of each input material in the process and how each material is appropriate to fulfil this use.

Overall, you should demonstrate that each input to the process is both required and appropriate for use in this way.

D3

Confirm all the output materials generated from the treatment and processing. That is, any materials other than the final waste-derived material. Tell us what happens to these outputs and residues.

D4

Give a specification for the final waste-derived material. In the specification, include all the substances of potential concern (for example, in relation to environmental and human health), adding elemental compositional parameters, metals and physical properties.

You should justify the substances you have selected in the specification and state why they are sufficient.

Where you considered a substance but did not include it, give a short justification to explain this.

D5

Fully detail the quality control procedures you will put in place to test the material to the specification in D4. Give information on:

- how you will sample the final material (that is, the method of collection)
- what sample size you will use
- how you have designed the process so that the collected sample is representative of the entire batch
- if every batch of material will be tested and, if not, justification of why not
- whether the outlined testing methods are done to a particular standard, for example to BS EN14899:2005
- if you will use an independent laboratory for the testing and, if not, why not
- what the process for non-compliant material is

D6

Give an estimate of the maximum time you will store the final waste-derived material before its sale or use.

Generally, the final waste-derived material is stored at the site of production before it is sold directly to customers from the site. However, if you plan to transport the material to another site before sale, give the storage times for each stage of the process following generation of the material.

E. Use of the material

E1

Fully detail all the proposed uses for the final waste-derived material. You must describe:

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- how the material will be used
- who will use it
- why it will be used in this way

For example, 'Use as a nitrogen phosphate fertiliser for landspreading on agricultural land to deliver nutrient benefit to cereal crops', not 'as a fertiliser'.

Where you propose the final waste-derived material to have multiple uses, make sure you define all the uses. If you do propose multiple final uses, it is important to consider whether you should apply the end of waste test separately to each use.

If the proposed uses are similar (such as a variety of different uses in construction) it may be acceptable to assess end of waste under one request (for all these uses).

However, where the uses are more distinct (such as the material proposed for use in construction and for use as a fertiliser) you must assess end of waste for each use separately and give separate requests.

If you are in doubt about the number of requests required, please discuss with the definition of waste service before submitting.

E2

For this question you need to tell us, following final sale or use of the final waste-derived material, if:

- the material is ready to use in its current state for all the outlined uses
- further processing or treatment is required before its final use
- this further processing is required for all uses or only for some

If further treatment is required, explain why further processing is required and what processing is needed. You also need to give further explanation in answer to question E4 in relation to the non-waste comparator.

E3

Explain what the relevant comparator is, why you selected it and why it is appropriate. If there is no non-waste comparator for your final waste-derived material, you need to state this and explain why.

Where possible you must use a 'comparator approach' to assess whether a substance or object leads to overall adverse environmental or human health impacts. You will compare the final waste-derived material to a relevant non-waste comparator.

You must choose an appropriate comparator when you assess end of waste status. Selecting the wrong comparator can completely undermine the assessment and lead to an incorrect assessment of waste status.

The comparator must be an existing non-waste material that is used (including storage, transport and handling) in the same way that the final waste-derived material will be. Some slight differences in final use are likely to be acceptable as long as the market will remain the same as the non-waste comparator and any differences in use are taken into account in the risk assessment. You must not compare against a material which is waste or a material about which the waste status is unclear.

When choosing the comparator, you must consider whether your final waste-derived material is likely to compete against or potentially replace the chosen comparator in the intended market. If it is not, then it is likely you have chosen the wrong comparator.

Example 1: correct and incorrect comparators

For a waste-derived fuel pellet, intended for burning as a replacement for non-waste biomass pellets, the obvious comparator is the specific non-waste biomass pellet used in the intended market or end use. Coal is not an appropriate comparator. This is because coal is unlikely to be genuinely replaced by the waste-derived biomass material.

Example 2: correct and incorrect comparators

For a waste-derived construction material, the obvious comparator is either the existing construction product the material is intended to replace or the ingredient that the material is intended to replace (in the case of blended products). Incinerator bottom ash aggregate (IBAA) is not an appropriate comparator as IBAA is regarded as a waste. A more appropriate comparator would be sand or cement.

Where you have proposed multiple uses for the final waste-derived material, the most suitable comparator is likely to be a material which is currently used in all these multiple uses. However, if a comparator for multiple uses is not available, you should include a separate comparator for each specific end use (if available). In such cases, a different request is likely to be required for each use and comparator. If you are in doubt about the number of requests required, please discuss with the definition of waste service before submitting.

There may be no obvious appropriate comparator, as is occasionally the case with innovative products or end uses. If this is the case, an alternative assessment of overall adverse environmental or human health impacts must be done (see

question H6).

E4

Explain any differences between the way in which the final material is used in comparison to the chosen non-waste comparator, including storage, transport and handling. Make sure you include the reasoning behind any required differences and assess the potential impact on final use.

Differences may include:

- use of the final waste-derived material at different quantities, for example, due to the beneficial properties of the material
- use of different plant or equipment, for example, due to physical properties of the material
- more stringent restrictions on use, for example, due to chemical properties of the material

Where the final waste-derived material is used in a different way to the comparator you must explain this, including consideration of the potential impact on the market. For example, if customers will have to purchase:

- new plant or equipment for use
- more material than previously

Explain how these impacts will not be a barrier to sale. In addition, where relevant, describe how you will communicate these differences in use, including storage and transport to potential customers.

If the material can be used in exactly the same way, give evidence to support this.

E5

Please explain all potential uses for the non-waste comparator material. State if any of these end uses are unsuitable for the final waste-derived material. If so, explain why this is.

F. Market information

F1

Describe the market and potential customers you have identified for the final waste-derived material.

The market or demand may consist of a limited number of known customers where an amount of material is available for a specific use. For example, a material used in a specific industrial process.

Or specific customers may not yet be known, and the material will be available for purchase to a wide market alongside other competing products. For example, a fertiliser available for general agricultural use.

In other cases, the market may be a combination of the 2, where 50% of the material produced will be sold to specific customers, with the remaining material available for general sale.

You should give information about all potential users and customers of the final waste-derived material. If there is no identified customer or market, explain why there is nevertheless a demand and what it is (for example where you plan to use the material yourself).

Where possible you should give a breakdown of predicted sales.

F2

Explain the pricing structure for the final waste-derived material, demonstrating how you decided the price of the material. Include details on:

- the cost of production
- proposed price of the material
- estimated profits from the production and sale

In addition, include the current market price for the non-waste comparator material (if there is one) and consider how this price compares with the proposed price for the final waste-derived material. If you propose to sell the final waste-derived material at a lower price, explain why and justify.

It is not essential that a positive price is paid for the final waste-derived material. There can be an acceptable alternative in place (for example, a mutually beneficial arrangement) which you can use as evidence of a suitable market or demand for the material.

F3

Give evidence that the identified market or demand have the potential to purchase and use all of the final waste-derived material.

The evidence is best if it outlines an agreement with a customer or customers for the future purchase of the final waste-derived material if certain requirements are met, such as compliance with the specification. This should include the amount of the material for purchase and the price for which it will be sold. You can demonstrate this in a number of ways, including:

- expressions of interest
- purchaser affidavits
- contracts

Where a specific customer is identified, explain what capacity they have to purchase the amount of final waste-derived material they have committed to and their reason for doing so.

Where you cannot give evidence of specific customer intention to purchase all of the final waste-derived material, in addition to including information about specific customers as set out above if available, the request should demonstrate the existence of an established market that the final waste-derived material will be sold in to. Evidence may include:

- an assessment of the size of the market
- the history of the market
- the purchasing ability of this market
- the operator's current experience in this market

You must explain how the material will meet the requirements of this market and demonstrate that sale into this market is likely. Overall, there needs to be confidence that the final waste-derived material will actively sell into the specified market.

G. Technical requirements

G1

Fully detail all the relevant technical requirements, legislation and standards applicable to the substance or object and the associated final use. These may include:

- technical standards for the type of material produced, for example British Standards for aggregates used in construction
- specific product standards or regulations related to the final use, for example, fertiliser regulations
- customer or industry specific standards or requirements, for example, specifications in place for use in a particular combustion plant

Give copies of the identified standards within your request.

Within the identified technical requirements, legislation and standards, highlight which parts are relevant to the final waste-derived material. For example, relevant limit values, specifications, and physical properties.

This section relates to how fit for purpose the final waste-derived material is. You should consider all applicable standards, not just those relating to environmental or human health concerns.

G2

Once you have identified the technical requirements, legislation and standards in G1, the request must assess how the final waste-derived material is compliant with them. You will need to evidence how they are met. For example, this may include consideration of the sampling data for the final waste-derived material and comparing with identified limit values or required specifications within the relevant standards.

Other requirements you may need to consider include the:

- physical properties of the material
- testing procedure which will be in place
- required process controls on the site of production

If you consider there is an aspect of an identified legislation or standard that is not relevant to your final waste-derived material, give justification explaining why this is the case. Consider how this will impact:

- final use
- the marketability of the final waste-derived material
- environmental and human health risk

H. Environmental and human health impact

H1

You must give a sufficient number of samples of the final waste-derived material and present the data in Excel 2013 or a compatible format.

For the sampling data for the waste, you need to design the sampling data for the final waste-derived material as follows.

We estimate a minimum of 20 samples are required to fully characterise the material. However, if fewer samples are sufficient to achieve this characterisation, you must give clear justification of why this is acceptable, using data to evidence

this. For example, fewer samples may be required where a final waste-derived material:

- is produced from a restricted number of inputs
- is produced using waste inputs which have been shown to be consistent (from sampling data)
- demonstrates low relative standard deviations seen for parameters tested and low levels of substances of concern overall

Conversely, in some cases, such as where variability in the final waste-derived material is high, more samples may be required.

You must identify all substances which are of potential concern. They must be sampled for in the final waste-derived material. These include elemental composition, metals, physical properties, anions, PCBs and dioxins. You should consider the material, the input waste and materials and the final use in deciding what substances may be of concern. For example:

- you should include beneficial properties (such as nutrient or calorific value) where relevant to the final use and ecotoxicity
- you must include speciation of metals and leaching behaviour where relevant

You should justify the selection of the sampling suite. Where a parameter has been considered but has not been included, give justification to explain this.

The composition and variability of the final waste-derived material must be assessed through appropriate data analysis. This will include providing values for the mean, max, min, median, standard deviation, relative standard deviation, 95th percentile and 99th percentile data for each tested parameter.

Appropriate sampling techniques must be used and explained in the request. You should give copies of the original laboratory test certificates (in addition to the Excel versions of the sampling data) to evidence the laboratory methods used.

The final waste-derived material must show sufficient compliance with the outlined specification, demonstrating the final waste-derived material is consistently appropriate for use.

H2

Give the sampling data which demonstrates the composition of the chosen non-waste comparator material (selected in question E3) in Excel 2013 or a compatible format.

You should use the same parameters you tested for in the final waste-derived material, such as metals, physical properties, anions, PCBs, dioxins. This is so you can compare the 2 data sets and materials properly.

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You need a sufficient number of samples the non-waste comparator so you can fully characterise the material, for example, in terms of potential variability.

If there is no non-waste comparator for your final waste-derived material (and you have justified this in question E3) then you can ignore this question.

H3

The information you give must demonstrate that the sampling techniques and frequency were designed to make sure the data (provided for question H1 and H2) is representative of the composition of the materials over the long term. For example, where input materials are known to be variable, you must give data that accounts for this variability.

If there is likely to be seasonal variation in the waste inputs or the composition of the final waste-derived material (or both), the sampling procedure must account for this. You must give evidence to support the variability.

H4

You must show the comparison of the sampling data for the final waste-derived material and the non-waste comparator clearly. Give it in Excel 2013 or a compatible format. For example, show the results for each parameter for each material side by side, using the same units of measurement. The definition of waste service has given a [suggested format](https://www.gov.uk/government/publications/get-an-opinion-from-the-definition-of-waste-service) (<https://www.gov.uk/government/publications/get-an-opinion-from-the-definition-of-waste-service>).

In making a comparison you must take account of any need to use a greater quantity of the final waste-derived material than the comparator to achieve the same result.

If there is no non-waste comparator for your final waste-derived material (and you have justified this in question E3) then you can ignore this question.

H5

Using the comparison data of the 2 materials given for question H4, you must give a written assessment. This must explain your evaluation of the comparison.

Where a substance compares unfavourably (for example, higher levels of an identified parameter or substance of concern is seen in the final waste-derived material compared to the non-waste comparator), make sure the assessment identifies this and provides explanation for the higher levels.

If there is no non-waste comparator for your final waste-derived material (and you have justified this in question E3) then you can ignore this question.

H6

You must give a risk assessment for the final waste-derived material if:

- following comparison and assessment, a higher level of an identified parameter or substance of concern is seen in the final waste-derived material compared to the non-waste comparator, including when emitted to the environment
- following comparison and assessment, levels of an identified parameter or substance of concern are lower weight for weight for the final waste derived material but will be higher than the non-waste comparator, because a larger volume of the material will be used for the same effect, for example increased fertiliser application rates to meet crop need
- there is no non-waste comparator for your final waste-derived material

Where you have a non-waste comparator, where the waste-derived material compares unfavourably to the comparator (that is, higher levels of substances of concern seen when compared) a risk assessment is required in relation to those substances of concern. This risk assessment should assess the final waste-derived material in relation to its intended use, including handling, transportation and storage. It needs to show that there is no significant increase in risk to the environment or human health from use of the final waste-derived material compared to use of the chosen comparator. The risk assessment must use the source, pathway and receptor model.

Where you do not have a non-waste comparator, you must give a full risk assessment for the final waste-derived material in relation to its intended use, including handling, transportation and storage. As above, the risk assessment must use the source, pathway and receptor model. It needs to show that there is no significant risk to the environment or human health from use of the final waste-derived material.

When undertaking a risk-based assessment you need to consider the effect of non-waste status leading to there being no regulation, if relevant.

If you would like further guidance on risk assessment, please email dowservices@environment-agency.gov.uk

I. Benefits of end of waste status

Answers to the questions in this section will not affect the end of waste assessment process. But they help us to run the definition of waste service.

J. Request form documents

Make sure you have included all the documents and information required by the request form. Use the document reference where applicable in your request. If you are not sure about what to include (or if any of the outlined documents are not

required in your request) please contact the definition of waste service to discuss before submitting. Email dowservices@environment-agency.gov.uk

Include all documents which make up the request in the table as instructed. It is important to describe and reference all documents which you have sent for assessment, to make sure no information is missed.

K. Declaration

K1

To make a request you must read the terms for using the definition of waste service and tick the given box to confirm agreement.

K2

Please read the information on the Freedom of Information (FOI) and Environmental Information Regulations (EIR) requests and confirm you have read it by ticking the box. The Environment Agency may be required to share information they receive from an FOI or EIR request, if it's specifically asked for by an appropriate request. As part of the request, you can give redacted documents where relevant.

If you have any questions about FOI or EIR please contact the definition of waste service to discuss before sending your information. Email dowservices@environment-agency.gov.uk

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OGL

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Example format for a sampling data comparison table

This spreadsheet contains 2 tables next to each other, separated by a blank column. The tables contain blank cells, as it's a template you can add your own data to if you choose.

The tables contain these abbreviated units: Mj/kg is megajoules per kilogram, % w/w is percentage weight by weight, mg/kg is milligram per kilogram, kg/m³ is kilogram per metre cubed, mm is millimetre, degrees C is degrees Celsius.

You can use this spreadsheet to enter your data and provide as part of your submission or you can create your own spreadsheet using Excel. If you use this spreadsheet, please complete the applicant's name. You can add or remove parameters in columns A and M to reflect your sampling data.

Applicant's name:

Table 1a: Non-waste comparator data

Parameter	Unit	Maximum	Minimum	Mean	Median	Number of samples	Standard deviation	Relative standard deviation	95th percentile	99th percentile
Gross calorific value	Mj/kg									
Net calorific value	Mj/kg									
Total moisture	% w/w									
Ash	% w/w									
Volatile matter	% w/w									
Fixed carbon	% w/w									
Carbon	% w/w									
Hydrogen	% w/w									
Nitrogen	% w/w									
Oxygen	% w/w									
Sulphur	% w/w									
Chlorine	% w/w									
Bromine	% w/w									
Fluorine	% w/w									
Iodine	% w/w									
Mercury	mg/kg									
Cadmium	mg/kg									
Thallium	mg/kg									
Antimony	mg/kg									
Arsenic	mg/kg									
Beryllium	mg/kg									
Chromium	mg/kg									
Cobalt	mg/kg									
Copper	mg/kg									
Lead	mg/kg									
Manganese	mg/kg									

Parameter	Unit	Maximum	Minimum	Mean	Median	Number of samples	Standard deviation	Relative standard deviation	95th percentile	99th percentile
Nickel	mg/kg									
Tin	mg/kg									
Vanadium	mg/kg									
Selenium	mg/kg									
Tellurium	mg/kg									
Zinc	mg/kg									
Inert mass	% w/w									
Bulk density	kg/m ³									
Mechanical durability	%									
Length	mm									
Diameter	mm									
Ash fusion - initial deformation	degrees C									
Ash fusion - softening	degrees C									
Ash fusion - hemispherical	degrees C									

Table 1b: Waste derived material data

Parameter	Unit	Maximum	Minimum	Mean	Median	Number of samples	Standard deviation	Relative standard deviation	95th percentile	99th percentile	Waste derived material specification
Gross calorific value	Mj/kg										
Net calorific value	Mj/kg										
Total moisture	% w/w										
Ash	% w/w										
Volatile matter	% w/w										
Fixed carbon	% w/w										
Carbon	% w/w										
Hydrogen	% w/w										
Nitrogen	% w/w										
Oxygen	% w/w										
Sulphur	% w/w										
Chlorine	% w/w										
Bromine	% w/w										
Fluorine	% w/w										
Iodine	% w/w										
Mercury	mg/kg										
Cadmium	mg/kg										
Thallium	mg/kg										
Antimony	mg/kg										
Arsenic	mg/kg										
Beryllium	mg/kg										
Chromium	mg/kg										
Cobalt	mg/kg										
Copper	mg/kg										
Lead	mg/kg										
Manganese	mg/kg										

Parameter	Unit	Maximum	Minimum	Mean	Median	Number of samples	Standard deviation	Relative standard deviation	95th percentile	99th percentile	Waste derived material specification
Nickel	mg/kg										
Tin	mg/kg										
Vanadium	mg/kg										
Selenium	mg/kg										
Tellurium	mg/kg										
Zinc	mg/kg										
Inert mass	% w/w										
Bulk density	kg/m3										
Mechanical durability	%										
Length	mm										
Diameter	mm										
Ash fusion - initial deformation	degrees C										
Ash fusion - softening	degrees C										
Ash fusion - hemispherical	degrees C										



**APPLICATION FOR AN ENVIRONMENTAL PERMIT
UNDER THE ENVIRONMENTAL PERMITTING
(ENGLAND AND WALES) REGULATIONS 2016
(AS AMENDED)**

**APPLICATION REF: PAN-016818
SCHEDULE 5 NOTICE RESPONSE
END OF WASTE JUSTIFICATION**



**MINERS PARK, LLAY INDUSTRIAL ESTATE,
LLAY, WREXHAM**

**ECL Ref: PLAT.01.02/EoW
Version: Issue 1
September 2022**

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ACRONYMS / TERMS USED IN THIS REPORT

BSI	British Standards Institution
DMP	Dust Management Plan
ECL	Environmental Compliance Limited
EMS	Environmental Management System
EoW	End of Waste
EP	Environmental Permit
ERA	Environmental Risk Assessment
EWC	European Waste Catalogue
Ha	Hectares
LEV	Local Exhaust Ventilation
NGR	National Grid Reference
NRW	Natural Resources Wales
OS	Ordnance Survey
PAHs	Polycyclic aromatic hydrocarbons
Platts	Platts Agriculture Limited
rWFD	Revised Waste Framework Directive
The Facility	Platts Agriculture Wood Waste Processing Facility
VOC	Volatile Organic Compounds
WRAP	Waste & Resources Action Programme

1. INTRODUCTION

1.1. Background

- 1.1.1. Environmental Compliance Limited (“ECL”) has been commissioned by Platts Agriculture Limited (“Platts”) to demonstrate End of Waste (“EoW”) classification for the processed manufacturing wood waste as part of the Environmental Permit (“EP”) application (Application Reference PAN-016818) to undertake a bespoke waste operation at their wood waste processing site, hereafter referred to as “the Facility”, located on Miners Park, Llay Industrial Estate, Llay, Wrexham LL12 0PJ.
- 1.1.2. Platts is proposing to accept and process approximately 60,000 tonnes per annum of non-hazardous manufacturing wood waste at the Facility. The maximum daily receipt proposed is 300 tonnes to account for the varying cycles of trailer changeovers at the wide range of collection sites.
- 1.1.3. It is proposed that animal bedding will be produced from clean, uncoated, and untreated waste wood only.
- 1.1.4. Manufacturing waste wood will not be used to produce animal bedding but will be used to produce a cubicle conditioner. The two wood types will not be mixed.
- 1.1.5. Any manufacturing waste wood will be stored entirely separately from the clean, uncoated, and untreated waste wood and will be pulverised to produce the cubicle conditioner for use in the agricultural livestock sector. It is this manufacturing wood waste which is subject to this EoW assessment as it is believed that the cubicle conditioner should be regarded as a product and not waste.

1.2. Facility Location

- 1.2.1. The Facility is located on Miners Road within Llay Industrial Estate which consists of industrial and commercial units surrounded predominately by rural land use. The Facility is centred on Ordnance Survey (“OS”) National Grid Reference (“NGR”) 332077 356370. The Facility will occupy an area of approximately 1.56 Hectares (“Ha”).
- 1.2.2. The exact location of the Facility and the proposed Environmental Permit Boundary (outlined in green) is indicated on the Site Location Plan (Drawing PLAT.01.02-01), which is contained in Appendix I of this document.

1.3. Schedule 5 Notice Request

- 1.3.1. The Schedule 5 Notice dated 19th July 2022 stated:

“Action: Provide further information to demonstrate that the processed wood waste meets ‘end of waste’. This must be done via an individual assessment on a case-by-case basis produced in accordance with Article 6 of the revised Waste Framework Directive, including procedures you will have in place to ensure that this is carried out for all waste treated on site.”

1.4. Demonstrating End of Waste – Assessment Criteria

- 1.4.1. EoW can be determined using one of the three methods:
- compliance with end of waste regulations;
 - meeting a quality protocol; and
 - through an individual assessment on a case-by-case basis.
- 1.4.2. As end of waste regulations nor a quality protocol exist for wood or wood related materials, EoW is determined through an individual assessment on a case-by-case basis demonstrating that the claim of EoW has a valid basis.
- 1.4.3. A case-by-case basis assessment is made taking into account waste law principles, relevant case law and the revised Waste Framework Directive (“rWFD”).
- 1.4.4. Article 6 (1) of the rWFD sets out the criteria that must be met for a substance, material or object which has undergone recycling or other recycling operation to no longer be considered waste and therefore achieves EoW status:
- a) the substance or object is to be used for specific purposes;
 - b) a market or demand exists for such a substance or object;
 - c) the substance or object fulfils the technical requirements for the specific purposes and meets the existing legislation and standards applicable to products; and
 - d) the use of the substance or object will not lead to overall adverse environmental or human health impacts.
- 1.4.5. To ensure a high level of protection of the environment and human health and facilitate the prudent and rational utilisation of natural resources, the information provided to demonstrate EoW shall include the following as per Article 6 (2) (a) to (e) of the rWFD:
- e) permissible waste input material for the recovery operation;
 - f) allowed treatment processes and techniques;
 - g) quality criteria for end-of-waste materials resulting from the recovery operation in line with the applicable product standards, including limit values for pollutants where necessary;
 - h) requirements for management systems to demonstrate compliance with the end-of-waste criteria, including for quality control and self-monitoring, and accreditation, where appropriate; and
 - i) a requirement for a statement of conformity.

1.5. Proposed Waste Codes and Feedstock Variability

- 1.5.1. In order to reduce variability in the feedstock, Platts propose to limit acceptance of waste wood at the Facility to two European Waste Catalogue (“EWC”) codes as shown in Table 1.

- 1.5.2. It should be noted that Platts no longer propose to accept EWC 17 02 01 for treatment at the Facility. The only EWC code which will be processed at the Facility to produce the cubicle conditioner product is EWC 03 01 05.
- 1.5.3. It is recognised that EWC 03 01 05 covers a very wide range of manufacturing facilities therefore, pre-acceptance checks are undertaken on the source material to determine whether it would be acceptable for use as a cubicle conditioner. If, after the checks have been completed, it is considered acceptable then the supply would be subject to routine sampling and analysis to ensure continued suitability.

Table 1: Proposed EWC to be Accepted

Code	Description
02	WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING
02 01	Wastes from agriculture, horticulture, forestry, hunting and fishing
02 01 07	Wastes from forestry
03	WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PANELS AND FURNITURE, PULP, PAPER AND CARDBOARD
03 01	Wastes from wood processing and the production of panels and furniture
03 01 05	Sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 0 4

- 1.5.4. Platts trailers are unloaded, and wood waste inspected within the confines of the main building. The waste wood is then fed into the process system. To ensure the 'clean' and 'manufacturing' wood wastes are not mixed, the system is cleared between processing of the different waste types.
- 1.5.5. The process flow schematic is presented in Appendix II. In summary, to clear the process system, it is run dry i.e. it continues to run once empty. This acts to remove most of the waste wood from the system. Platts will ensure there is no residual material which could cause contamination by flushing the system with one bucket of the alternate waste type to be processed.
- 1.5.6. The system will be run dry following flushing with any output, including the 'flushed' output, 'deemed' as cubicle conditioner as it will contain a mixture of the manufacturing and clean waste types and will therefore not be suitable for use as animal bedding.
- 1.5.7. Source variability is assessed on a case by case basis for each supply site and as part of the EoW assessment. The guidance suggests that a minimum of 20 samples are required for statistical purposes, however assessments have been undertaken for all sites where 10 or more samples have been taken.
- 1.5.8. Sample results for all supply sites are provided as Addendums to this report, however, formal assessments for those sites with less than 10 samples have not been undertaken. The individual site spread sheets containing sample results will be updated and once 10 samples have been analysed, the individual assessment for the site will be undertaken.

2. END OF WASTE CRITERIA – WFD ARTICLE 6 (1)

2.1. Substance or Object to be Used for Specific Purposes

- 2.1.1. The processed manufacturing wood waste is to be used for a specific purpose as a cubicle conditioner by farmers. This is the only use, and the material is ready for use following processing at the Platts Facility and does not require any further processing or treatment before final use. Therefore, the material will be deemed to have ceased being waste at the point it is baled and packaged ready for despatch to customers at the end of the process.
- 2.1.2. The cubicle conditioner is important for animal welfare, acting to control moisture levels and keep animals clean and hygienic through application of a limited quantity, 1 scoop (approximately 250 grammes) to the mat or mattress. Appendix III illustrates weighed ‘scoops’ of cubicle conditioner.

2.2. A Market or Demand Exists for Such a Substance or Object

- 2.2.1. The applicant is Platts Agriculture Limited. The Company formed in 1973 and is a market leading UK manufacturer and supplier of quality animal bedding and conditioner. Platts was awarded the Royal Warrant in 2018 as a mark of recognition for the supply of goods to Her Majesty the Queen.
- 2.2.2. Platts have been operating for 49 years with a well-established customer base of equine and dairy farmers that rely on the products including the cubicle conditioner with repeat purchases made year on year for the welfare and performance of their herds.
- 2.2.3. Certain ambiguity within the regulations and cross referencing in the PAS 111 guidance document meant Platts believed they were operating within the requirements of the legislation. However, recent discussions have highlighted that they require an Environmental Permit for their activities and therefore, a Permit application has been submitted (Application Reference PAN-016818).
- 2.2.4. Platts have applied for an Environmental Permit to process up to 60,000 tonnes of material a year encompassing both the clean and manufacturing wood waste. The clean is for bedding whilst the manufacturing is for the cubicle conditioner, used at a typical rate of approximately 250 grammes per cubicle per application.

2.3. Substance or Object Fulfils the Technical Requirements for the Specific Purposes and Meets the Existing Legislation and Standards Applicable to Products

- 2.3.1. There are no specific technical requirements laid down for animal bedding or cubicle conditioner or identified specific purposes. There are also no known standards for animal bedding.
- 2.3.2. The main requirements of animal bedding can be encompassed under the term animal welfare. The key aspects can be derived from the Department for Environment, Food and Rural Affairs (“DEFRA”) publication “Code of Recommendations for the Welfare of Livestock: Cattle (March 2003).

2.3.3. The key aspects are:

- The facilities used for housing cattle should be well maintained and provided with dry bedding, or the facilities are well drained;
- The bedding material used should help prevent pressure sores, and help keep the cow's teats, udders and flanks clean;
- Cattle and their bedding need to be kept clean to reduce the risks of mastitis from bacteria in bedding material (known as environmental mastitis);
- Regular cleaning and changing of bedding along with keeping slurry to a minimum within the cubicle;
- Any internal surfaces of cubicles should not be treated with any paints or wood preservatives that may harm the animals.

2.3.4. As detailed previously, the manufacturing wood waste is not used as a 'bedding' material but as a cubicle conditioner. The bedding material consist of a rubber mat that the cow lays on and is regularly cleaned by the farmer. The cubicle conditioner is placed at the rear of the cubicle and used to soak up the slurry produced by the animal in order to maintain the mat as dry as possible. The quantity provided is only a scoop full, sufficient to soak up moisture, but not in a quantity that would cause any health issues for the animal.

2.3.5. Section 3.1.4 below and Appendix IV illustrate the benefits that farmers believe are derived from the use of the cubicle conditioner, and how animal welfare is improved because of it. Therefore, it is considered the product is making a positive contribution to animal welfare and delivering on the key aspects of the Code of Recommendations.

2.3.6. A further benefit is the reduced volume of material required to achieve the same aims of using traditional bedding materials such as straw. A basic example would be a farmer that receives one articulated lorry load of cubicle conditioner a year to provide sanitary provision for his cattle amounting to 22,000kg (22 tonnes). To provide the same level of sanitary provision with straw would require several lorry loads, along with the associated disposal of the used straw bedding and time/resource/equipment requirement to manage the straw bedding.

2.4. Use of the Substance or Object Will Not Lead to Overall Adverse Environmental or Human Health Impacts

2.4.1. Where possible, a 'comparator approach' should be used to assess whether a substance or object leads to overall adverse environmental or human health impacts. This is covered in detail in Section 3.1. of this document which describes the different approaches to comparing the material and the rationale behind them.

2.4.2. There is currently no non-waste comparator for wood waste as use for animal bedding or cubicle conditioner made available by the regulator. However, as part of Platts management and quality systems, sampling of wood waste materials received is undertaken for both the clean and manufacturing supplies. This means that at the time of this EoW assessment report being written there were 71 available sets of analysis results for clean wood waste supplies.

- 2.4.3. The results for these samples have been collated and assessed for use as an internal 'quality' standard with which to compare the manufacturing wood waste sample results.
- 2.4.4. For reference purposes, the results were also compared to PAS111, straw comparator, and Materials Applied to Land for each individual assessment. However, the individual assessment outcomes are based on the comparison against the clean wood waste internal quality standard. The collated results for this can be found in Appendix V.
- 2.4.5. As there is no non-waste comparator made available by the regulator, a risk assessment has been undertaken for the final waste derived material. This is provided in Table 2 and as can be observed, the control measures detailed including the low application rate results in the overall risk being determined as insignificant. Therefore, there is no significant increase in risk to the environment or human health from use of the final waste derived material.

Table 2: Environmental Risk Assessment

Hazard	Receptors	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Emissions to Air						
<i>Fugitive Emissions to Air (e.g. dust)</i>						
Releases of particulate matter (dusts) during product packaging, storage and transport	Human population in surrounding area	Release to Air – windblown dispersion in atmosphere.	<p>The Facility will be operated in accordance with the Dust Management Plan (“DMP”) (PLAT.01.02/DMP) which will form part of the Environmental Management System (“EMS”). The DMP is contained in Section 9 of the application submission and addresses the risk of fugitive emissions to air for all stages of the proposed activities. For the purpose of this EoW assessment, the ERA and related risk management measures focus on the risks associated with the final waste-derived material which is considered to be a product.</p> <p>The processed material is automatically packaged and palletised ready for external storage and forward transport to customers, or when required for bulk delivery, transferred directly to walking floor lorry trailer within an enclosed building.</p> <p>An extensive abatement plant prevents any fugitive dust emissions from being released. Any wood dust captured by the local exhaust ventilation (“LEV”) system is fed back into the storage silo for processing.</p> <p>Regular daily checks are undertaken by Platts employee to ensure no bales have been damaged.</p> <p>The pallets of baled cubicle conditioner are transported by lorry to customers who will then store the bales appropriately to maintain their integrity until use.</p> <p>Bulk deliveries are transferred directly to enclosed storage at the farm using walking floor for controlled discharge to storage.</p>	Low/Moderate Risk management measures should prevent release from reaching identified receptors	<p>Harm to human health – respiratory irritation and illness.</p> <p>Possible dust nuisance – dust on cars, clothing etc.</p>	Not significant if risk management measures are strictly adhered to.

Table 2: Environmental Risk Assessment (Cont.)

Hazard	Receptors	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Emissions to Air (Cont.)						
<i>Fugitive Emissions to Air (e.g. dust) (Cont.)</i>						
Releases of particulate matter (dusts) during product application	Human population in surrounding area	Release to air / inhalation during product application in cubicle	<p>The cubicle conditioner is applied to the rubber mat at the rear of the cubicle by a scoop with approximately 250 grammes used.</p> <p>Large farms utilise application equipment that automatically dispenses the desired quantity to the rear of cubicles.</p> <p>The application rate is such that there is no risk to human health from dust generation when the material is applied in the cubicle.</p>	<p>Low</p> <p>The quantities involved and the application method is such that minimal dust will be generated.</p>	Harm to human health from dust inhalation.	Not significant if recommended application rates are adhered to and appropriate storage of the bales maintained.
Releases of particulate matter (dusts) during product application	Animal health at point of use.	Direct contact or release to air / inhalation during application in cubicle.	<p>The cubicle conditioner is applied to the rubber mat at the rear of the cubicle by a scoop with approximately 250 grammes used.</p> <p>Large farms utilise application equipment that automatically dispenses the desired quantity to the rear of cubicles.</p> <p>The application rate is such that there is no risk to animal welfare from either contact or dust generation when the material is applied in the cubicle.</p>	<p>Low</p> <p>The quantities involved and the application method is such that minimal dust will be generated.</p>	Harm to animal health from dust inhalation.	Not significant if recommended application rates are adhered to and appropriate storage of the bales maintained.

3. END OF WASTE CRITERIA – WFD ARTICLE 6 (2)

3.1. Permissible Waste Input Material for the Recovery Operation

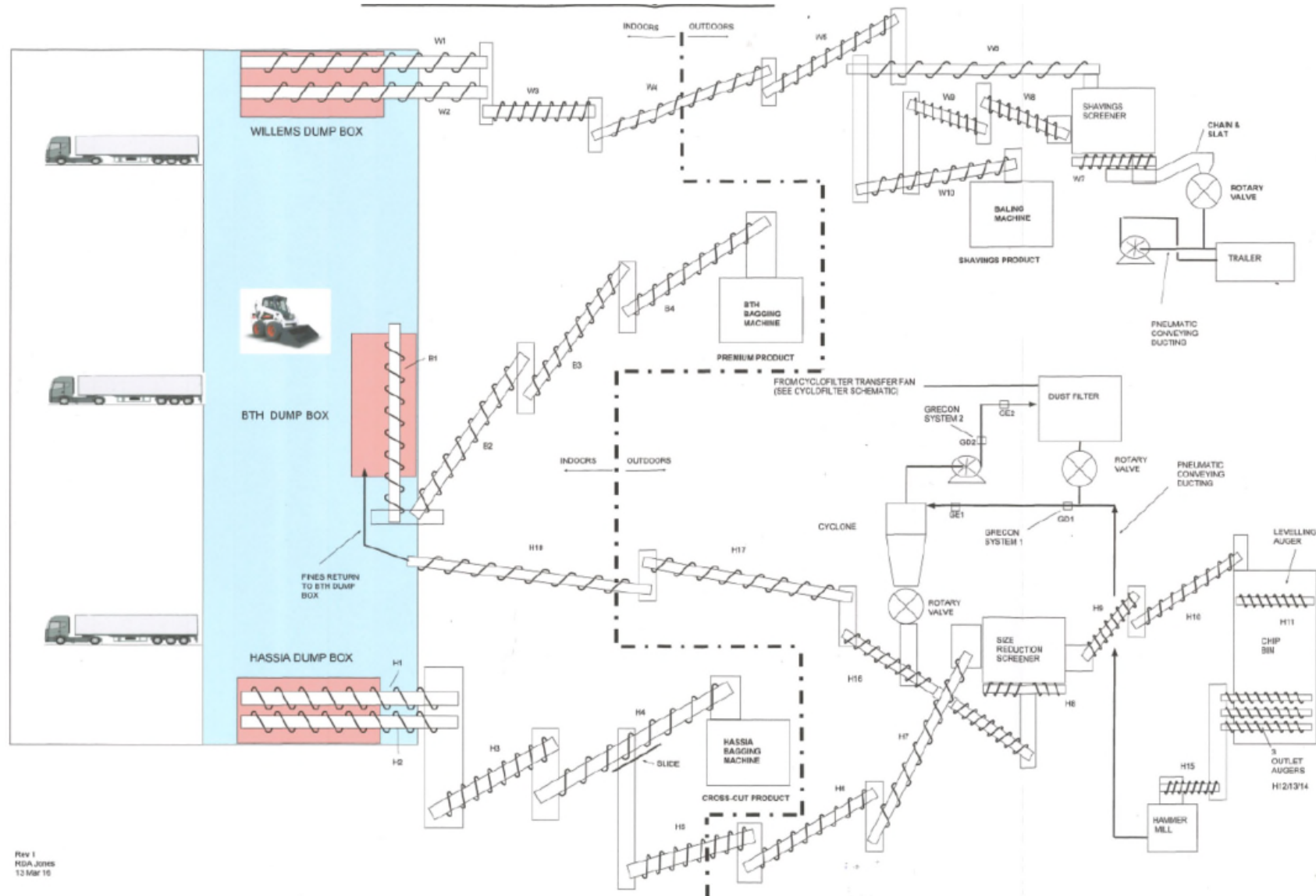
- 3.1.1. Platts propose that the process input for the cubicle conditioner is manufacturing pre consumer wood waste classified as EWC 03 01 05.
- 3.1.2. PAS 111, which is an industry standard and not a regulatory standard, states that treated wood should not be used as a feedstock for animal bedding or soiling materials due to direct animal welfare concerns and indirect animal welfare and environmental concerns when the material is ultimately spread onto land usually via manure systems.
- 3.1.3. Platts have undertaken research with farmers using the cubicle conditioner to address these concerns and to demonstrate that manufacturing pre-consumer wood waste for use as cubicle conditioner is a permissible waste input material.
- 3.1.4. In regards to direct animal welfare concerns, testimonials from farmers have confirmed that the use of cubicle conditioner has improved animal welfare and health including but not limited to:
- reduced veterinary visits;
 - cleaner animals;
 - reduced cases of mastitis;
 - reduced cases of hock sores; and
 - improved somatic cell counts.
- 3.1.5. Farmer testimonials are provided in Appendix IV of this document. These have been obtained as part of a call campaign as well as via electronic customer surveys. Testimonial evidence is saved as recorded phone calls or copies of electronic survey responses received. This evidence is available to NRW on request.
- 3.1.6. It is clearly demonstrated that the cubicle conditioner produced from manufacturing wood waste classified as EWC 03 01 05 improves animal health and does not pose a threat to animal welfare.
- 3.1.7. In terms of potential environmental concerns when the material finds its way onto land usually via manure systems, the 71 clean waste sample analysis results have been assessed in order to set a benchmark. The maximum result for every substance that was found across the 71 samples was combined to generate a total maximum substance concentration figure. The figure obtained was 0.07%.
- 3.1.8. In addition to the benchmark, and with the regulatory stance that the material is waste, the WM3 guidance has been referenced and in particular Chapter 14 – Assessment of hazard HP14 Ecotoxic substances. The cut-off value for substances in this chapter is 0.1%.
- 3.1.9. However, the EoW assessment has gone beyond the WM3 guidance through using the 0.1% cut-off as an absolute for every single substance identified in both clean and manufacturing samples irrespective whether the substances display or are associated with hazard statements H400, H410, H411, H412, H413 or H420.

- 3.1.10. This is illustrated in the individual assessments provided as Addendums to this report as separate Excel spreadsheets for ease of reference. The outcome is that no substance has been identified at a level anywhere near the 0.1% cut-off.
- 3.1.11. The higher cut-off value for individual HP14 substances is 1% for use in the HP14 equations. However, the EoW assessment goes beyond this and sets a maximum level of 0.1% as a total combined substance concentration for all substances identified through analysis. This is also illustrated in the individual assessments provided as Addendums.
- 3.1.12. It is clearly demonstrated both through the analysis results and in consideration of the quantities of material used, that the manufacturing wood waste does not pose a threat to the environment. Additionally, the small quantities used reduces any potential impacts for the farmers using and handling the material.

3.2. Allowed Treatment Processes and Techniques

- 3.2.1. The overall process flow schematic is presented in Figure 1.
- 3.2.2. Waste processing at the Facility is limited to pulverisation of the waste wood for size reduction. There are no other outputs from this process as dust abstracted during the processing is directed to a collection trailer and also bagged as cubicle conditioner.

Figure 1: Overall Process Flow Schematic



3.3. Quality Criteria for EoW Materials Resulting From The Recovery Operation In Line With The Applicable Product Standards, Including Limit Values for Pollutants Where Necessary

- 3.3.1. There are no product standards for animal bedding, however the PAS111 suggests certain substance concentrations for various uses of wood waste. There is a requirement for biological testing which Platts do undertake. Despite NRW saying they do not recognise PAS111, they have referenced Platts to it on various occasions throughout the Environmental Permit application process. The Schedule 5 Notice to which this report is a partial response also refers Platts to PAS111.
- 3.3.2. The PAS111 describes Grade A “clean” recycled wood and states that prior to processing may contain nails and metal fixings, minor amounts of paint and some surface coatings. It goes on to say that some visible particles of coatings and light plastics will remain.
- 3.3.3. To minimise contaminant material content, Platts only accept pre-consumer materials and nothing which may have any form of metal fixings or attachments. Additionally, sources where ‘hogged’ coated material is fed through abatement plant is avoided.
- 3.3.4. Likewise, there are no product standards for cubicle conditioner, therefore, Platts have utilised their clean wood waste sample results to generate an internal benchmark for the manufacturing wood waste.
- 3.3.5. Platts have set a maximum total substance concentration limit of 0.1%, along with an absolute limit of 0.1% concentration for any substance identified through analysis. They have an internal target of total substance concentration value of less than 0.07% (derived from the total maximum concentration of substances identified in the 71 clean wood waste samples).

3.4. Requirements for Management Systems to Demonstrate Compliance with the EoW Criteria, including for Quality Control and Self-Monitoring, and Accreditation, where appropriate

- 3.4.1. As part of Platts’ EMS, sampling and testing procedures have been implemented.
- 3.4.2. The sampling and testing methodology has been informed by reviewing PAS111 document commissioned by Waste and Resources Action Programme (“WRAP”) in collaboration with the British Standards Institute (“BSI”). The document was developed for the wood waste recycling industry sector to provide clarity on what may be deemed appropriate reuse of various wood waste streams.
- 3.4.3. Much of the PAS111 deals with waste derived from or containing post-consumer wood waste, and how it should be dealt with and processed for various end uses. Section 4.3.3 of the PAS111 document refers to animal bedding and details that wood used for animal bedding should be tested in accordance with sections 6.3.1 and 6.3.2 of the PAS111 document.

- 3.4.4. These sections in PAS 111 deal with the sampling and testing methodology and relate to wastes that contain post-consumer wood waste and potential physical contaminants such as concrete, grit, glass, metals, and plastics, none of which are relevant for the wood waste supplies that Platts' propose to accept. Therefore, much of the sampling and testing methodology is not applicable to how Platts' operate.
- 3.4.5. There is specific reference to the potential for pathogens to be present in recycled wood waste and that testing should be undertaken where recycled wood waste is used for animal bedding. Additionally, moisture content is a key aspect as elevated levels can accelerate the growth of mould and pathogens. It recommends the moisture content should be less than 30% by weight. Table 3 below repeats the biological testing requirements for wood waste outputs destined for animal bedding.

Table 3: Biological Testing Requirements

Parameter	Test Method	Unit	Upper Limit
Escherichia coli	BS ISO 16649-2	CFU/g fresh mass	1,000
Salmonella spp	Schedule 2, Part II of BS EN ISO 6579	25g fresh mass	Absent

- 3.4.6. Both biological and moisture testing is being undertaken for the bedding material, however, biological testing is not undertaken for the conditioner as it would not be within the cubicle long enough to pose a risk to animal health.
- 3.4.7. Additionally, analytical suites covering metals, volatile organic compounds ("VOC's"), Phenols and Polycyclic aromatic hydrocarbons ("PAH's") have been developed to assess the wide range of substances that may be present in the wood waste streams to ensure that substance concentrations are sufficiently low so as not to be deemed either a risk to the environment, human health, or animal welfare. The development of the suites has been informed by discussions with the laboratory and review of the industry sector.
- 3.4.8. In order to generate more sample analysis results the largest suppliers of waste wood have been sampled on a weekly basis. This applies to the 10 largest suppliers that account for approximately 60% of the overall supplies. The review of the additional data helps inform the longer-term sampling and analysis requirements that will form the acceptance procedures.
- 3.4.9. It is envisaged that future sampling of wood from regular suppliers may be undertaken in two ways. Firstly, each load received will be sampled and the material held in a sealed container with mixing of the material on each addition from a new load. At the end of the month, a sample from the homogenised mix would be taken and sent for analysis. Secondly, each month a specific randomly selected trailer would be sampled and sent for analysis. This would provide spot checks on individual loads along with monthly averages. All results would be combined into the library of results.
- 3.4.10. Where supplies are less regular, i.e. not more than one trailer a month, then each load would be sampled and sent for analysis. Again, all results would be combined into the library of results.

3.5. Requirement for a Statement of Conformity

- 3.5.1. The EoW protocols require a 'statement of conformity' for all material being passed on as a 'product' having achieved end of waste status based on the assessment parameters.
- 3.5.2. There are two specific criteria that must be complied with for the processed material to be considered to have met the end of waste classification. These are:
- the total concentration of all substances identified through analysis within a sample must be less than 0.1%.
 - the concentration of any individual substance identified through analysis within a sample must be less than 0.1%.
- 3.5.3. In addition to the specific criteria, Platts have an internal target of the total concentration of all substances identified through analysis of any sample should be less than 0.07%, being the total maximum concentration identified for clean wood waste.
- 3.5.4. The Statement of Conformity Certificate is provided in Appendix VI.

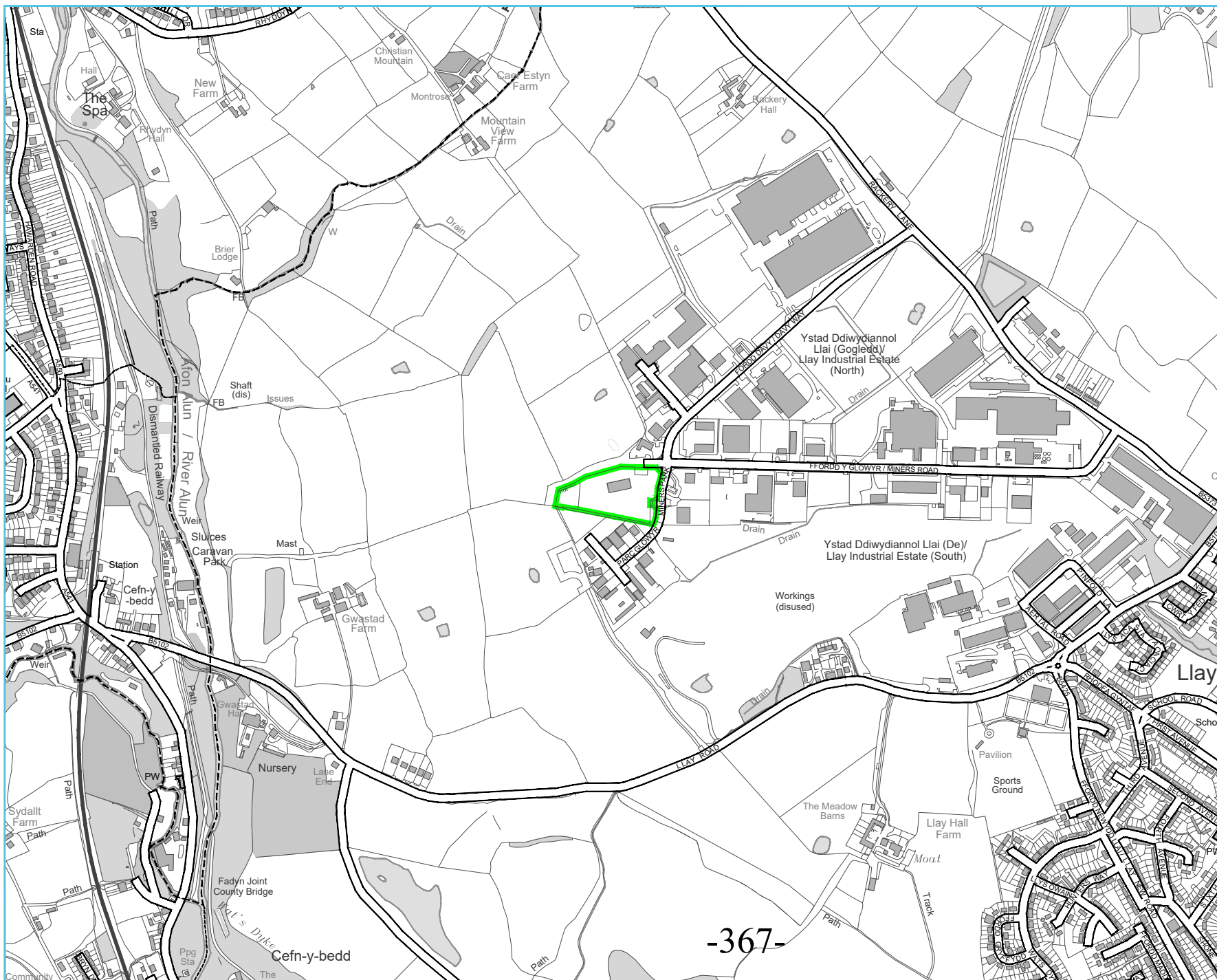
4. CONCLUSION

- 4.1. End of waste assessments have been undertaken on a 'case by case' basis for individual supply sites for the purpose of determining whether the material, after processing, is suitable to be supplied on to customers for use.
- 4.2. The regulator has not provided any comparator data or suggested substances for assessments to be undertaken. For information purposes only, comparison to PAS111, Straw and Materials Applied to Land have been included in the individual assessments. However, the comparator information relied on for the assessments relates to data gathered from sample analysis results of clean wood waste materials.
- 4.3. A total of 71 sets of results have been assessed and used to generate a benchmark with which to compare the manufacturing wood waste received for processing. In addition, the WM3 waste guidance has been referenced to establish specific criteria for controlling the quality of material that will be passed on to ensure there will not be any impact on animal welfare, human health, or the environment from the use of the materials processed.
- 4.4. A maximum total substance concentration of 0.1%, along with an absolute maximum individual substance concentration of 0.1%, are considered extremely conservative and provide more than sufficient protection against any potential impact on animal or human health, and the environment.
- 4.5. For all supply sites with 10 or more sample analysis results, and end of waste assessment has been undertaken which confirms that it meets the total and the individual substance concentration limits.
- 4.6. It is therefore considered, when taking into consideration the small quantities of material being used and the extremely low substance concentrations present, that the material can be considered as 'end of waste' at the point at which it has been packaged after processing. The material has an established use, is considered to contribute to improving animal welfare, is a suitable alternative to traditional materials and has no greater risk or impact than those materials.
- 4.7. Furthermore, it is considered that the use of the material with the quality controls in place contributes to the circular economy, reduces the volume of materials that may have to be incinerated, and contribute to Welsh Government policy of making greater use of wood and therefore, contributes to the Well-being of Future Generations.

APPENDIX I SITE LOCATION PLAN

LEGEND

— ENVIRONMENTAL PERMIT BOUNDARY



Rev	Date	Details	Chkd
-----	------	---------	------

Environmental Compliance Ltd.
 Unit G1
 The Willowford
 Main Avenue
 Treforest Industrial Estate
 Pontypridd,
 CF37 5YL

ecl
 Tel: 01443 841760
 Fax: 01443 841761
 Email: info@ecd.world
 Web: www.ecd.world

Client



Date	Scale	Drawn by	Checked by	Approved by
27/01/2022	1:10K @ A4	GTB	HR	SM

Drawing Status **FINAL DRAWING**

Project Title
 ENVIRONMENTAL PERMIT APPLICATION
 PLATTS AGRICULTURE LIMITED
 MINERS PARK, LLAY INDUSTRIAL ESTATE
 LLAY
 WREXHAM

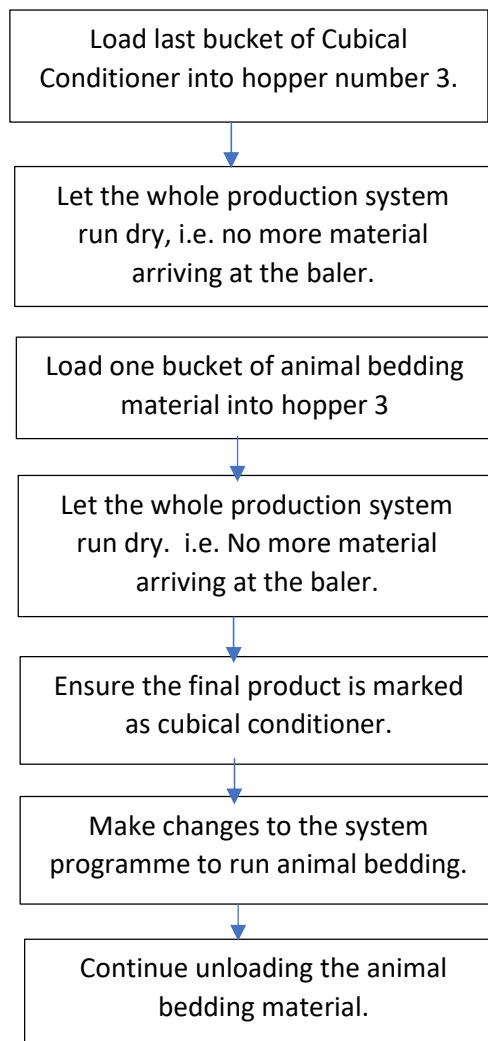
Drawing Title
 SITE LOCATION PLAN

Drawing Number	Rev
PLAT.01.02-01	1

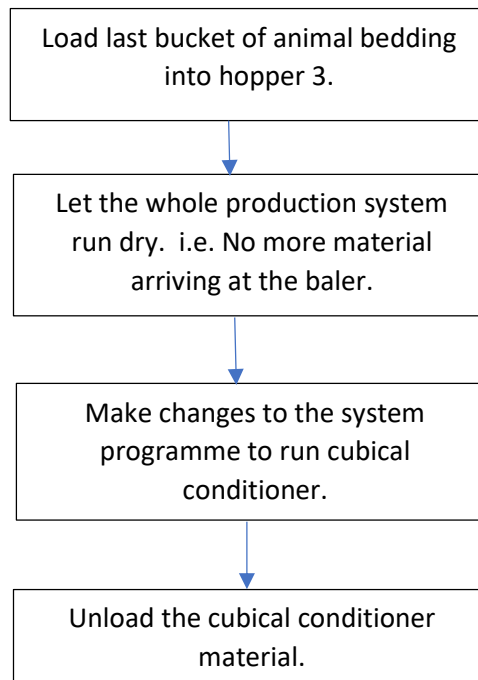
-367-

APPENDIX II FLOW CHART SCHEMATIC

Changing production between Cubical Conditioner to Animal Bedding



Changing production between Animal Bedding and Cubical Conditioner

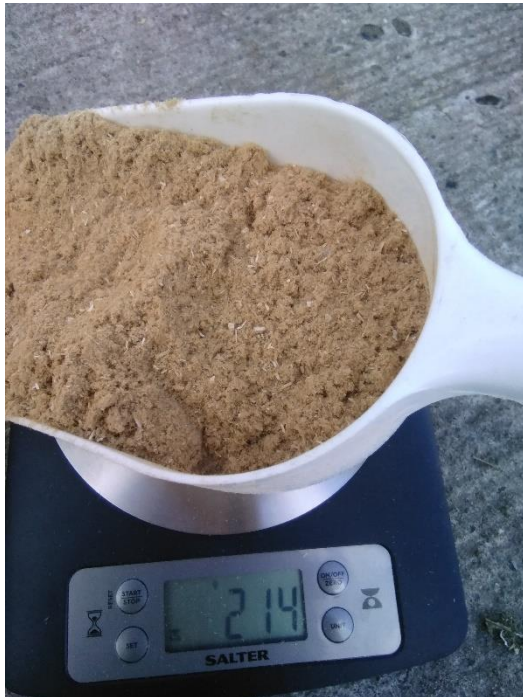


APPENDIX III

WEIGHED SCOOPS OF CUBICLE CONDITIONER

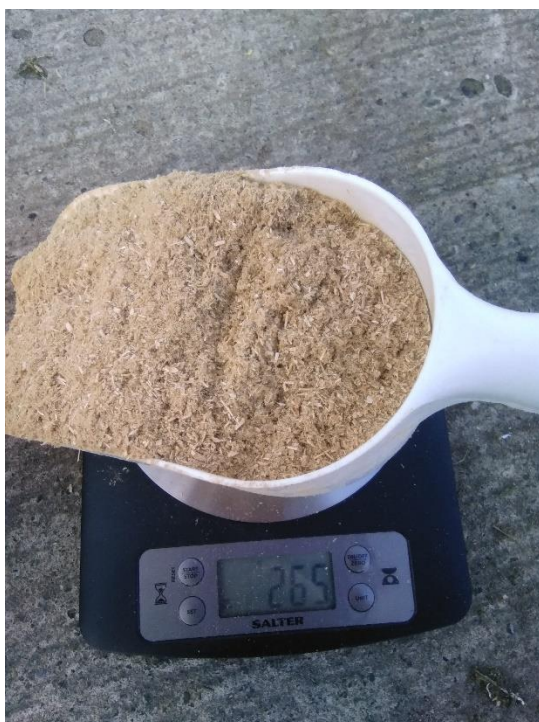
FINEBED WEIGHTS

Pallet number	Date	Time	Baler No.	1 st Weight Grams	2 nd weight grams
80	5/9/22	7.46	3	214	239
117	7/9/22	2.05	2	265	260
146	1/6/22	22.05	3	257	279



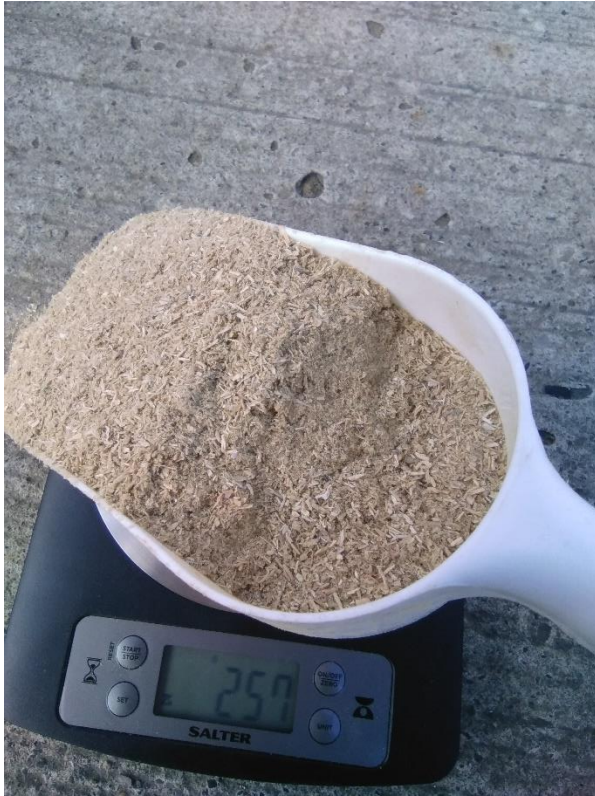
Pallet 80

Date 5/9/22



Pallet 117

Date 7/9/22



Pallet 146

Date 1/6/22

APPENDIX IV FARMER TESTIMONIALS

Account Number	Feedback on impact on cow health, welfare, usage of product or milk yields etc.	Call Recording or Evidence	Type of Evidence
	Improved cell count, reduced hock rubbing, kinder to teats than alternative bedding, cows appear cleaner.		Answers from customer survey
	Improved somatic cell count, improved slurry handling, lower cell count helps milk price-clean cows are happy cows.		Customer Survey
	Improved somatic cell count, Increased lying time, reduced hock rubbing, kinder to teats than alternative bedding, cows appear cleaner		Answers from customer survey
	Took a load of oat husks, as price of Finebed increased, had terrible problems with mastitis - never had issues when using the Finebed, desperate to go back...		Call Recording
	Improved somatic cell count, Increased lying time, reduced hock rubbing, kinder to teats than alternative bedding, cows appear cleaner		Answers from customer survey
	Since moving to Finebed from line, udders and teats in better condition, no disinfectant required, and SSC around 110.		Twitter Review
	Kinder to teats than alternative bedding, cows appear cleaner		Answers from customer survey
	Sawdust is ideal for the cows		Twitter Review
	Kinder to teats than alternative bedding, cows appear cleaner		Answers from customer survey
	Had been using oat husk - not as good but was available but wanted sawdust to make it better.		Call Recording
	Improved somatic cell count, Increased lying time, reduced hock rubbing		Answers from customer survey
	Kinder to teats than alternative bedding, cows appear cleaner		Answers from customer survey
	"It's a good product"		Call Recording
	Improved somatic cell count, increased lying time, cows appear cleaner		Answers from customer survey
	Improved somatic cell count, increaesd lying time, reduced hock rubbing, kinder to teats than alternative bedding, cows appear cleaner		Answers from customer survey
	Increased lying time		Answers from customer survey
	Improved somatic cell count		Answers from customer survey

Cow comfort, less mastitis, less lameness, easier slurry handling, improved somatic cell count, kinder to teats than alternative bedding	Customer Survey
Improved somatic cell count, Kinder to teats than alternative bedding	Answers from customer survey
Improved somatic cell count	Answers from customer survey
Increased lying time, kinder to teats than alternative bedding	Answers from customer survey
SCC dropped since using product- economic to use, no lime required on the beds at all	
Improved somatic cell count, cows appear cleaner	Answers from customer survey
Improved somatic cell count, cows appear cleaner	Answers from customer survey
Looking to switch from paper crumb - not as dry as It could be and has mats for comfort- looking for Finebed	Call Recording
Improved somatic cell count, Reduced hock rubbing	Answers from customer survey
"Very dry and absorbent material- therefore no issues with mastitis." "good consistency and fineness, with no issues with the dust sticking to the slats, or mixing with the slurry"	Newspaper Article
Reduced hock rubbing	Answers from customer survey
Improved somatic cell count, Increased lying time, reduced hock rubbing, kinder to teats than alternative bedding, cows appear cleaner	Answers from customer survey
Controls his cell counts well - doesn't want to scrimp on the product because it's so effective for him. Cows housed all year around.	Call Recording
Switching from sand to paper, used a consultant who's pleased for them to use our Finebed	Call Recording
Reduced hock rubbing, kinder to teats than alternative bedding products	Answers from customer survey
Consistently keeps cows clean and with low bactoscan, keeps mastitis rates very low.	Answers from customer survey, Twitter Review
Feedback to driver: tried paper when we were short of sawdust. Didn't go through the spreader and wasn't absorbent, very dusty though, but a horrible dust that got on their chest. Recording- tried sand, paper, sawdust from local mill, wants to get back to FB	Call Recording
So good they don't use very much of it -a little goes a long way	Call Recording

APPENDIX V COLLATED RESULTS

End of Waste Summary Table

Source (No of samples)	Combined Maximum (%)	Less Than Combined Maximum Limit? (0.1 %)	Less Than WM3 HP14 Individual Limit? (0.1 %)	Less Than Combined Maximum of Clean? (0.07 %)	Deemed End of Waste?
<i>Clean (71)</i>	<i>0.070</i>	<i>YES</i>	<i>YES</i>	<i>-</i>	<i>YES</i>
A (12)	0.031	YES	YES	YES	YES
AJ (10)	0.026	YES	YES	YES	YES
AP (18)	0.024	YES	YES	YES	YES
AT (18)	0.040	YES	YES	YES	YES
AZ (21)	0.020	YES	YES	YES	YES
B (99)	0.031	YES	YES	YES	YES
BC (11)	0.043	YES	YES	YES	YES
C (81)	0.078	YES	YES	NO	YES
D (73)	0.061	YES	YES	YES	YES
E (173)	0.046	YES	YES	YES	YES
F (92)	0.025	YES	YES	YES	YES
G (94)	0.053	YES	YES	YES	YES
H (72)	0.052	YES	YES	YES	YES
I (66)	0.053	YES	YES	YES	YES
J (55)	0.077	YES	YES	NO	YES
K (14)	0.035	YES	YES	YES	YES
L (30)	0.020	YES	YES	YES	YES
O (35)	0.015	YES	YES	YES	YES
P (18)	0.013	YES	YES	YES	YES
Q (14)	0.033	YES	YES	YES	YES
R (16)	0.049	YES	YES	YES	YES
V (10)	0.017	YES	YES	YES	YES
X (18)	0.022	YES	YES	YES	YES
Y (12)	0.023	YES	YES	YES	YES
Z (12)	0.018	YES	YES	YES	YES

APPENDIX VI

STATEMENT OF CONFORMITY

Document Ref: SOC.01

Version: Issue 1

Date: 10/08/2022



Statement of Conformity with End of Waste Criteria

1	Source Supply Reference: Process Material Identification:	
2	Processing Site	Address: Miners Rd, Llay Industrial Estate, Llay, Wrexham LL12 0PJ Telephone: 01978 854666 E-mail: sales@plattsagriculture.co.uk
3	Material Category	Conditioner
4	Material Specification	Wood dust
5	Quantity in Tonnes	
6	The producer applies a Quality Management System and the material meets the following criteria: <ul style="list-style-type: none">the total concentration of all substances identified through analysis within a sample must be less than 0.1%.the concentration of any individual substance identified through analysis within a sample must be less than 0.1%.	
7	Declaration – <i>"I certify that the above information is complete and correct to the my best knowledge."</i>	Name: Date: Signature:

[illegible]



Further information about us is available on our website www.planningportal.gov.uk

The Environmental Permitting (England and Wales) Regulations 2010

ENVIRONMENTAL PERMITTING APPEAL FORM

If you need this document in large print, on audio tape, in Braille or in another language please contact our helpline on 029 2082 3866.

WARNING: Your appeal must reach The Planning Inspectorate within the statutory time limits for making an appeal as set-out in Schedule 6 of the above mentioned regulations.

PLEASE PRINT CLEARLY IN CAPITAL USING BLACK INK

A. APPELLANT

Name MS CAROLINE PLATT

Organisation Name (if applicable) PLATTS AGRICULTURE LIMITED

B. AGENT (if any) FOR THE APPEAL

Name OLIVER MATTHEWS

Organisation Name (if applicable) ENVIRONMENTAL COMPLIANCE LIMITED

Your Reference ECL: PLAT.01.07

C. REGULATOR DETAILS – NATURAL RESOURCES WALES/ LOCAL AUTHORITY

Name CYFOETH NATURIOL CYMRU / NATURAL RESOURCES WALES

Contact reference number PAN – 016818 PLATTS AGRICULTURE LIMITED

Date of Application 28 01 22 (DATE SUBMITTED)

Date Decision 17 10 22 (DEEMED REFUSAL)

D. APPEAL SITE ADDRESS

Address	MINERS PARK, MINERS ROAD, LLAY INDUSTRIAL ESTATE, LLAY,	
WREXHAM	Postcode	LL12 0PJ

- | | | |
|--|-----|-----------|
| 1. Could the Inspector see the relevant parts of the appeal sufficiently to judge the proposal from public land? | Yes | No |
| 2. If Yes to Q1, are there any health and safety issues which would need to be taken into account if s/he were to conduct an accompanied site visit? If so, please describe them below. | Yes | No |

3. If **No** to Q1, an accompanied site visit will be arranged and we will let you and the regulator know when the Inspector will visit the site.

E. REASONS FOR THE APPEAL

This appeal is against:

Please tick **ONE** box only ✓

- | | |
|---|-----|
| 1. Refusal to grant an environmental permit. | 1 |
| 2. Refusal to grant a variation of the conditions of an existing environmental permit. | 2 |
| 3. Conditions attached to an environmental permit following an application for a permit or variation. | 3 |
| 4. Conditions imposed on an environmental permit as a result of a regulator-initiated variation. | 4 |
| 5. Conditions imposed to take account of the partial transfer, partial revocation or partial surrender of the environmental permit. | 5 |
| 6. An Enforcement Notice, a Revocation Notice, Suspension Notice, Prohibition Notice, Landfill Closure or Mining Waste Facility Closure Notice. | 6 |
| 7. 'Deemed withdrawal' of a duly-made application. | 7 |
| 8. Refusal of approval to initiate closure procedures or served with closure notice. | 8 |
| 9. Failure by regulator to give notice of determination of application for an environmental permit, variation, transfer or surrender within statutory time-period ('deemed refusal'). | 9 ✓ |

F. GROUNDS OF APPEAL

Please enter your grounds of appeal below or tick the box if you prefer to send them as a separate document ☐ *Please continue on a separate sheet if necessary*

IT WAS WRONG OF NRW NOT TO HAVE DETERMINED THE APPELLANT'S APPLICATION FOR AN ENVIRONMENTAL PERMIT WITHIN THE RELEVANT PERIOD PROVIDED FOR BY PARAGRAPH 15, SCHEDULE 5, ENVIRONMENTAL PERMITTING REGULATIONS 2016 (2016/1154). THE APPELLANT REQUESTS THAT IN THE EXERCISE OF THE POWERS AVAILABLE TO THE INSPECTOR UNDER THE REGULATIONS, IN PARTICULAR REGULATION 31, THE INSPECTOR GRANTS THE APPELLANT AN ENVIRONMENTAL PERMIT AS SOUGHT IN THE APPLICATION DATED AS RECEIVED 31 JANUARY 2022, TOGETHER WITH ITS RESPONSE DATED 17 SEPTEMBER 2022 TO NRW'S SCHEDULE 5 REQUEST FOR INFORMATION RECEIVED BY THE APPELLANT ON 19 JULY 2022.

G. CHOICE OF PROCEDURE

Please note that we must also take the preference of the relevant regulator (Local Authority / Natural Resources Wales) into account when we decide how the appeal will proceed.

Please tick **ONE** box only I

1. Written Representations

W ☐

This procedure involves an exchange of the parties' written statements, followed by a visit to the appeal site by the Inspector who is responsible for determining the appeal.

You and a representative for the Natural Resources Wales / Local Authority will be given an opportunity to accompany the Inspector during the site visit.

2. Hearing

H ☐

A hearing is a discussion, held under the direction of the Inspector. It lets parties exchange their views in a less formal atmosphere than at a public inquiry. Hearings are open to the public and third parties may be heard at the discretion of the Inspector. Hearings are generally conducted in the spirit of the Town and Country Planning (Hearings Procedure) (Wales) Rules 2003, SI 2003 No. 1271. Hearings are not usually suitable for appeals that:

- are complicated or controversial and have created a lot of local interest; or
- require cross-examination of witnesses.

Please note that although you may prefer a hearing, the Inspectorate will also consider whether your appeal would be best dealt with at a more formal inquiry or on the basis of written representations.

3. Inquiry

I ☒

This is the most formal of procedures. Although it is not a court of law the proceedings will often seem to be quite similar as the parties to the appeal will usually be legally represented and expert witnesses will be called to give evidence; inquiries are open to the public and third parties may be heard at the discretion of the Inspector. In general, an inquiry is the best way to deal with a case that:

- involves complex legal issues;
- have caused a lot of local interest; or
- involve the need to question evidence through formal cross-examination.

An inquiry will be held if you, or the regulator, decide that you do not want to use the written representations procedure and we decide that a hearing is unsuitable. Sometimes, even if both parties have opted for the written representations procedure or an informal hearing, we may decide to hold an inquiry. If we do, we will tell you why.

If you want us to hold an inquiry, please set out your reasons below:

PLEASE REFER TO PAGE 8 ONWARDS FOR FURTHER INFORMATION.

H. ESSENTIAL SUPPORTING DOCUMENTS

The documents listed in 1 – 5 below MUST be sent with your appeal form. If we do not receive all your appeal documents within the statutory appeal period, we may not be able to accept it.

Please tick the boxes to show the documents you are enclosing: ✓

1. A copy of the relevant **application**. 1 ☐
2. A copy of any relevant **environmental permit**. 2 ☐
3. A copy of the **decision** or **notice** (the subject of the appeal). 3 ☐
4. Copies of any relevant **correspondence** between you and the regulator. 4 ☐
5. A list (stating drawing numbers) and copies of all **plans, drawings and documents** sent to the regulator as part of the application. The plans and drawings should show all boundaries and coloured markings given on those sent to the regulator. 5 ☐

Copies of the following must also be sent, if appropriate:

6. Additional plans, drawings or documents relating to the application but not previously seen by the regulator. Please number them clearly and list the numbers below: 6 ☐

[illegible]

Personal Details

Personal Details on this page will not be publicly available

1. APPELLANT PERSONAL DETAILS	
Address PLATTS AGRICULTURE LIMITED, MINERS PARK, MINERS ROAD, LLAY INDUSTRIAL ESTATE, LLAY, WREXHAM.	
Postcode	
LL12 0PJ	
Daytime Tel	Fax
E-mail	
I prefer to be contacted by E-mail <input checked="" type="checkbox"/> Post <input type="checkbox"/>	
2. AGENT PERSONAL DETAILS (if any)	
Address UNIT G1, THE WILLOWFORD, TREFOREST INDUSTRIAL ESTATE, PONTYPRIDD.	
Postcode	
CF37 5BF	
Daytime Tel	Fax
E-mail	
I prefer to be contacted by E-mail <input checked="" type="checkbox"/> Post <input type="checkbox"/>	



The gathering and subsequent processing of the personal data supplied by you in this form, is in accordance with the terms of our registration under the Data Protection Act 1998. Further information about our Data Protection Policy can be found on our website under "Privacy Statement".

Please turn over

PLEASE SIGN BELOW

1. I confirm that sections A to H have been fully completed and are correct

✓
☐

2. I confirm that I have attached the following documents:

- a) Relevant application
b) Relevant environmental permit
c) Regulator decision or notice
d) Grounds of appeal*
*if not given in section G of this form


☐
☐
☐
☐

3. I have completed the Personal details page at the end of this form

☐

4. have sent a copy of this form (inc. necessary supporting documents and grounds of appeal) to the regulator today

☐

Signature: 

Name (in capitals) OLIVER MATTHEWS

Date 03 11 22

On behalf of (if applicable)

SEND**1 COPY to us at:**

The Planning Inspectorate
Crown Buildings
Cathays Park
CARDIFF
CF10 3NQ

E-mail: wales@pins.gsi.gov.uk

1 COPY to the Regulator

Send a copy of the appeal form to the address from which the decision notice was sent (or to the address shown on any letters received from the Regulator). There is no need to send them all the supporting documents again, send them any supporting documents not previously sent as part of the application.

1 COPY for you to keep**WHEN WE RECEIVE YOUR APPEAL**

When we receive your appeal form, we will:

1. Tell you if it is valid and who is dealing with it.
2. If everything is in order, we will give you an appeal **start date** and **timetable**.
3. Inform the regulator of the start date of the appeal (if applicable).

If you submit information or representations late we may be unable to consider them, the Inspector may not see them and that may be returned to you.

At the end of the appeal process, you will receive the Inspector's decision in writing, which will include details of the Inspector's reasoning.

REASONS FOR AN INQUIRY

THIS APPLICATION FOR AN ENVIRONMENT PERMIT IS HIGHLY CONTENTIOUS. NRW HAVE SHOWN ITSELF UNWILLING, WITHOUT JUSTIFICATION, TO GRANT THE PERMIT. WHILST NRW REQUIRED THE APPELLANT TO APPLY FOR A BESPOKE PERMIT, ITS COMPETITORS, ALL OF WHOM ARE BASED IN ENGLAND, HAVE BEEN ALLOWED BY THE ENVIRONMENT AGENCY TO TRADE WITHOUT A BESPOKE PERMIT. MOREOVER, NRW HAS COMMENCED PARALLEL CRIMINAL PROCEEDINGS IN THE COURSE OF WHICH IT HAS MADE COMMENTS WHICH SUGGEST THAT IT WILL NOT GRANT THE APPELLANT A PERMIT, WHICH COULD BE CONSTRUED AS PREJUDGING THE OUTCOME OF A PERMIT APPLICATION WITHOUT THE DETERMINATION PROCESS BEING FULLY COMPLETED. THERE HAS BEEN A LACK OF ANY SCIENTIFIC JUSTIFICATION FOR THE REFUSAL OF A PERMIT, AND IT IS HIGHLY LIKELY THAT ANY SCIENTIFIC EVIDENCE NOW PRODUCED BY NRW WILL WARRANT CAREFUL SCRUTINY IN PUBLIC. THE EFFECT OF NRW'S ACTIONS HAVE BEEN SERIOUSLY TO DIMINISH THE PROFITABILITY OF THE COMPANY TO THE BENEFIT OF ITS COMPETITORS. THE TERMS OF A BESPOKE PERMIT WILL BE OF CONSIDERABLE INTEREST IN THE WOOD RECYCLING / ANIMAL BEDDING / FARMING SECTORS, SO THAT A PUBLIC HEARING IS JUSTIFIED. IF THE APPELLANT DOES NOT RECEIVE A PERMIT, IT IS FAIR TO SAY THAT THERE WILL BE A DEGREE OF AMBIGUITY IN ITS UPSTREAM AND DOWNSTREAM MARKETS, AS WELL AS RISKS TO THE EMPLOYMENT OF ABOUT 60 MEMBERS OF STAFF. SEE FURTHER BELOW:

- 1. THE APPELLANT ACCEPTS WOOD RESIDUE FROM SUPPLIERS WHO TYPICALLY MAKE WOOD FURNITURE FROM MDF BOARD OR CHIPBOARD OR SIMILAR. THE SAWDUST AND OTHER MATERIAL ARE PULVERISED INTO ANIMAL BEDDING AND CUBICLE CONDITIONER. IT IS SOLD TO ABOUT 3,000 OR MORE FARMING AND EQUINE CLIENTS.*
- 2. THERE IS A COMPLEX INDUSTRY-WIDE ISSUE CURRENTLY ABOUT WHAT WOOD CAN BE USED AS BEDDING OR AS CUBICLE CONDITIONER FOR ANIMALS. THERE ARE IMPORTANT AND UNRESOLVED ISSUES ABOUT WHAT CONSTITUTES 'TREATED' WOOD, FROM LEGAL, REGULATORY, PHYSICAL AND CHEMICAL PERSPECTIVES.*
- 3. THE APPELLANT'S COMPETITORS ARE BASED IN ENGLAND. THERE IS FIERCE RIVALRY FOR THE WOOD RESIDUE (FOR WHICH A PRICE IS PAID) AND ALSO FOR THE MARKET TO WHICH TO SUPPLY BEDDING AND CONDITIONER.*

4. *THE APPELLANT HAS HAD AN EXCELLENT REPUTATION AND THEREFORE THERE IS A LOT AT STAKE COMMERCIALY. IT TRADED FROM ABOUT 1973 WITHOUT COMPLAINT FROM NRW. SINCE 2018 IT HAS HELD THE ROYAL WARRANT FOR ITS CUBICLE CONDITIONER. IT HAS WON NUMEROUS TRADE AWARDS AND BEEN AN AMBASSADOR FOR BOTH WALES AND THE UNITED KINGDOM. IN 2019 IT WAS A FINALIST FOR BUSINESS OF THE YEAR FROM THE BRITISH CHAMBER OF COMMERCE. IN 2020 PLATTS WAS RECOGNISED BY CHWARAE TEG (A BUSINESS PROGRAMME SUPPORTING DIVERSITY AND EQUALITY) WITH THE 'FAIR PLAY EMPLOYER AWARD FOR GENDER EQUALITY', PLATTS HAVE ALSO BEEN NOMINATED NATIONALLY FOR THE 'LOGISTICS UK PEOPLE CHAMPION OF THE YEAR'. IN 2022 IT WON TWO AWARDS FROM THE FEDERATION OF SMALL BUSINESSES, NAMELY NATIONAL FAMILY BUSINESS OF THE YEAR AND THE WALES ENVIRONMENTAL / SUSTAINABILITY AWARD.*
5. *FOLLOWING AN UNANNOUNCED SITE VISIT BY NRW OFFICERS ON 5 MARCH 2020, THE APPELLANT WAS REQUIRED BY NRW TO SUBMIT AN APPLICATION FOR A BESPOKE ENVIRONMENTAL PERMIT, NOTWITHSTANDING THAT IT HAS BEEN TRADING SINCE 1973 WITHOUT AN ENVIRONMENTAL PERMIT AND NOTWITHSTANDING THAT NONE OF ITS COMPETITORS (IN ENGLAND) HAVE BEEN REQUIRED TO CARRY OUT THEIR OPERATIONS WITH THE BENEFIT OF AN ENVIRONMENTAL PERMIT.*
6. *THE APPELLANT DECIDED TO ACCOMMODATE NRW AND CONSIDERED THAT THE GRANT OF PERMIT WOULD BE STRAIGHTFORWARD. PRINCIPLE 1 OF THE REGULATORS' CODE STATES THAT "REGULATORS SHOULD CARRY OUT THEIR ACTIVITIES IN A WAY THAT SUPPORTS THOSE THEY REGULATE TO COMPLY AND GROW" AND THE APPELLANT HAD EVERY REASON TO SUPPOSE THAT A PERMIT WOULD BE SPEEDILY GRANTED.*
7. *ON 21 MAY 2021 THE APPLICATION WAS FIRST SUBMITTED TO NRW. HOWEVER, IT BECAME APPARENT TO THE APPELLANT THAT NRW WAS UNWILLING TO PROGRESS THE APPELLANT'S PERMIT APPLICATION, IF NOT APPEARING TO BE OBSTRUCTIVE IN THE DETERMINATION OF THE APPLICATION.*
8. *IN DECEMBER 2021 NRW DECIDED TO PROSECUTE THE APPELLANT FOR NOT HOLDING AN ENVIRONMENTAL PERMIT. IN A LETTER DATED 18 JULY 2022 SEEKING TO EXPLAIN NRW'S DECISION TO PROSECUTE, THERE IS A RECURRING THEME, WHICH IS: "USE OF TREATED WOOD WASTE IN ANIMAL BEDDING IS NOT AUTHORISED UNDER THE REGULATORY REGIME". THIS STATEMENT LEADS THE APPELLANT TO SUPPOSE THAT NRW WILL NOT GRANT IT A PERMIT, THE STATEMENT BEING UNWARRANTED AND WITHOUT JUSTIFICATION. THE*

APPELLANT'S ENVIRONMENTAL CONSULTANT HAS PREPARED A REPRESENTATIVE SAMPLING PROGRAMME AND LABORATORY ANALYSIS IN ACCORDANCE WITH ENVIRONMENT AGENCY WM3 ASSESSMENT GUIDANCE BY REFERENCE TO WHICH SUPPLIERS' WOOD RESIDUE CAN BE TESTED FOR THE RISKS OF HARM. ITS CONSULTANT SHOWS THAT THE MATERIAL WHICH THE APPELLANT PROCESSES IS AT LEAST AS SAFE AS "CLEAN" WOOD. NRW'S POSITION IS INEXPLICABLE. THE APPELLANT'S POSITION VIS-À-VIS NRW MEANS THAT IN ALL FAIRNESS THERE SHOULD BE A PUBLIC HEARING, WITH THE POSSIBILITY OF CROSS-EXAMINATION, SO THAT IT IS POSSIBLE BOTH TO UNDERSTAND AND TEST NRW'S POSITION.

9. ON 31 JANUARY 2022 THE APPELLANT'S PERMIT APPLICATION WAS RE-SUBMITTED, AND ON 13 APRIL IT WAS DULY MADE ON 19 JULY 2022 THE APPELLANT RECEIVED A SCHEDULE 5 NOTICE FROM NRW REQUESTING FURTHER INFORMATION AND ON 17 SEPTEMBER 2022 THE APPELLANT PROVIDED NRW WITH A COMPREHENSIVE SET OF ANSWERS. IT IS THIS PERMIT APPLICATION, WHICH IS SUBJECT TO THE DEEMED REFUSAL, NRW HAVING EXCEEDED THE TIME ALLOWED FOR THE DETERMINATION OF THE APPLICATION.
10. NRW HAS RECENTLY INDICATED (EMAIL 21 OCTOBER 2022) THAT IF THE APPELLANT HAD NOT SERVED A NOTICE UNDER PARAGRAPH 15 OF SCHEDULE 5 (NON-DETERMINATION) IT WOULD HAVE ISSUED A FURTHER SCHEDULE 5 NOTICE.
11. THE APPELLANT SEEKS A FAIR AND PUBLIC HEARING IN FRONT OF AN INDEPENDENT TRIBUNAL IN ORDER TO OBTAIN THE GRANT OF A PERMIT. MEANWHILE IT IS THE VICTIM OF INDIRECT COMPETITIVE ATTACKS FROM ITS RIVALS IN ENGLAND.
12. THE APPELLANT RESPECTFULLY REQUESTS AN EXPEDITED HEARING. IT SUGGESTS THAT, AFTER SUITABLE READING TIME PRIOR TO THE HEARING, A 5-DAY INQUIRY WILL BE SUFFICIENT.
13. (THE APPELLANT CONTINUES TO CORRESPOND WITH NRW OUTSIDE THE APPEAL PROCESS IN ORDER TO OBTAIN ITS PERMIT.)

Notice of request for more information

Environmental Permitting (England and
Wales) Regulations 2016

Notice requiring further information

To:

Company Secretary
Platts Agriculture Limited
Miners Park
Miners Road
Llay Industrial Estate North
Llay
Wrexham
LL12 0PJ

CC: Oliver Matthews - [REDACTED]

Application number: PAN-016818

Natural Resources Wales, in exercise of its powers under paragraph 4 of Part 1 of Schedule 5 of the above Regulations, requires you to provide the information detailed in the attached schedule. The information is required in order to determine your application for a permit, dated **13/04/22**.

The information requested should be sent to the following address by **09 December 2022**.

Information should be sent to:

[REDACTED]

Name	Date
Kate Thomas	09/11/2022

Authorised on behalf of Natural Resources Wales

Ffôn/Tel

[REDACTED]

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Croesewir gohebiaeth yn y Gymraeg a'r Saesneg
Correspondence welcomed in Welsh and English

Schedule

1. Fire prevention and mitigation plan (FPMP)

We have assessed the fire prevention plan submitted with the application (document reference (ECL Ref: PLAT.01.02/FPP) from here on referred to as the FPMP, against our current guidance – [“Natural Resources Wales Fire Prevention & Mitigation Plan Guidance – Waste Management, Guidance Note 16”](#) (from here on referred to as “the FPMP guidance” in this section). Some information is either missing, unclear or does not meet the requirements of our guidance.

In addition to this, Section 1.1.4 of the current FPMP states:

“The FPP guidance is applicable to the storage of incoming wood waste at the Facility. As the finished product conforms to the quality protocol of PAS 111, the finished product is not subject to the FPP guidance and is therefore, not considered within this FPP document”.

We have assessed your end-of-waste justification (document reference: ‘PAN-016818 Schedule 5 Notice Response End of Waste Justification’), submitted in response to Schedule 5 Notice issued 19/07/22, and do not agree that it has been demonstrated that the processed wood waste meets ‘end-of-waste’, therefore the FPMP must be revised to include **all wood waste** stored on site. This includes all wood waste after it has been processed on site.

Reference number	Detail
1.1	<p>ACTION: Revise the FPMP to consider all wood waste stored on site – including all wood waste after it has been processed (currently referred to as “product”). This includes untreated, clean wood waste and treated wood waste.</p> <p>As the current FPMP does not consider the waste after is has been treated, the following sections in particular will need to be revised.</p>
1.2	<p>ACTION: Remove the following paragraph from the FPMP:</p> <p><i>1.1.4 The FPP guidance is applicable to the storage of incoming wood waste at the Facility. As the finished product conforms to the quality protocol of PAS 111, the finished product is not subject to the FPP guidance and is therefore, not considered within this FPP document.</i></p> <p>Given that we do not agree that the end-of-waste justification demonstrates processed wood waste meets end-of-waste, this paragraph is incorrect and must be removed from the FPMP to avoid any confusion.</p>

Site plan

We have reviewed the site layout plans submitted (Drawings 002 and 004) in the FPMP. Some information must be revised or is missing from the site plans, as specified by Section 5 – Fire Prevention and Mitigation Plan contents of the FPMP guidance.

ACTION: Revise the FPMP site layout plans (Drawings PLAT.01.02-02 and PLAT.01.02-04) to include the following information, as set out in the guidance and below:	
Reference number	Detail
1.3	ACTION: Revise the wording of “PAS 111 Compliant product” to “processed waste” and include the form that the waste is in, i.e., baled, loose etc.
1.4	<p>ACTION: Revise the layout of the waste stockpiles to comply with the stockpile sizes and separation distances as set out in Section 8 of the guidance.</p> <p>The site layout plan shows processed waste stored around the perimeter of the site without any separation distances or fire walls in place. These stockpiles currently exceed the maximum size as specified in the guidance.</p>
1.5	<p>ACTION: Revise the site layout plans to include a clear area around the perimeter of site. In accordance with the guidance this can vary depending on the layout of the site and permitted stack sizes (with the separation distances as illustrated in Table 2). The clear area must be available at all times and identified on your site plan.</p> <p>This has not been included in the site layout plan.</p>

Fire Prevention and Mitigation Plan contents

The following information in the FPMP must be included to consider all waste stored on site, as specified by Section 5 of the guidance.

ACTION: Revise FPMP to provide the following information, that meets the standards in the guidance:	
Reference number	Detail
1.6	ACTION: Revise the FPMP to include the total amount of waste and the types and forms (e.g., unprocessed, shredded, chipped, fines or baled) that are stored on site at any one time.

	<p>Section 3.4.4 states that the total amount of combustible waste material stored on site at any one time will not exceed 420 tonnes. This amount must be revised to include the processed wood waste.</p> <p>The FPMP must include the total amount of waste (in tonnes) and the form of waste to be stored at any one time for the following:</p> <ul style="list-style-type: none"> - unprocessed wood waste - processed wood waste
1.7	<p>ACTION: Revise the FPMP to include how each waste type will be stored</p> <p>Whilst the FPMP includes details of waste storage prior to it being processed, the FPMP must be revised to include all storage of waste after it has been processed.</p>
1.8	<p>ACTION: Revise the FPMP to include the location within the site where each type of waste will be stored</p> <p>Whilst the FPMP includes details of waste storage prior to it being processed, the FPMP must be revised to include all storage of waste after it has been processed.</p>
1.9	<p>ACTION: Revise the FPMP to include the maximum time each type of waste will be stored on site and how it will be managed</p> <p>There are inconsistencies in the FPMP, Table 4 states <i>“Unprocessed wood waste will remain in the trailer for no longer than 5 days”</i>.</p> <p>Section 3.4.5 states: <i>“The maximum time unprocessed waste will be stored on site is one month, however, the aim is to process and export as soon as practicably possible”</i>.</p>
1.10	<p>ACTION: Revise the FPMP to include the maximum time each type of waste will be stored on site and how it will be managed</p> <p>The FPMP must be revised to include the maximum storage time for all processed waste, and how it will be managed.</p>
1.11	<p>ACTION: Revise the FPMP to include the maximum size of any waste stockpiles (in m³, stipulating the maximum length, width, and depth). The FPMP must also include separation distances on site that comply with Section 8 of the guidance, for all waste - unprocessed and processed.</p> <p>The site layout plan shows processed waste around the perimeter of the site without any separation distances or fire walls in place. These stockpiles currently exceed the maximum size as specified in the guidance. And whilst the FPMP includes information on wood waste storage prior to processing, the FPMP must include wood waste storage details after processing, including when the wood waste is stored in wrapped bales and when the wood waste is stored in loose form.</p>
1.12	<p>ACTION: Revise the FPMP to include the minimum separation (fire break) distance between waste piles or storage areas</p>

	Whilst the trailers can be moved in the event of a fire, details are required in the FPMP on the storage of wood waste after it has been processed, i.e. waste that is not stored in trailers.
1.13	<p>ACTION: Revise the FPMP to include the fire prevention techniques used, including management of hotspots (sign of potential self-combustion), monitoring, reporting, recording and actions</p> <p>Whilst the FPMP includes techniques on this for wood waste prior to treatment, the FPMP must be revised to consider these techniques after the waste has been processed.</p>
1.14	<p>ACTION: Revise the FPMP to include techniques used to minimise the risk of fire spreading within the site or from the site.</p> <p>The FPMP currently includes techniques to prevent the risk of fire spreading from the unprocessed waste but must also include measures for the processed waste.</p> <p>The site layout plans show processed waste stored along the southern boundary of the site close to other units on the industrial estate and woodland running alongside a large portion of the site boundary. Techniques to minimise the risk of fire from spreading to these receptors must also be included.</p>

Common causes of fire and preventative measures

The following information in the FPMP requires further clarification and must be revised to consider all waste stored on site.

Reference number	Detail
1.15	<p>ACTION: Revise the FPMP to include the risk of self-combustion and measures used to prevent it. This includes unprocessed and processed waste.</p> <p>Table 4 in Section 5.1 states “Combustible waste will be stored no longer than one month. However, Platts will aim to process the incoming material within 5 days and arrange for its export off site as soon as practically possible to minimise over-stocking which in-turn minimises the risk of overheating and spontaneous combustion”.</p> <p>It is not clear what measures are in place if waste is stored longer than 5 days.</p>

Storage times and self-combustion

The following information in the FPMP must be included to consider all waste stored on site, as specified by Section 7 of the guidance.

Reference number	Detail
1.16	ACTION: Revise the FPMP to include the maximum storage time that unprocessed waste will be stored on site for and procedures in place to monitor and control this.
1.17	ACTION: Revise the FPMP to include the maximum storage time for processed waste and procedures in place to monitor and control this. Note: as per Table 1 in the guidance, the maximum storage time for combustible fines/dusts & very small particle size wastes is 1 month, and your FPMP must comply with this. <i>Section 3.4.5 states that you will “aim to process the incoming material within 5 days and arrange for its export off site as soon as practically possible”</i> Stating that the waste will be exported off site as soon as practically is not sufficient. You must be clear in your FPMP on the maximum time that the processed waste will be stored on site and the procedures you have in place to ensure that waste is not stored longer than this time.

Baled waste storage

Processed waste is to be wrapped and stored in bales. The FPMP must be revised to consider the risk from baled waste storage, in accordance with Section 10 of the guidance.

Reference number	Detail
1.18	ACTION: Revise the FPMP to include measures that will be used to reduce the risk of fire occurring within the bales, in accordance with Section 10 of the guidance. It is recommended that your FPMP shows: <ul style="list-style-type: none">- What sampling and testing protocol you will use to make sure you assess a representative number of bales (minimum 10%) during monitoring.- That you get representative temperature readings from the centre of the bales, and from the bales within the centre of each stack pile- That you turn the bales to make sure that the waste stays cold.
1.19	ACTION: Revise the FPMP to detail the storage configuration of bales and demonstrate how you have addressed any fire risk from the configuration.

Enclosing Stacks Using Bays and Walls

The following information is missing from the FPMP as specified by Section 11 in the FPMP guidance:

Reference number	Detail
1.20	<p>ACTION: Revise the FPMP to include evidence that the concrete blocks are produced in accordance with the current standards.</p> <p>Section 3.5.4 states that the FPMP Quarantine area shown in Drawing PLAT.01.02-04 uses fire resistant walls, although evidence of this has not been provided.</p> <p>The guidance states that the product specification of materials used to construct bays/walls will <u>need</u> to be established via approved stockiest to ensure appropriate standard of fire resistance are met.</p>
1.21	<p>ACTION: Revise the FPMP to include evidence or confirmation that the installation method used is in line with the manufacturers recommended installation requirements.</p> <p>This information is not included in the FPMP and is a requirement of the guidance.</p>

Waste stored within a building

Reference number	Detail
1.22	<p>ACTION: Confirm if any waste (unprocessed or processed) is to be stored within the 'factory building', and if so, update the FPMP in accordance with the guidance, including updating the site layout plans.</p> <p>It is not clear if any waste is to be stored within the processing building. Even temporary storage must be included.</p>

Layout of waste stacks on your site

The following information is missing from the FPMP as specified by Section 14 of the FPMP guidance and the FPMP must be revised to consider all waste stored on site.

Reference number	Detail
1.23	<p>ACTION: Revise the site layout plans and the FPMP to include all mobile plant to be used on site and the storage location during and outside of operational hours.</p>

	<p>The site layout plans do not show where plant is located (forklift trucks, telehandler) etc., which are included in the planned preventative maintenance regime section of the FPMP.</p> <p>In accordance with the guidance, the FPMP must show the location/s of occupied buildings and high-asset value equipment and plant location of potential ignition sources on your site.</p>
1.24	<p>ACTION: Revise the FPMP to consider and comply with Section 14 of the guidance.</p> <p>Given that you will need to revise the stockpile sizes and separation distances, you will need to ensure that you pay particular attention this section and ensure that your revised FPMP complies with this section of the guidance.</p>

Water supplies

The following information in the FPMP must be revised to consider all waste stored on site and comply with Section 20 of the FPMP guidance.

Reference number	Detail
1.25	<p>ACTION: Revise the FPMP to calculate the amount of water required during a worst-case scenario incident (e.g., one (your largest stack) or more stacks are on fire.</p> <p>In accordance with the guidance, you must have sufficient water supplies available to your site for firefighting to take place and to manage a worst-case scenario incident (e.g., one (your largest stack) or more stacks are on fire.</p> <p>The calculations provided in Section 6.5.4 are based on the largest stockpile being 154m³ (one trailer). The FPMP must be revised based on the stockpile sizes of the processed waste (which are currently much greater than 154m³).</p>
1.26	<p>ACTION: Revise the FPMP to demonstrate that the available water supplies are sufficient in providing the required amount in a worst-case scenario incident, in relation to the action 1.26 above.</p>
1.27	<p>ACTION: Revise the FPMP to include evidence of “hydrant inspection information provided by North Wales Fire and Rescue Services. Information received - 05/05/2021”.</p> <p>This evidence has been referenced in the FPMP but has not been included.</p>
1.28	<p>ACTION: Revise the FPMP to include evidence of “Hydrant capability provided Hafren Dyfrdwy – Customer Service General Enquiries, Operations and Pressure Testing Team and Supply Team, information received 19th and 20th May 2021”.</p>

	This evidence has been referenced in the FPMP but has not been included.
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Managing fire water run-off

The following information in the FPMP requires further clarification and must be revised to consider all waste stored on site.

Reference number	Detail
1.29	<p>ACTION: Revise the FPMP to demonstrate how firewater will be contained on site without leaving the site boundary and therefore posing a risk to the environment, including (but not limited to) the new mitigation area adjacent to the site. This should include demonstrating that the containment measures are sufficient for the amount of firewater that could be generated for the largest stack.</p> <p>Section 6.6.4 states: <i>If required, booms would be deployed to create impermeable barriers with a containment capacity of 36m³ (15m x 15m x 0.16m (height of boom)). This will provide immediate firewater capacity and prevent the firewater from leaving site. It should be noted that the unprocessed waste material is stored a significant distance from the drainage network on site.</i></p> <p>A containment capacity of 36m³ is not sufficient for the potential 184m³ of firewater run off, required for the 154m³ trailer.</p> <p>The FPMP states that as a contingency measure a third party could be contacted to tanker firewater from the site. However, given that the booms could not contain all of the firewater, the FPMP should acknowledge this and include measures that will be used, and not just as a contingency plan.</p> <p>The FPMP must be clear on when the third party will be contacted to assist in managing firewater and should demonstrate that these measures are suitable and consider what contingencies are in place if there is a delay with the third party arriving on site and the risk of firewater running off of the site.</p> <p>The revised FPMP must consider that the amount of firewater generated will increase if the stockpile sizes increase.</p> <p>Given that the FPMP must be revised to include the processed waste, the largest stack may well increase from 154m³, and thereby increasing the amount of firewater generated.</p>

1.30	ACTION: Revise the FPMP to demonstrate that sufficient number of booms are on site to ensure that fire water run-off is contained.
1.31	<p>ACTION: Revise the FPMP to consider where run off will go if the site is unattended and the containment measures are not deployed quickly enough.</p> <p>Section 6.6.7 states <i>Platts will have the capability of deploying the firewater containment measures within a matter of minutes. Platts is proposing to operate 24/7, however, if the site is unattended, the containment measures will be deployed within a maximum of 30 minutes.</i></p>

Designated quarantine area

The following information in the FPMP must be revised to consider all waste stored on site.

Reference number	Detail
1.32	<p>ACTION: Revise the FPMP to demonstrate that the quarantine area holds at least 50% of the volume of the largest stack. Note: any changes made to the quarantine area must comply with the other requirements in Section 22 – “Designated quarantine area” of the guidance.</p> <p>Section 3.5.4 states that the volume of waste that can be held in the quarantine area is currently 315m³. This is based on the largest stockpile being a 156m³ trailer load. Given that the FPMP must be revised to include all waste, including processed waste which is shown in larger stockpiles, the quarantine area details need to be revised to ensure that the FPMP complies with Section 22 of the guidance.</p>
1.33	<p>ACTION: Revise the FPMP to demonstrate how fire water run-off will be prevented from leaving the site and running to the Great Crested Newt designated habitat area adjacent to the site.</p> <p>The quarantine area is in the western corner of the site, which is next to the Great Crested Newts designated habitat area. Whilst the habitat area is included as a sensitive receptor, the FPMP does not consider the potential risk to this or include measures to prevent fire water run off to this area.</p>

2. Noise impact assessment

We have assessed the noise impact assessment submitted as part of your application (document reference Noise Impact Assessment at Platts Agriculture Limited, Wrexham, ECL Ref: PLAT.01.02/NIA, April 2022, Version: Issue 2). This is the document we are referring to below when we refer to your 'NIA'. We have assessed your NIA against our current guidance '[Noise and vibration management: environmental permits - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/noise-and-vibration-management-environmental-permits)' and the requirements of BS4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound' and require further information.

The NIA report concludes no likely significant impact. However, we cannot currently agree with this conclusion as not all operational times have been considered and that the impact of uncertainty has not been suitably minimised.

ACTION: Provide an amended noise impact assessment to include the following information, in accordance with '[Noise and vibration management: environmental permits - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/noise-and-vibration-management-environmental-permits)' and the requirements of BS4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound:

Reference number	Detail
2.1	<p>ACTION: Confirm if all sound sources operate at night and at weekends.</p> <p>Under hours of operation, it is stated that the site operates 24 hours a day, 7 days a week. However, it is not clear if all sound sources are operating at night and at weekends, including the hammer mill and extraction systems.</p>
2.2	<p>ACTION: Confirm mode of operation.</p> <p>Mode of operations states hammer mills and extraction systems operate 'as required' and are manually activated. However, the NIA does not state how often is '<i>as required</i>', e.g., twice a day, for an hour.</p>
2.3	<p>ACTION: Revise existing context to include assessment of the sensitivity of the receptors.</p> <p>Existing context is described in 3.2.5 – industrial estate with commercial and industrial units. Other potential sound sources are also described. However, the sensitivity of the receptor is not assessed.</p>
2.4	<p>ACTION: Provide justification to support why NSR1 and NSR3 are suitable surrogate locations.</p>

	<p>The measurement locations, both on-site and off-site are given and marked on a map, and their distance to the site given. Information on the ground between the site and measurement locations is given in section 3.2. Whilst justification is given as to why measurements were not undertaken at the nearest noise sensitive receptor (NSR1 - The Meadows Barns), it is not justified as to why the alternative location chosen is a suitable surrogate location, when it is an additional 300m further away from the site.</p> <p>We have noted that, although the NIA has kept NSR2 and states that there was no alternative, NSR3 is a further 300m away from the original NSR3. The rear of the houses in the original NSR3 would have possibly provided a better indication of impact.</p>
2.5	<p>ACTION: Carry out measurements and provide an assessment of noise impact for weekends.</p> <p>Measurements were conducted on 13th & 14th October (Wed and Thurs). We have noted that no weekend measurements were taken of the residual, ambient, or background sound levels. Given that under hours of operation, it is stated that the site operates as 24 hours a day, 7 days a week, it is likely to be operational over the weekend. Any measurements undertaken in a BS4142 assessment should be representative, the level of sound from the site may be different over the weekend, as will the residual sound. Therefore, we would expect sound levels to also be measured and assessed for the weekend.</p> <p>Consideration of alternative assessment locations closer to the site should be taken (as noted in the point above) and justified in the NIA.</p>
2.6	<p>ACTION: Provide information to justify why 15-minute measurement intervals are suitable and representative for the on-site measurements.</p> <p>The on-site measurements used to calculate specific sound at the NSRs were only undertaken for 15-minute intervals at each location, potentially introducing uncertainty into these measurements where the sound source is variable in nature. Whilst a 15-minute measurement may be suitable for a stable sound source, the graphs (Figures 27 to 32) do not support this.</p>
2.7	<p>ACTION: Justify your method of calculating the specific sound level with consideration to the below points or provide a revised NIA using a method that reduces uncertainty. Additionally, you need to provide specific sound levels for the night-time and weekends and use them to determine the rating level over background.</p> <p>Due to the issues observed at the measurement locations off-site and the resultant residual being either above the ambient or within 3dB of the ambient, we agree that the off-site measurements do not reliably provide the specific sound level. It is noted that whilst the report confirms the site is operational during the off-site</p>

	<p>ambient monitoring, it does not confirm if the hammermill and extraction systems are running. This needs to be confirmed.</p> <p>You have also undertaken ambient measurements on-site and propagated these to the NSRs. Whilst, measuring the ambient closer to the sound source and propagating may be an appropriate alternative to measuring at the NSRs, we have the following concerns:</p> <ul style="list-style-type: none"> - the on-site ambient monitoring has only been undertaken during the day and on a weekday, therefore we question if this is representative given that the site also operates during the night and on the weekend. - as stated above, the on-site monitoring and subjective description suggests that the sound sources are variable, rather than producing a constant steady sound. A 15-minute measurement may not be sufficient to determine a representative sound level. - near-field measurements i.e., the measurements taken on site, increase uncertainty due to directivity, and distance from the sound source for example. There are alternative methods that could have been used to determine the specific sound level, for example carrying out off-site monitoring between the site and receptors but closer to the site and propagating it to the receptor; or measuring the sound level on site from each sound source individually (in the absence of the other on-site sound sources). It is not clear why the method used has been chosen and the uncertainties introduced have not been considered. - Table 11 of the report provides the propagated sound levels at the NSRs, however it is noted that these are the off-site measurement locations and therefore NSR1 is 300m further away from the site than the nearest noise sensitive receptor (The Meadows Barns). Therefore, we do not know the impact at the nearest noise sensitive receptor. - Additionally, Table 11 only presents the daytime sound levels. It does not consider the propagated sound levels from site and compare them to night-time background levels. Which, using the same ambient measurements (if they are likely to be the same) would result in a rating level over background of +12 dB, +10dB and +8dB at NSR1-3 respectively. Indicating a significant adverse impact.
2.8	<p>ACTION: Correct the L90 figures and amend these to the non-operational times and provide a suitable background (LA90) value for weekends.</p> <p>Background sound levels have been provided for each NSR, daytime and night-time in Table 5 and Table 6. This includes LA90</p>

	<p>measurements when the site is operational and non-operational. The LA90 measured when the site is operational appears to have been used for the assessment of impact in Tables 7 and 8 for all NSRs during daytime and for NSR1 during night-time. Background sound should be measured in the absence of the specific sound and therefore it is not understood why the LA90 has been used when the site is operational.</p> <p>No measurements were undertaken at the weekend, despite that the site operates 7 days a week. Background noise is likely to be different at the weekends, therefore the background is not representative of all periods of interest (clause 8.1, BS4142).</p>
2.9	<p>ACTION: Revise the NIA to correct the rating level based on the following:</p> <p>A character correction of +3dB has been applied, however, it appears that this has been applied to the onsite source sound which is not correct but should be applied to the specific sound.</p>
2.10	<p>ACTION: Revise the NIA to consider the potential impact of uncertainty and explain how the uncertainty introduced by the below points has been minimised (in accordance with Clause 10 of BS4142).</p> <p>Uncertainty has not been adequately considered for the following:</p> <p>a) the complexity of the sound source and the level of variability in sound emission from the source. - the measurements taken of the main sound source on site were taken in the presence of other sound sources on site, i.e., when measuring at LOC1 near the hammermill, mobile plant was operating nearby, and the reversing alarm was clearly audible. Section 9.1.5 of the report identifies that the sound source has low variability and constant when vehicles are not operating in the vicinity of the source. This shows that the sound from the site is variable, and that the report doesn't take into consideration that the vehicle movement and operation of mobile plant on site are also sound sources.</p> <p>b) the complexity and level of variability of the residual acoustic environment. - this is somewhat described in section 9.1.6, although it does not specify the level of uncertainty introduced by this.</p> <p>c) the level of residual sound in the presence of the specific sound at the measurement location. - this is somewhat described in section 9.1.6, although does not specify the level of uncertainty introduced by this.</p> <p>d) the location(s) selected for taking the measurements.</p>

	<p>-The measurement point NSR1 has been used as a surrogate location for the nearest noise sensitive receptor at The Meadows Barns, as the surrogate location is a further 300m away from the site than The Meadows Barns there is significant uncertainty in using measurements at this location for the ambient.</p> <p>- Additionally, there are a number of potential uncertainties introduced with near-field measurements, which are relevant therefore for the on-site measurements of the source. Including distance, directivity, operating duration, other sources, and measurement period. None of these have been considered, specifically if the distance of measurements from sound source were estimated or measured, and if measured how.</p> <p>- There is also potential for reflection at some of the on-site monitoring locations, in particular LOC4.</p> <p>e) the distance between sources of sound and the measurement location and intervening ground conditions.</p> <p>- There is an element of uncertainty introduced with the near-field measurements on-site, the distances to the source specified need to be accurate to reduce this uncertainty and how this has been reduced has not been explained e.g., using a laser meter.</p> <p>f) the number of measurements taken.</p> <p>- only two measurements have been taken at each NSR for daytime and night-time. This may not cover the range of operations on-site and in particular the operation of the hammermill and extraction system (which is described as being in use when required). The level of uncertainty of this should be considered.</p> <p>g) the measurement time intervals.</p> <p>- whilst the measurement time intervals for the ambient and residual are in line with BS4142, the measurement time intervals for the on-site monitoring may not be long enough given the variability of the sound sources – this includes the plant and vehicle movements on site. Generally, longer monitoring periods provide more reliable data. The uncertainty is highest when the monitoring periods are short and when the sound source is erratic or variable. This needs to be considered.</p> <p>h) the range of times when the measurements have been taken.</p> <p>- the range of times measurements were undertaken should be representative of when the source operates. Whilst measurements have been taken during the day and night-time, none were carried out at the weekend. Therefore, a level of uncertainty is introduced</p>
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	as to whether the conclusions on the impact are reflective of all conditions.
2.11	<p>ACTION: Provide a revised noise management plan, produced in accordance with our guidance ‘Noise and vibration management: environmental permits - GOV.UK (www.gov.uk)’ and taking the recommendations of the revised noise impact assessment into consideration.</p> <p>Whilst your application includes a noise management plan, given that the noise impact assessment is required to be revised, the noise management plan must be updated accordingly.</p>

3. Dust management plan (DMP)

We have assessed the dust management plan version 2 (document reference ECL Ref: PLAT.01.02/DMP) from here on referred to as the “DMP” submitted in your application and have found that some information is missing or requires further detail.

Reference number	Detail
3.1	<p>ACTION: Revise the DMP to be specific in when all actions will be carried out.</p> <p>The DMP is vague in explaining when and what will trigger actions to be carried out and states that some actions will be carried out “if necessary”.</p> <p>Section 5.6.1 states: <i>A daily visual inspection shall be undertaken by the Shift Supervisor to monitor any fugitive dust emissions and instigate any control measures if necessary.</i></p> <p><i>And</i></p> <p>Table 41: DMP Risk Assessment and Control Measures states: <i>If necessary, the site access road and internal surfacing will be swept with a mechanical road sweeper.</i></p>
3.2	<p>ACTION: Revise the DMP to correct numbering.</p> <p>Table 41: DMP Risk Assessment and Control Measures should be Table 4.</p>
3.3	<p>ACTION: Revise the DMP to include measures to prevent dust emissions from leaving the building from the unloading bays.</p> <p>The site layout plan (drawing PLAT.01.02-04) shows that the trailer unloading bays have a ‘high’ level of sawdust. It is unclear from the site layout plans or the DMP if there are doors fitted to these bays or if there are other measures to prevent fugitive emissions from leaving the bays.</p>

4. Environmental permitting technical requirements

We have assessed the Environmental permitting technical requirements document (document reference ECL Ref: PLAT.02.01/EPTR) from here on referred to as the “EPTR” submitted in your application and have found that some information is missing or requires further detail.

Reference number	Detail
4.1	<p>ACTION: Revise the EPTR to include measures to visually check all infrastructure include the milling machinery.</p> <p>Section 4.3.8 EPTR states: “Platts will implement a regime of visual site condition checks to ensure that the infrastructure is maintained in good condition”. This includes a list of infrastructure that will be checked; however, this section does not include the milling machinery.</p>
4.2	<p>ACTION: Revise the EPTR to include information on the ‘white shavings screener’. If this equipment is to be used in the processing of waste, the EPTR must be revised to include measures used to prevent emissions from this activity and the other management plans (NIA, DMP and FPMP) will also need to be updated accordingly.</p> <p>The site layout plans include “white shavings screener”. However, no information is provided in the rest of the application documents on what this is, the risks it poses and the measures in place to prevent these risks.</p>
4.3	<p>ACTION: Revise the EPTR to include waste acceptance procedure used by the operator at the waste producer’s site.</p> <p>Whilst the EPTR states that a waste acceptance procedure will be put in place with the primary purpose to confirm that characteristics of the incoming waste matches the information provided at the pre-acceptance stage. It also states that on collection from the waste producer the operator’s drivers will undertake loading checks (trailer, connection, canopy), however it is not clear what visual checks will be carried out.</p>
4.4	<p>ACTION: Revise the EPTR to include waste acceptance procedure for waste brought to site by a third party. If under no circumstances will waste be brought to site by a third party, the EPTR must be clear and state this.</p> <p>The EPTR includes waste acceptance measures on the basis that waste material is brought to site by the operators own vehicles following waste acceptance checks being carried out at the waste producers. These measures would not be appropriate in the event</p>

	that waste was brought to site where the operator was not the waste carrier.
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End

Classifying waste wood

1. Virgin timber/wood is not waste. This means that we will not apply waste regulatory controls (Environmental Permitting Regulations 2016 etc) to virgin wood residues, provided the residues are certain to be used for the same purpose to which you would use virgin wood.
2. Virgin wood includes trees and branches that have specifically been harvested because the wood itself is the desired product. Although not waste, it may become waste if subsequently discarded.
3. Virgin wood residues are any wood residues left over from the harvesting of virgin wood or from a process where the primary purpose is not to collect wood, e.g., tree-surgery, land maintenance and clearing operations. This includes residues from sawmills, carpenters, and wood product manufacturers. The material will not have had any treatments applied, i.e., preservatives, glues, resins, wood coatings or paint, or have been mixed with other wood sources like particle board.
4. Virgin wood residues may be a by-product and not a waste. To be considered a by-product the virgin wood residue must meet all of the requirements of the by-product test (Article 5 (1) of the revised Waste Framework Directive). These are:
 - a. Further use is certain.
 - b. It can be used directly without any further processing other than normal industrial practices for virgin wood, such as chipping and drying.
 - c. It's produced as an integral part of a production process, e.g., land clearance for development or off-cuts from wood product manufacturing.
 - d. Further use is lawful i.e., the substance or object fulfils all relevant product, environmental and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts.
5. Wood, which is not virgin timber/wood or used wood and associated residues such as off-cuts, shavings chippings and sawdust, is waste. It is waste whether the wood is treated or not treated and it will remain waste and be subject to waste regulatory controls until fully recovered.
6. Once considered waste, the wood must be correctly classified and coded in accordance with the current Waste Classification Technical Guidance (WM3) and also appropriately described to ensure that it ends up in the correct end destination.
7. Within the current Waste Classification Technical Guidance (WM3), waste wood entries can be found within chapters 03, 15, 17, 19 & 20 of the List of Wastes. Each of these chapters (apart from chapter 15) contains a mirror hazardous and mirror non-hazardous waste code for wood.

8. When classifying waste and determining the correct List of Waste code, there is an absolute legal requirement to assess it as either hazardous or non-hazardous, which will include a determination of the chemical composition of the waste. Without this assessment, the waste defaults to hazardous and the appropriate hazardous waste List of Waste code must be used. (Natural Resources Wales does have a temporary Regulatory Decision (RD46.6) in place at the moment allowing departure from this requirement under certain conditions).
9. Natural Resources Wales considers that waste wood is either:
 - a. Untreated waste wood;
 - b. Treated non-hazardous waste wood;
 - c. Treated hazardous waste wood.
10. Untreated waste wood is waste wood without any form of treatment applied.
11. Treated non-hazardous waste wood is wood which has had some form of treatment applied. This may include, but not be limited to, wood that has been treated by being injected, impregnated, sprayed, infused (soaked) or surface coated with any organic or inorganic substances for the purposes of preserving or protecting it or for changing its appearance and has been assessed and found to be below hazardous waste thresholds. Wood types considered treated include, MDF, chipboard, panel board, plywood, and particle board. This is as a result of the glues/resins and other substances (including a percentage of treated waste wood) contained during manufacturing. Some of these treatments may not be obvious and visible such as surface coatings including varnishes and paints, glues and non-natural veneers.
12. Treated hazardous waste wood is waste that has been treated, and following assessment, contains hazardous properties above hazardous waste thresholds.
13. If untreated waste wood and treated waste wood are mixed together, we would consider the entire load to be a treated waste wood. Similarly, if treated non-hazardous wood and treated hazardous wood are mixed together, the final mix will be considered hazardous.
14. We are aware of industry developed standards for waste wood such as PAS111. Natural Resources Wales acknowledges that the industry standard has been developed to provide a grading system for use of waste wood by the wood recycling industry. However, the industry standard does not supersede the regulatory classification for waste wood. The Standard itself acknowledges this by stating '*waste regulator requirements may further limit input for specific end uses. Check with the regulator for the most up to date information*'.

Waste wood treatment facilities:

15. Natural Resources Wales is aware that untreated and clean waste wood is often processed to produce bedding materials and similar related products for retail or for bulk wholesale markets.
16. Operators wishing to undertake a waste processing (treatment) activity require an appropriate environmental authorisation (permit or exemption).
17. Under the conditions of the Environmental Permitting Regulations 2016 T6 (Treating waste wood and waste plant matter by chipping, shredding, cutting, or pulverising) exemption it states that if you are chipping treated or coated wood, it must not be used within animal bedding. Therefore, only untreated waste wood can be processed under this exemption for use within animal bedding.
18. If the condition of the exemption cannot be met, an Environment Permit will be required for the treatment activity.
19. There are two types of environmental permit that can be applied for by the operator of the activity. A Standard Rules environmental permit or a Bespoke environmental permit. A Standard Rules permits contains fixed conditions that cannot be amended, if the conditions of a standard rules permit cannot be met then a bespoke permit must be obtained.
20. There is currently only one Standard Rules permits available for the treatment of solely waste wood. This is an SR2011No4 (Treatment of waste wood for recovery). If the conditions of this Standard Rules permit are unable to be met a Bespoke permit would be required. Any Bespoke permit for the treatment of waste wood would be determined upon the specifics of a particular application.
21. With the treatment of clean and untreated waste wood being prepared for use within animal bedding or a similar activity, traceability is key and must be ensured so as to be certain that the wood remains clean and untreated.

Use of waste wood in animal bedding:

22. Any use of waste wood within any application (including animal bedding or similar activities) must be authorised via an appropriate environmental permit or exemption.
23. In accordance with the legislation, Natural Resources Wales's interpretation is that only untreated and clean (free of any fixtures or fittings including for example nails, screws, staples etc.) waste wood can be used for animal bedding or in any other setting where it will come into direct contact with animals/livestock.

Use of untreated waste wood in animal bedding:

24. Under the conditions of the Environmental Permitting Regulations 2016 U8 (Using waste for a specified purpose) exemption, only untreated wood

shavings, woodchip and sawdust, and oversized compost can be used within animal bedding (or horse manèges) which has been classified and coded as 030105 or 191207. This exemption also has a quantity limit at any one time of 100 tonnes with only one U8 exemption being able to be registered at each point of use.

25. The U8 exemption also allows a small number of other waste streams to be used as animal bedding including shredded paper and cardboard and paper fibre, de-inked paper pulp and de-inked paper sludge from paper manufacturing only.
26. If the conditions of the exemption cannot be met, an Environment Permit will be required for the use of untreated waste wood.
27. There are two types of environmental permit that can be applied for by the operator of the 'use' activity. A Standard Rules environmental permit or a Bespoke environmental permit. A Standard Rules permits contains fixed conditions that cannot be amended, if the conditions of a standard rules permit cannot be met then a bespoke permit must be obtained.
28. There are currently no Standard Rules permits available for the use of untreated waste wood in animal bedding, therefore any operators wishing to undertake this activity would need to apply for a Bespoke permit. Any Bespoke permit to use untreated waste wood for animal bedding or within a similar activity would be determined upon the specifics of a particular application.

Use of treated waste wood in animal bedding:

29. There are no environmental authorisations (exemptions or permits) available for the use of treated waste wood in animal bedding or in any other similar activity.
30. The only authorised use available for treated wood waste is likely to be use as biomass fuel or for the manufacture of engineered or composite board.
31. This regulatory approach is therefore clear and is consistent with regulatory advice [provided to the agricultural sector](#) as the end users of such wastes in these circumstances. It is also consistent with the advice provided in the Wood Recycling Industry document PAS 111 and recently issued [Waste Wood Assessment guidance](#) to the wood industry by the Wood Recyclers Association.
32. Further to this, any use of treated waste wood in animal bedding would need prior approval from Animal & Plant Health Agency (APHA) and the Food Standard Agency, due to the potential risk of treatments (known or unknown) applied to treated waste wood entering the food chain.
33. We note that independent agricultural assurance schemes such as '[Red Tractor](#)' and organisations such as the [Agricultural and Horticultural and](#)

[Development Board](#) and [Meat Promotion Cymru](#) specifically state within their guidance that treated wood should not be used within bedding materials.

Subsequent disposal of animal bedding:

34. Natural Resources Wales also considers how animal bedding once it has been used and is to be discarded should be managed.
35. Animal bedding or similar materials which contain clean and untreated waste wood, will be subject to waste regulatory controls after its use.
36. Following the use of animal bedding or similar materials, there are a number of waste exemptions available.
37. Exemptions for treatment activities include:
 - T23 (Aerobic composting and associated prior treatment),
 - T24 (Anaerobic digestion at premises used for agriculture and burning of resultant biogas) and a
 - T25 (Anaerobic digestion as premises not used for agriculture and burning of resultant biogas).

It should be noted however that these exemptions listed only apply to fully biodegradable animal bedding (i.e., clean and untreated waste wood).

38. The treated waste from these activities may then be spread to land in accordance with either the
 - U10 (Spreading of waste on agricultural land to confer benefit) or the
 - U11 (Spreading of waste on non-agricultural land to confer benefit) exemption.

It should be noted however that these exemptions listed only apply to fully biodegradable animal bedding (i.e., clean and untreated waste wood).

39. Environmental permits are also available for the treatment and use of used animal bedding such as SR2012No3 (composting in closed systems) however these permits also specify that the material must be fully biodegradable bedding only (i.e., clean, and untreated waste wood).

End of waste for use of waste wood:

40. To utilise a waste material without waste regulatory controls it must cease to be waste. This is known as 'End of waste' and can be determined using one of three methods
 - a. Compliance with end of waste regulations'
 - b. Meeting a quality protocol;
 - c. Through an individual assessment on a case-by-case basis in accordance with Article 6 (1) of the revised Waste Framework Directive

41. There are currently no end of waste regulations for waste wood.
42. There are currently no quality protocols which exist for waste wood for use within any application.
43. To note, since 2007, the Environment Agency have worked extensively with the Wood Recyclers Association to determine if there is an option for a Quality Protocol for waste wood. Insufficient information/evidence was provided by the industry to conclude that all waste wood input through a waste treatment facility was untreated and therefore there was limited confidence in the ability to achieve end of waste through a quality protocol. Treated wood was not under consideration due to the unknown and unidentifiable treatments applied to wood during production.
44. An individual assessment on a case-by-case basis is therefore the only option available to demonstrate end of waste for waste wood taking into account waste law principles, relevant case law and the revised Waste Framework Directive. However, Operators should consider the work of the Wood Recyclers Association and previous work on the Quality Protocol when bringing information and evidence to the Regulator to make their end of waste assessment case.
45. Article 6(1) of the revised Waste Framework Directive sets out the harmonised criteria that must be met for a substance, material or object to achieve end of waste status, often referred to as the End of Waste test. The criteria is that
- a. The substance or material will be used for a specific purpose;
 - b. There is an existing market or demand for it;
 - c. It fulfils the technical requirements for the specific purposes and meets the existing legislative and standards applicable to products;
 - d. The use will not lead to overall adverse environmental or human health impacts
46. To consider an operator's determination that they have met the criteria set out above for the use of untreated waste wood in animal bedding, Natural Resources Wales would expect to see detailed evidence including significant justification which satisfies the above criteria.
47. If Natural Resources Wales are not satisfied that the End of Waste criteria has been met we would require appropriate environmental authorisations to be in place for the storage, treatment and / or use of the substance or material.

Platts Agriculture Operation:

48. Natural Resources Wales understands the operation as applied for at Platts Agriculture is to accept and process waste wood material. The application is for the storage of non-hazardous waste wood with treatment limited to pulverising and removal of wood dust from clean wood waste for use as

animal bedding material, and pulverising of treated wood waste to produce wood dust for use as a cubicle conditioner within the agricultural livestock sector.

49. The waste wood material being accepted and processed within your operation consists of both untreated and treated (MDF board, chipboard or similar) waste wood.
50. The 'animal bedding' and 'cubicle conditioner' which you are producing are both used within the agricultural and /or equine sectors and come within direct contact with the animals irrespective of quantities or volumes used.
51. Natural Resources Wales draws no distinction between the terms 'animal bedding' and 'cubicle conditioner' for the purposes of environmental regulation. This is due to associated issues and risks, including but not limited to animal health and welfare impacts, impacts upon the environment and impacts upon the food chain.
52. You have applied for an environmental permit on the basis that all wood which is being received onto your site is waste, as advised by Natural Resources Wales when seeking to bring your site activities into compliance with Environment Permitting Regulations 2016.
53. The environmental permit applied for will allow specified treatment activities, in order to process the material into a material of your specification – not an industry or approved regulator standard.
54. You have advised within the application that once processed, the resultant material is sold by yourself to both the agricultural and / or equine sectors for use within the wider industry.
55. We are aware that there is a significant market already established for the use of untreated and clean waste wood within the agricultural and / or equine sectors.
56. However, unless End of Waste has been achieved for any of the material being produced on your site, waste regulatory controls will apply and an appropriate environmental authorisation (Permit of exemption) will be required for its subsequent storage and use. This means that whilst the material remains at your facility, it will still be subject to waste regulatory controls and upon each subsequent deposit of material, an appropriate environmental authorisation (Permit or exemption) must be in place.
57. Natural Resources Wales position in Wales is consistent with all UK environmental regulators and we continue to work in collaboration with these regulators on waste wood related matters.
58. To further address your End of Waste claim we note that:

- a. Whilst you have undertaken research with users of the material, no research has been undertaken or evidence provided to demonstrate that an appropriate animal health regulator or food standards regulator has approved the material for use;
- b. Methods used to measure and assess the suitability of the waste as a replacement bedding or similarly related material: comfort, cleanliness, animal health and welfare impacts, impacts on the environment, impacts on the food chain have not been addressed and documented with detailed evidence.
- c. The statement referencing that the application rate is such that there is no risk to human health from dust generation when the material is applied in the cubicle does not appear to have been reviewed by or received independent verification from a public health organisation/representative.

Regulatory Decision

Regulatory Decision - WSG-RD-46.6: Classification of waste wood

This Regulatory Decision (RD) applies to the classification of waste wood.

It follows the work undertaken so far and the continuing work of the Waste Wood Classification Project which began in September 2017 to identify potentially hazardous waste wood items and the extent to which they are still in circulation.

Criteria you must comply with

Unless properly sampled, analysed and assessed as non-hazardous, the following waste wood types must be segregated and consigned as hazardous waste to sites authorised to accept hazardous waste wood. Further to this, these items must not be mixed or blended with non-hazardous waste wood.

- Railway sleepers
- Telegraph poles
- Waste wood from hydraulic engineering such as wood from docks
- Waste wood from industrial applications such as cooling tower timbers, wood block flooring or moulds
- Waste wood from boats, carriages or trailer beds
- Waste wood treated with creosote

Mixed waste wood from Household Waste Recycling Centres and construction and demolition sites which do not contain the items listed above, can be managed using the following non-hazardous waste codes provided they are destined for an Industrial Emissions Directive (IED) Chapter IV compliant permitted incinerator or co-incinerator or for the manufacture of engineered or composite board.

- 17 02 01 – mixed waste wood from construction and demolition
- 19 12 07 – mixed waste wood from wood processing
- 20 01 38 – mixed waste wood from household waste recycling centres

Mixed waste wood is not suitable for any other destination, for example animal bedding, horse ménages or combustion in an incinerator or co-incinerator which is not IED Chapter IV compliant.

You must make sure your activities do not endanger human health or the environment.

You must not:

- Cause a risk to water, air, soil, plants or animals
- Cause a nuisance through noise or odours
- Adversely affect the countryside or places of special interest.

Enforcement

A Regulatory Decision means that Natural Resources Wales will not normally take enforcement action against you provided that:

- Your activity meets the criteria set out in this Regulatory Decision
- You comply with the criteria set out in this Regulatory Decision
- Your activity does not, and is not likely to, cause environmental pollution or harm human health.

When to check back

This Regulatory Decision will be reviewed annually and is subject to the waste wood industry undertaking the following work;

- Continuing to monitor the hazardous waste wood content within the household waste wood stream
- Continuing to evidence and understand the quantities and types of hazardous waste wood arising from the demolition and refurbishment sectors.

When further evidence becomes available, NRW may change its position and may amend or withdraw this Regulatory Decision.

You'll therefore need to check annually with NRW to see if this Regulatory Decision still applies.

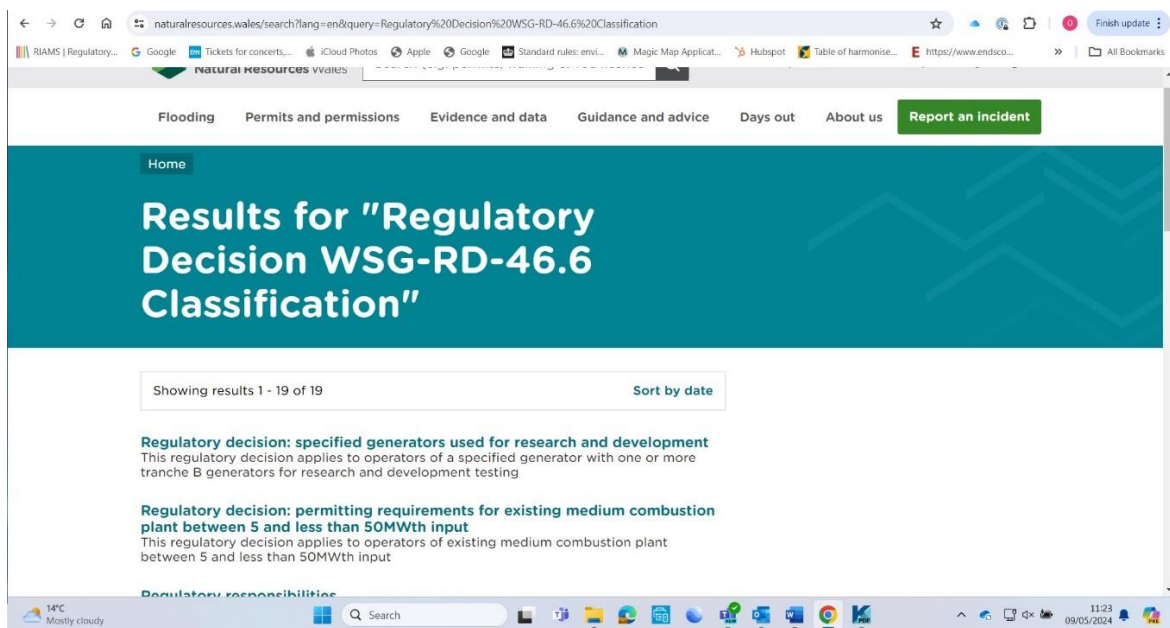
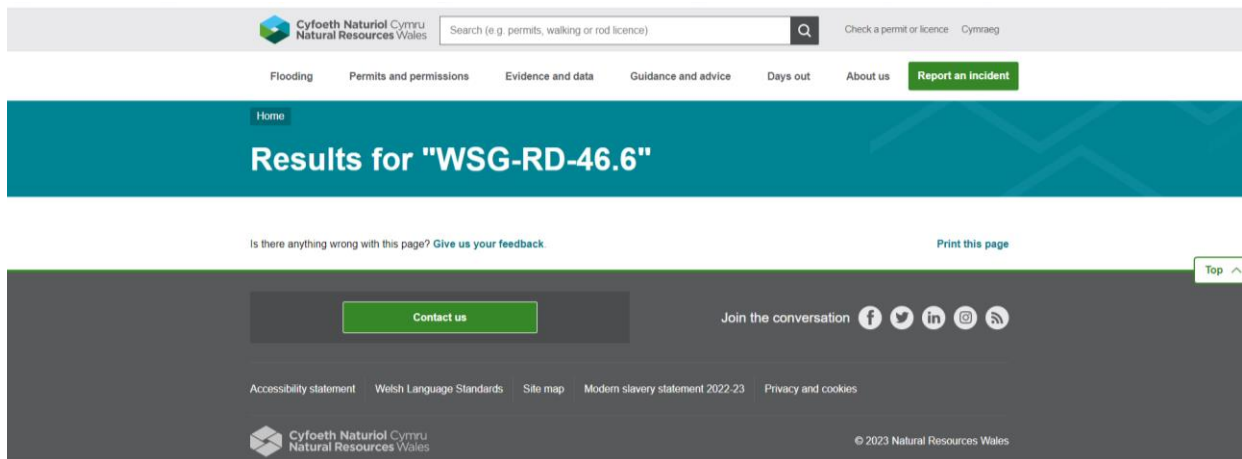
If this Regulatory Decision is withdrawn you must segregate hazardous waste wood and consign it as hazardous to an appropriately authorised site.

Contact Natural Resources Wales

General enquiries - Natural Resources Wales, Customer Contact Hub, Ty Cambria
29 Newport Road, Cardiff, CF24 0TP

Email - enquiries@naturalresourceswales.gov.uk

Telephone - 03000 65 3000 (Mon-Fri, 9am-5pm)



Subject: Platts Agriculture Limited - Data - Sample Analysis Results
Date: Tuesday, 23 January 2024 at 12:09:01 Greenwich Mean Time
From: Steve Garratt
To: Amos, Justin
Attachments: image001.jpg, Clean Results as a Comparator.xlsx, Clean Results by Supplier i2 lab.xlsx

Dear Justin,

Environmental Permitting Regulations 2016
Appeal by Platts Agriculture Limited
PCAC/PEDW ref CAS-02313-Z1D6V4

1. Thank you for your email of 22 December. For the purpose of this reply I have also read over your recent correspondence with Mr Matthews. I hope this email provides answers to your various queries, which concern the data used by Platts for its updated end-of-waste justification.
2. I anticipate that you will be forwarding a copy to your specialist expert. If your specialist has any queries not about the data, but about how it has been used, then please contact me and I shall do my best to assist. At some point, as we have discussed, the experts should meet prior to the inquiry.
- A. **Platts' End of Waste submissions and supporting test documentation**
3. First, it would be useful if I very succinctly set out how and why Platts uses the sampling data it collects, since this is concerned with the central issue, which is end-of-waste and the safety of the final products.
4. As you know, when wood is received at Platts, an initial visual assessment is made of the trailer. The source of every load is known in advance and the receipt of every trailer is pre-booked.
5. As a matter of internal nomenclature and for Platts' administrative convenience, "clean" wood consists, for instance, of the sawdust or larger material (such as offcuts) produced by a sawmill. This material constitutes the material supplied to customers as animal bedding (rather than as cubicle conditioner). Any other material, for instance that which is collected from furniture manufacturers, is classed as "treated" (or "manufacturing") wood.
6. In accordance with its procedures, samples of both "clean" and "treated" wood are taken by Platts when trailers reach the site at Llay, and these samples are sent to laboratories for analysis. The laboratories (I2 and then Elab) send their results back to Platts. I2 is the only laboratory which has analysed the "clean" material. Microbiological analysis has been subcontracted to first Scianteq Analytical and then to Cheshire Scientific.
7. On 19 July 2022 NRW raised a Schedule 5 request for further information "to demonstrate that the processed wood waste meets 'end of waste'". In its reply dated September 2022, ECL prepared a document *Schedule 5 Notice Response ECL Ref: Plat.01.02/EoW Version: Issue 1 September 2022* ("Platts' Sch.5 Response"), together with six appendices. Platts' Sch.5 Response set out its end-of waste position. The analysis of "clean" wood was made for the purpose of demonstrating that each individual supplier of "treated" wood contained potential elements of concern which would meet the safe standard of the comparator material.
8. Platts' Sch.5 Response was also accompanied by (i) a single Excel spreadsheet containing the laboratory results of 71 "clean" samples (*Clean Results as a Comparator*) and (ii) 57 Excel spreadsheets, one spreadsheet for each of 57 suppliers of "treated" (or "manufacturing") material. These spreadsheets contain data which was inputted by Platts' staff from the full laboratory results on a 'copy and paste' basis, ECL having gone on to compile the spreadsheets for each individual supplier.
9. As to the Excel spreadsheet showing the "clean" samples (see (i) above), the supplier is identified in row 2 ("sheet name") and the date of the sample is in row 7 ("date sampled").
10. As to the 57 additional spreadsheets, the supplier, again, is identified in row 2 ("sheet name") and the date of the sample is in row 9 ("sampling date").

11. Appendix V (*End of Waste Summary Table*) contains a summary of the results of those suppliers from whom 10 or more samples were taken (as made clear at para.1.5.7 of Platts' Sch.5 Response).
 12. On 14 July 2023 Platts submitted its *Appellant's Response to NRW's Statement of Case* ("Platt's SoC Response"). Platt's SoC Response enclosed a series of documents which substantially revised and substantially replaced its former end-of-waste position as previously set out in Platts' Sch.5 Response. These documents are listed at para.3 and consist of ECL's document *End of Waste Justification (Addendum) ECL Ref: Plat.01.02/EoW (Addendum) Version: Issue 1, June 2023* ("Platts' EoW Addendum") together with three expert reports, namely those of Dr Atkinson, Dr Vince and Dr Fisher. The core aim of the revised end-of-waste justification is to establish safe concentration levels of the substances set out in Table 7 of Platts' EoW Justification (p.18), and these form the basis of the revised *Statement of Conformity* set out in Appendix 1. The analysis of "clean" wood inputs remains an important part of Platts' assessment as a comparator material (see para.4.2 of Platts' EoW Addendum).
 13. It is Platts' case, in summary, that Dr Vince's report, read together with Platts' EoW Addendum and the other expert reports, conclusively shows that by any sensible standard of risk assessment, the end-of-waste test is met, in particular that there will be no adverse or human health impacts from the use of Platts' products. The concentration levels in Table 7 (and the *Statement of Conformity*) apply equally to Platts' animal bedding and to the cubicle conditioner.
 14. Platts' end of waste justification is based on the assessed quality outcome of its final products in accordance with a correct approach to risk. We understand that NRW's position is ultimately based on its characterisation of the source material received and processed by Platts.
 15. In preparing his report, you will see from paras.18 and 19 (and footnotes 13 and 14), that Dr Vince made use of the laboratory results contained in the spreadsheets which accompanied the Platts' Sch.5 Response dated September 2022 (see above). He focused on 891 samples, a number which is reached by excluding the 71 "clean" samples from the Excel spreadsheet as well as by selecting only the results from the 12 suppliers responsible for at least 20 supplies, namely suppliers AZ, B, C, D, E, F, G, H, I, J, L and O. This total of 891 can be readily calculated from the *End of Waste Summary Table*. The data relating to those suppliers to whom only 1-19 samples were attributable, were excluded by Dr Vince to ensure that the overall characterisation of the material was statistically sound, 891 samples being a very significant and robust data set, whilst, taken individually, a supplier providing fewer than 20 samples might be said not to have provided an appropriately representative input sample (by analogy with section C6 of the Gov.UK document *Guidance for the end of waste request form*).
- B. The 'library of results': NRW's emails dated 30 October and 22 December 2023**
16. In para.2.3.3 of Platts' EoW Addendum (supplied in July 2023), it was stated that "the results of all suppliers are ... collated into a *library of results* to track any upward trend in any particular substance concentration [emphasis added]".
 17. "Library of results" was not intended as a term of art. It is a reference to Platts' ongoing testing regime, which, in the context of the "treated" input material, has now continued beyond the date of the last of the 891 samples analysed by Dr Vince and extracted by him from the 57 separate spreadsheet analyses supplied with Platts' Sch.5 Response in September 2022.
 18. In your email of 30 October, you referred to the "library of sample analysis results" since they did not appear to have been supplied to PEDW. We understand this to be a reference to para.2.3.3, as set out above.
 19. Platts were asked to submit this material to you direct, and I understand that in November they supplied you with their collated spreadsheets of laboratory analysis results of the "treated" material since 11 May 2021 (the two Excel spreadsheets entitled *Results Library* or *Copy of Results Library*). You have identified these spreadsheets in your email dated 22 December to Mr Matthews. This constitutes Platts' library of results of the "treated" material as of the date on which Platts' latest results had been reported prior to its supply in November.

20. This library of results is populated by Platts' staff from the laboratory sheets supplied by the laboratories. The laboratory sheets are retained by Platts' staff.
 21. You will note that the date of each sample is set out in the second column of the *Data* sheet, the identity of the supplier being shown in the first column. There are a total of 1943 entries (rows 2 through to 1944), the last entry being in respect of a sample dated 16 October 2023. The third column shows the "result", i.e. "pass" or "fail", which is a reference to Platts' conformity standard as reproduced on the *Summary* sheet. A formula has been programmed into these sheets by means of which a "pass" or "fail" is automatically recorded. You will also readily see from the *Summary* sheet that the samples from 90 suppliers have been sent to you (rows 5 to 95), even though only one sample may have been taken.
 22. In your email dated 22 December 2023, after acknowledging receipt of the two spreadsheets, you asked Mr Matthews "to send us the consolidated spreadsheet of results you have received from Platts". In the context of the "treated" material, the only "consolidated spreadsheet of results" is also the "library of results", consisting of the two Excel spreadsheets which Platts has sent to you direct. There is no other document, but of course these two spreadsheets will now have been further updated since the November supply to you, and this process of updating will be ongoing into the future.
- C. Results data for "clean" wood waste: NRW's email dated 20 December 2023**
23. In your email dated 20 December you contacted Mr Matthews "about obtaining sample ... analysis results data for "clean" wood waste supporting Platts' ... original End of Waste submission".
 24. We take the reference to the "original End of Waste submission" to be a reference to Platts' Sch.5 Response, so that the "sample ... analysis results data for "clean" wood waste" is therefore the single Excel spreadsheet referred to above in para.8, containing the laboratory results of 71 "clean" samples (*Clean Results as a Comparator*). For the avoidance of doubt we attach the relevant Excel spreadsheet, although you have already been sent this document.
 25. For the further avoidance of doubt, the analysis results for "clean" wood are also updated by Platts every time that the further results are received from the laboratory. I attach the updated Excel spreadsheet for the period up to and including sampling date 20 November 2023 (*Clean Results by Supplier i2 lab*). As with the "treated" material, this spreadsheet will also have been updated since 20 November.
 26. Platts also monitors the microbiological results from the laboratories to which this work is subcontracted. The results are checked when they are received and the laboratory results are retained, but to date they have not been transferred onto a separate consolidated record.
- D. NRW's second email dated 22 December 2023**
27. In your second email of 22 December to the writer of this email (timed at 11:21), you refer again to the two Excel spreadsheets constituting the single Excel file (see para.19 above).
 28. In that email, you go on to raise certain issues concerning the laboratory reports which have been used to populate these spreadsheets, in particular a potential question as to the provenance of the information contained in the spreadsheets.
 29. I agree with your sentiment that both sides' experts should consider the same information when providing reports which include professional opinions, and also your observation about the number of hours which would need to be taken manually to review individual lab reports and to compare them with spreadsheets.
 30. Now that we have explained the process of compiling the spreadsheets which constitute the 'library of results', we need to establish what the experts should be doing in order to assist the Inspector as to the validity of Platt's opinion evidence (and specifically the Statement of Conformity), and also a proportionate way forward when it comes to the provenance of the spreadsheet data, should that be an issue NRW wishes to pursue.
 31. First, I would have thought that it is important that your specialist expert witness should examine the 891 results relied on by Dr Vince in order to prove a like-for-like assessment on which the Inspector can rely, of Platts' concentration levels of the substances in Table 7 (and therefore the Statement of Conformity).
 32. Secondly, there is the question whether or not your specialist witness wishes to analyse any of the contents of the 'library of results'.
- 423-

“treated” or of “clean” input material. If this will form part of any specialist opinion, then the sample dates on which such an analysis is to be done (which will be subsequent to the date of the last sample analysed by Dr Vince), and the extent of the data to be relied upon, should be agreed. So long there is agreement, your specialist and Dr Vince will be able to assist the Inspector on the same like-for-like basis as I have envisaged in the previous paragraph in respect of the 891 “treated” results from the 2022 spreadsheets.

33. Thirdly, there is the question to what extent you may wish your expert to interrogate the underlying laboratory analyses, the data from which has either been cut and paste, or copied, into the library sheets, as to the accuracy of which, Platts itself has no concerns.
34. It would be disproportionate and unnecessary to use the data from the laboratory sheets themselves in order to provide expert evidence as to the statement of conformity, and in any event this could result in minor and irrelevant discrepancies which the Inspector would have to consider. The relevant data analysed by Dr Vince came from the 57 spreadsheets. As I read your email, however, you are not proposing that this course should be adopted, since you are concerned with the question whether or not the provenance, or reliability, of the contents of the spreadsheets needs to be established.
35. As you go on to point out in your email, 30 hours manually to review almost 2,000 individual reports and to check them all against the spreadsheets would be unduly time-consuming.
36. Should your expert wish to undertake the reliability exercise, despite Platts’ confidence in their accuracy, I would propose that NRW and Platts select a reasonably reliable sample from the data available, each party selecting perhaps up to half a dozen of the “treated” spreadsheet entries and three from the “clean” input spreadsheets in order statistically to establish that the data in the spreadsheets has accurately been reproduced from the laboratory analyses. I have made this tentative suggestion without the input of Dr Vince, and I would also have thought that it would be better for the experts themselves to undertake any discussion as to the minimum necessary to perform the exercise to the parties’ reasonable satisfaction.

Conclusion

37. From the above, you will see that Dr Vince analysed the Excel spreadsheets provided in September 2022 in respect of 891 samples for the purpose of his report which informed the Statement of Conformity. We anticipate that your specialist expert will want to analyse the same spreadsheet data in order to assist the Inspector as to the validity or otherwise of Dr Vince’s conclusions.
38. Platts’ ongoing library of results in relation to the “treated” wood inputs is contained in the spreadsheets which Platts supplied to you in November 2023, and in relation to the “clean” wood, it is contained in the enclosed spreadsheet *Clean Results by Supplier i2 lab* (which includes the initial period covered by the spreadsheet *Clean Results as a Comparator*, which was 20 May 2021 through to 5 July 2022). Both are continually being updated by Platts staff from the laboratory analyses. If any of this ongoing data is to be the subject of expert opinion before the Inspector, then it would be sensible for the parties to agree a date of the samples and the scope of the data to be analysed, and in the case of the “treated” input material, this should all be subsequent to the last date of the 891 samples analysed by Dr Vince (sent to you in September 2022). A cut-off date will also have to be applied (I suggest November 2023, being the date when the spreadsheets were sent to you). If it is really necessary, then a similar exercise could be undertaken for the further data inputted between November 2023 and the date of the inquiry.
39. We enclose the Excel spreadsheet which consist of the analysis results data for the “clean” wood waste which supported the original end-of-waste submission, as requested (*Clean Results as a Comparator*) and also the spreadsheet *Clean Results by Supplier i2 lab*.
40. As to the possible issue you have raised as to the provenance of the spreadsheet data (i.e. testing the reliability of the library of results as populated by Platts from the laboratory analyses reports), our view is that, should you still consider that this is an exercise to be pursued, a selection of the data should be made by each party, with our respective experts liaising as to the scope of data which is statistically necessary. In your email to me dated 22 December, you wrote as follows: “if there is any issue with accuracy of the information in the

consolidated spreadsheet(s) and/or if we need to refer to individual lab reports, please could Platts let us know as soon as possible”. Platts does not consider that there is an issue with the accuracy of the information in the spreadsheet library of results, so that I hope that this reassurance is sufficient and that you do not wish to undertake this exercise.

41. I trust that this email sufficiently answers your queries, but if not, then please let me know.
42. We look forward to seeing any report from your specialist expert. If the safety of the products for the purpose of the end-of-waste test is to remain in issue at the hearing, then the experts will need to liaise to discuss their findings, and, as may be appropriate, they may need to discuss a shared approach to any of the data to be analysed. I am sure that we can facilitate such an exercise.

I look forward to hearing from you.

Attached.

- Excel spreadsheet *Clean Results as a Comparator*
- Excel spreadsheet *Clean Results by Supplier i2 lab*

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Guidelines for Environmental Risk Assessment and Management

Green Leaves III



Green Leaves III is the latest edition of the Government's Guidelines for Environmental Risk Assessment and Management. The document provides generic guidelines for the assessment and management of environmental risks.

The guidelines supersede earlier versions published in 1995 by the Department of the Environment, and in 2000 by the Department of the Environment, Transport and the Regions and the Environment Agency. This revision brings the guidelines in England and Wales in line with current thinking in the field of environmental risk management.

Advances

Developments in the field of risk assessment and management are reflected in this revision. These include pre-assessment considerations that help formulate the risk management question, tools and techniques to deal with uncertainty, and the identification of a broader range of options to manage the risk as a continuing process.

Methods are described for estimating the probability of harm to, or from, the environment, the severity of harm, and uncertainty. The guidelines focus on generic principles, rather than domain-specific risks, such as from river flooding, animal disease or hazardous wastes.

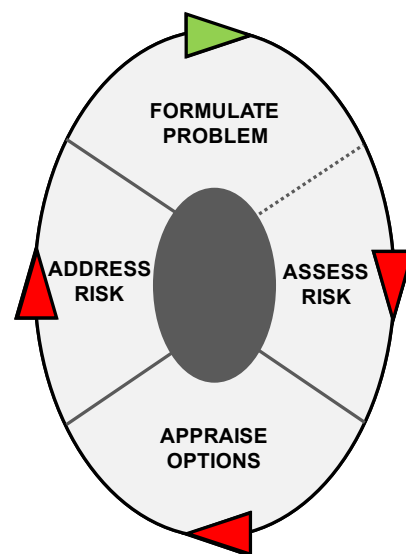
This work is part of a wider portfolio of work completed by the Collaborative Centre of Excellence for Understanding and Managing Natural and Environmental Risk (the Risk Centre), to build a network of risk practitioners and to encourage a more consistent approach to environmental risk assessment and management within Defra.

Framework

A cyclical framework for environmental risk management is provided to offer structure in what would otherwise be a complex array of considerations for the decision-maker. The framework also offers a mechanism through which the process of environmental risk assessment and management can be explained to stakeholders, and acts as a valuable aide-mémoire to multidisciplinary teams conducting risk assessment.

Four main components of risk assessment are identified:

- 1) formulating the problem;
- 2) carrying out an assessment of the risk;
- 3) identifying and appraising the management options available; and
- 4) addressing the risk with the chosen risk management strategy.



Each component has a dedicated chapter in the document that provides guidance for completing that stage. The importance of iteration, communication and learning is woven throughout the guidelines and reinforced in the closing chapter.

Guidelines for Environmental Risk Assessment and Management

Green Leaves III

Essential components

Essential components of environmental risk assessment and management that are conveyed in the document can be summarised as follows:

- risk questions are best informed by a range of stakeholders;
- when a risk problem is highlighted, the source, pathways and receptors under potential threat should be recognised;
- an assessment plan is then needed to outline the data requirements for assessment and the methods needed for data collection and synthesis;
- resources for the assessment can be allocated following initial risk screening and prioritisation;
- identifying the hazard at the beginning of the assessment should clearly define the harm to the environment that is of concern;
- an estimation of the potential consequences of the hazard being realised and an evaluation of the probability of impact can then be carried out
- this evidence collected is used to provide judgement as to the significance of the risk.

The risk management strategy

It is advisable to employ suitable techniques to analyse and understand uncertainties within the risk assessment when possible. The risk management options should then be considered in terms of their positive and negative effects according to technical and economic factors, environmental security, social issues and organisational capabilities.

The chosen strategy will usually involve terminating, mitigating, transferring, exploiting or tolerating the risk. The implemented strategy should be monitored to ensure the risk is controlled to an acceptable level. If this is not the case, iterations of the risk assessment and management processes should proceed as necessary.

In all the above, a clear organisational and people framework is required to ensure accountabilities are understood. When communicating the risk management strategy to the public, it is essential to highlight that the public have a responsibility to take reasonable care.

Case studies illustrating good practice

Publication of this revised, peer-reviewed guidance emphasises not only developments in scientific knowledge and information that supports risk assessment, but also improves the relevance of risk assessment through case studies that demonstrate good practice.

Who the guidelines are for

This document is intended to guide policy and regulatory staff in Government and its agencies, those assessing and managing environmental risks for Government, and other parties interested in the principles of managing environmental risks. The document assumes little prior knowledge.

As with previous versions, we expect these guidelines to be consulted widely by environmental risk practitioners across the UK Government and their agencies, by practitioners providing risk advice to Government, and by other stakeholders with an interest in how environmental risks are assessed and managed.

Environmental Permitting Regulations (England & Wales) 2010

Regulatory Guidance Series, No RGN 4

Setting standards for environmental protection

Document owner: National Services/ Knowledge, Strategy & Planning (KSP)

Record of changes:

Version	Date	Change
1.0	March 2008	Issued for launch of EPR
Draft	December 2009	Draft for informal consultation. Incorporated mining waste, water discharge, groundwater and radioactive substances activities.
2.0	April 2010	Minor editing after considering submissions. Explanation about single permits for a site.
3.0	November 2011	Changes to the sections related to: Best Available Technique Setting ELVs in permits for installations Waste Framework Directive Marine and Coastal Access Act 2009
4.0	August 2014	Rebrand to Natural Resources Wales
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SUMMARY

This is guidance on how our regulatory package sets the standards of environmental protection required through the Environmental Permitting (England and Wales) Regulations 2010. It will change with changes in Regulations, Government guidance and experience of applying the Regulations.

Operators should deliver the obligations as specified in their permit but this guidance may help them understand how those have been determined. If in doubt, they should discuss the issue with us and take their own legal advice as appropriate.

We deliver environmental standards using a regulatory package of:

- regulatory and technical guidance;
- an application form;
- environmental risk assessment tools;
- a template of permit conditions used to draft bespoke permits and rules for standard permits;
- a decision document template.

We have translated all the specific technical standards and requirements of the Directives implemented through the Regulations into appropriate application form questions, permit conditions/rules and guidance.

Specific Directive requirements must be met but there are two common themes:

- pollution must be prevented, including specifically meeting health and environmental quality standards;
- going beyond meeting environmental quality standards is sometimes required (e.g. using Best Available Techniques for activities subject to the Integrated Pollution Prevention and Control Directive) but this tends to be balanced by the need to compare costs with benefits.

Permit conditions and standard permit rules may specify certain key measures where fundamental for that type of activity to protect the environment. Other measures may be required through outcome-based conditions/rules leaving some flexibility on how the outcome is achieved.

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1. INTRODUCTION

About this guidance

The Environmental Permitting Regulations (the 'Regulations') implement a number of EU Directives and Government policies designed to protect people and the environment through permitting systems. The Regulations also partially fulfil the environmental protection requirements contained in other legislation (e.g. the Habitats Regulations).

When we permit an activity under the Regulations we may therefore have to apply a number of different environmental protection requirements to that activity.

In some cases these various requirements are discrete and different from each other, but in other cases there is overlap.

Some requirements are precise and prescriptive e.g. that a particular emission limit value (ELV) must be met. Others are not. For example it might be stated that a "high level of protection of the environment" must be secured; that there shall be "no significant pollution"; that there shall be "no risk to the environment"; that "odour or noise nuisance shall be avoided"; or that exposures to ionising radiation are "as low as reasonably achievable".

The operator is normally responsible for proposing how it intends to meet the requirements of the Regulations. The operator will set this out in an application for a permit, or for a variation.

This guidance explains how we should determine the requirements that should apply to a particular activity. It is mainly aimed at the permitting stage but some elements will be relevant to tasks such as permit reviews and compliance assessment.

The guidance is written for our staff but we make it available to help customers too.

2. THE REGULATORY PACKAGE

We have designed a regulatory package for environmental permitting to help both operators and our staff in proposing and determining the appropriate requirements of environmental protection.

The regulatory package consists of:

- **technical guidance** containing both general and specific indicative principles, standards and measures which the operator must use. Our technical guidance will be developed and maintained in accordance with the Regulators' Compliance Code. The operator can use the technical guidance as a benchmark for design, preparing applications and for operating their facility. Our staff must use the principles, standards and measures both in determining applications and for compliance assessment;
- an **application form** for permits and variations with standard questions about environmental protection measures (see Part B of the application form);
- environmental **risk assessment tools** (Guidance on environmental risk assessment - ERA), which enables the operator to make an assessment of the potential environmental impact and provides a way for the operator to compare and choose between different options to mitigate impacts;
- a **permit template** with both general conditions and specific conditions for different activities and sectors, which will ensure the permit provides the appropriate standards of environmental protection; and
- a **decision document template** which provides the permitting officers with a standard way of recording the key issues and a checklist of all decisions.

The following paragraphs describe the separate elements of the regulatory package and how they fit together.

2.1 Technical guidance

For some activities we have developed a technical guidance note (TGN) series to support the setting of appropriate environmental standards in permits. This series sets indicative technical standards and measures, both at a general level and specific to different industry sectors. We have also produced guidance which is relevant across a number of industry sectors (horizontal guidance) which provides more information on particular environmental issues such as odour, noise and energy efficiency.

The indicative measures set out in our TGN series have been developed to provide an appropriate level of environmental protection having regard to a consideration of the likely costs and environmental benefits of the measures, set in the context of what can be afforded in each sector. In the case of most IPPC Directive activities, the BREF¹ process will have considered costs and benefits for those matters subject to BAT. In these cases our guidance will be based on the relevant BREF for the sector.

¹ See Best available techniques (BAT) on page 14

We also have principles-based guidance on radiological protection, which is supported by more detailed guidance.

Requirements for activities falling within the scope of Directives relating to surface water and groundwater quality are generally set out in the relevant legislation and codes of practice.

2.2 The application form and risk assessment

We have designed the application form questions so that operators must identify the measures they intend to take by reference to the TGN series, where relevant. For certain, specified small-scale activities, where sufficient information is supplied with the application, we may be able to undertake an initial risk assessment ourselves; but generally operators must also assess the environmental impact of their proposal, to demonstrate an acceptable environmental outcome at the site. Though it will normally be the case, the operator cannot assume that compliance with the indicative technical measures will avoid adverse local impacts.

Our risk assessment guidance and the relevant TGN will lead the operator through the following process:

1. Identify the technical measures that will be used by reference to the relevant TGN (where different measures are proposed a justification will be required);
2. Identify the hazards, receptors and the impact of the activity when operated using the proposed technical measures;
3. If all impacts are “insignificant” (see the ERA guidance), nothing more is required
4. For any impacts which are not screened out as insignificant, the operator must return to the TGN for alternative measures that might be used to mitigate those impacts. If necessary the operator must make a cost/ benefit assessment to identify the measures that represent the best balance of costs and benefits including trade-offs between environmental media (the ERA guidance provides a way of making this assessment).

The process in relation to radioactive waste is broadly similar, but:

- The proposals need to be assessed against the radioactive substances regulation environmental principles and any relevant guidance;
- The operator must demonstrate that it has “optimised” the process to reduce the radiological impact to people to as low as reasonably achievable, taking into account economic and social factors.

There are separate considerations, not based on impact and risk, which may apply to operators who keep or use sealed radioactive sources, including source-security provisions.

2.3 The permit template and conditions

Standard rules permits

Where we have published standard rules for a particular activity, we are satisfied that an activity of the stated type, operated under those rules, will meet all relevant environmental requirements. We are satisfied that the relevant requirements will be met because the standard rules have been developed alongside an environmental risk assessment for the activity. This guidance does not consider applications for standard permits because the environmental protection measures have already been decided for those activities.

Bespoke permitting

The operator must apply for a bespoke permit where standard rules are not available or an activity is unable to meet the rules.

Where an operator is unable to meet the standard rules as a result of only one or two specific issues (e.g. proximity to housing raising a possible risk of an odour or noise problem), we can assess the application for a bespoke permit in relation to only those issues. We can therefore rely, where appropriate, on a standard rules generic risk assessment for some bespoke permit applications.

We have drafted permit conditions to provide an appropriate framework for all bespoke environmental permits².

When determining a permit application we must ensure that:

- the measures proposed by the operator will not cause an unacceptable impact on people and the environment (judged in accordance with the ERA guidance and other H series guidance, where relevant);
- that any impacts identified will be mitigated in accordance with a consideration of the relevant costs and benefits
- in relation to radioactive waste the impact on people has been reduced to as low as reasonably achievable, taking into account economic and social factors;

² See EPR generic permit template

- that the operator has justified any departures from the TGN indicative standards and other relevant guidance.

We should refuse the application if the measures proposed do not meet these requirements or unacceptable environmental impacts remain. We will permit practices involving radioactive substances only where these have first been approved as a class by Government (“justified”).

Where we grant a permit, the permit conditions must reflect our decisions on the appropriate measures. How we should achieve this is described below.

Single permits

Paragraphs 3.40 to 3.48 of the Core Guidance explain when we can issue a single permit covering more than one regulated facility, where we are the regulator for each facility, the operator is the same for each facility and (with some exceptions) all the facilities are on the same site. The standard permit could refer to more than one set of rules and a bespoke permit may refer out to a set of rules. For example, a bespoke permit could combine rules for a standard mining waste facility and bespoke conditions for a water discharge activity.

It is common for a permit to specify conditions which only apply to particular parts of a facility or site, e.g. a release point from a chimney stack or to control releases from a specified waste treatment area. We will ensure it is clear, using such cross references and diagrams as are necessary.

Permit conditions

Key measures

We will set a prescriptive permit condition for all those measures which are significant for a particular sector, as identified in the relevant guidance, or which have been the subject of cost / benefit consideration as part of the application or determination.

We will decide that a measure is key where it is fundamental to the prevention or minimisation of pollution in a particular sector. These key measures will include those which require significant investment or have to be confirmed at the design stage to avoid excessive cost, but in all cases will reflect the scale of the activity.

The following paragraphs describe the different ways in which the main control measures can be specified in the permit.

Where we can prescribe the key measures for every operator within a regime, sector or activity type, and we do not consider that allowance for site-specific differences is necessary or appropriate, then we will set the conditions as standard for that regime, sector or activity.

Where a key measure can be applied in different ways at an individual site, then this approach will not work. In this case the permit will require the operator to comply with the site-specific measures set out in part of the permit application. This may be done by reference to the relevant guidance or by a site-specific management plan such as an odour management plan. We will do this either by incorporating the relevant part of the application into the permit or by setting a site specific condition in the permit.

In each of the above cases, the operator will normally have to apply to vary the permit to make changes to these key measures (although provision may be made for minor changes by agreement). It is therefore in the interests of both operators and ourselves that the prescriptive conditions described above are only used where it is essential to specify those measures. This will give operators flexibility to operate their activities, so long as appropriate standards of environmental protection are met. We will therefore ensure that measures prescribed in the permit are kept to a minimum and contain no more detail than is necessary.

On some occasions, we may identify an issue that should be dealt with as a key measure for a particular site only once the site has started to operate. Where this occurs there are standard permit conditions that will allow us to require the operator to submit a management plan or a revision of an existing plan, for our approval and which will require it to operate in accordance with the approved plan.

Other measures

In addition to the key measures, there will be other important environmental protection measures that the operator should take. We will normally expect these to be summarised in the application and our determination will focus on any serious deficiencies we identify. The permit conditions we will apply to these measures will be outcome-based, allowing the operator flexibility, as long as the outcome is achieved.

Examples of outcome-based conditions include those requiring the operator to maintain, implement and review plans or management systems in order to achieve an objective such as accident prevention. We will not normally approve such plans (unless they relate to key measures – see above) in order to allow appropriate flexibility of operation. Other examples of outcome-based conditions include those that require operators to use appropriate measures to achieve an objective, such as preventing odour or noise annoyance, or to do what is practicable to prevent or minimise such annoyance.

Where a condition requires the operator to take appropriate measures to secure a particular objective, we will expect the operator to use those measures described in the relevant guidance which are appropriate for meeting the objective; they will not be set out in a site specific condition. The operator will have described the measures it proposes to take in its application and/or in a relevant management plan.

The operator will need to keep the measures it uses under review and will need to change them where, for example:

- standards or measures have changed as a result of a technical guidance note being revised;
- an environmental problem has arisen or the risk of such a problem has become too high.

Where changes are necessary, we will give the operator a reasonable period to make them. What is a reasonable period will depend on the significance of the issue for the environment, the operator and the need to secure the objectives that apply to the type of regulated facility. Where significant investment may be involved (or there is a significant dispute between ourselves and the operator as to what is required), we may vary the permit, taking account of regulation 20(4) for stand-alone water discharge activities, and if necessary the matter can be resolved on appeal.

2.4 The decision document

Our staff must record and explain the important features of the determination in the decision document. The decision document template provides suitable headings to record the important issues. Any significant impacts on people and the environment or departures from indicative standards, should be recorded. Our decisions on these issues should be explained, including the use of permit conditions to address the issue.

Where particular Directives or other legislative requirements (see below) raise significant issues, we should explain these in the decision document. Any consideration of an appropriate assessment under the Habitats Regulations would fall into this category.

The decision document template contains a checklist to record all the relevant decisions. Unless the issue is of particular importance for the site there is no need to provide an explanation of these decisions.

3. EUROPEAN DIRECTIVES

Our approach to permitting described above has been designed to deliver the environmental standards required by all the Directives implemented by the Regulations.

We have translated all the specific technical standards and requirements of the Directives into appropriate application form questions, permit conditions and relevant technical guidance.

We will deliver the general objectives and framework provisions of the Directives, through the permitting approach described above. How this works for specific Directives is described below, by way of example. All activities we regulate by environmental permits will be subject to one or more of these Directives.

Government guidance on specific Directive requirements is also available.^{3, 4, 5, 5.}

3.1 Integrated Pollution Prevention and Control (IPPC) Directive (2008/1/EC)

The IPPC general principles and other IPPC Directive considerations.

Article 3 of the IPPC Directive sets out general principles which include the requirements that all the appropriate preventive measures are taken against pollution, in particular through application of the best available techniques and that no significant pollution is caused. The general principles also require specific consideration of energy efficiency, waste hierarchy principles, waste disposal issues, accident prevention and securing site protection on closure.

If significant pollution would be caused, even after applying best available techniques (BAT, see below), we must address this under the general principles of Article 3. Stricter conditions or refusal may be needed. This is built into the general approach described above.

Other parts of the IPPC Directive require a consideration of the effects of raw materials, implications for soil and groundwater, monitoring, and waste management.

These considerations are not required to be based on BAT, but the general approach described in section 2 above will equally secure the proper consideration of these various additional issues. TGNs for IPPC installations and our H1 guidance have been designed to contain indicative standards and guidance for all relevant IPPC issues.

Best available techniques (BAT)

The IPPC Directive states that emission limit values (ELVs) **must** be included for polluting substances (in particular those defined in Annex III) that are likely to be emitted

³ See Defra website

⁴ Environmental Permitting Guidance, *The IPPC Directive, Part A(1) Installations and Part A(1) Mobile Plant*. ⁵ Environmental Permitting Guidance, *The Waste Framework Directive*.

⁵ Environmental Permitting Guidance, *The Groundwater Directive* (to be drafted)

in significant quantities, although the ELVs may be supplemented or replaced by equivalent parameters or technical measures where appropriate as explained below.

This requirement does not apply to emissions of carbon dioxide from those installations that are subject to the Greenhouse Gas Emissions Trading Regulations.

The ELVs must be **based on BAT**, “but shall take account of the technical characteristics of the particular installation..., its geographical location and the local environmental conditions”. We must bear in mind that the IPPC Directive requires BAT to be used to **prevent** or **minimise** emissions.

Where available the European BAT reference documents (BREFs) set out conclusions on what constitute BAT for the sector concerned and the emission levels associated with their use (BAT-AELs). We use these as indicative standards in our sector Technical Guidance Notes (TGNs). For the landfill sector where there is no BREF, operators must rely on the standards specified in the Landfill Directive (1999/31/EC), the landfill TGN and associated guidance notes.

The BREFs make it clear that BAT-AELs are not ELVs, but are to be used for reference when setting site-specific ELVs in individual permits. The BREFs explain that this is because there may be local, site specific factors (as outlined above) to take into account. It should be noted that the BAT-AELs quoted in the BREFs should have reference conditions and averaging frequencies associated with them (typically being expressed as an annual average), and where ELVs are set in permits with different reference conditions or monitoring frequencies (typically 4-hour periodic sample, hourly or daily limit for continuous emission monitoring) the numerical value of the ELV should take into account these differences and the normal variability of plant operation. The relationship between indicative standards, BAT-AELs and individual permits is explained further below.

If meeting a European environmental quality standard (EQS) requires a stricter ELV than indicated on the basis of BAT (or an overriding requirement to prevent certain emissions (e.g. hazardous substances to groundwater as defined in the Water Framework and Groundwater Directives), the regulator must impose that ELV or consider refusing the permit altogether. This is addressed in our guidance on environmental risk assessment and in the Government guidance on Part A installations.

Where appropriate, the ELVs may be supplemented or replaced by “equivalent parameters or technical measures”. It may often be appropriate, and indeed more effective, to use conditions relating to process control and possibly restrictions on inputs etc as a substitute for, or to complement, numerical ELVs.

Other specific provisions surrounding the setting of ELVs are:

- ELVs may be set for groups of pollutants rather than for individual pollutants;
- ELVs shall normally apply at the point at which emissions leave the installation, any dilution being disregarded; and
- the effect of wastewater treatment plant may be taken into account when determining ELVs for indirect releases to water provided that an equivalent level of protection of the environment is guaranteed and higher levels of pollution are not thereby caused.

Our general approach to permitting described above is designed to secure the proper application of BAT at IPPC installations. The approach reflects a consideration of the costs and benefits of alternative options and a consideration of indicative technical standards set in guidance.

Setting ELVs in permits for installations

Installations will normally be expected to comply with indicative standards as a minimum.

The relevant BAT-AEL should therefore normally be used as the reference point for setting the ELV. However, we must remember that the Directive requires emissions to be minimised, and site-specific factors must also be considered, so there are circumstances where basing an ELV on the BAT-AEL would not be appropriate. Two examples of these are as follows.

The first example is where actual performance based on BAT for the installation in question is already, or has the potential to be better than the BAT-AEL; or where there are exceptional, site-specific reasons why the BAT-AEL provides an insufficient level of environmental protection (whether because of local factors or where an EQS would be exceeded). In this case, the ELV in the permit would be stricter than the BAT-AEL.

The second example is where the operator provides a transparent and balanced, sitespecific justification for not achieving compliance with the indicative standard. In this case, provided that a high level of environmental protection is still being achieved, we would set an ELV that is less strict than the BAT-AEL, and normally accompany this with some additional requirements, depending on the reasons why the installation cannot comply, for example:

- If the installation cannot currently comply with indicative standards but will be able to do so in the foreseeable future, and is not causing significant pollution, it will be allowed to operate but required to upgrade towards indicative standards within a reasonable timescale.
- If indicative standards are not met, and significant upgrading is not proposed, based on the limited remaining life of the plant, we would normally incorporate a time limit into permit conditions to ensure that the installation does close as planned. Should

the operator subsequently decide to continue operating beyond that point, or to reopen the plant at a later date, we will require upgrading to take place before the plant is allowed to operate further.

- If no upgrading is proposed, and the justification is that the environmental benefit from upgrading is marginal, and significantly outweighed by the costs, we would require this to be reviewed periodically in case the circumstances change. For instance, if major refurbishment is carried out, that may present a more cost-effective opportunity to align performance with the indicative standards (or even go beyond them).

If there is no BAT-AEL in the BREF or TGN, our approach is essentially the same: the operator should base its proposals on the techniques, usually described in the BREF or TGN, to prevent or minimise emissions, and propose an ELV on that basis. The operator must use a cost and benefit appraisal to justify the site-specific reasons why any proposed alternative measures or deviation from the indicative measures represents BAT for its installation.

We intend to produce further technical guidance for staff to use when setting ELVs. In summary ELVs should:

- be set to limit emissions to a level consistent with the BAT-AEL unless there are justified, site specific reasons);
- be based on actual performance, particularly where that is or should be better than the indicative standard; and
- be set with defined monitoring parameters to assess compliance with the ELV.

Our general approach to permitting described above is designed to secure the proper application of BAT at IPPC installations. The approach embodies a consideration of the costs and benefits of alternative options and a consideration of indicative technical standards set in guidance. In the case of IPPC installations, the relevant TGNs are based on the applicable BREF..

Environmental Impact Assessment (EIA) Directive information

The IPPC Directive requires a consideration of “any relevant information obtained, or conclusion arrived at”, as a result of an environmental impact assessment carried out in relation to an installation under the EIA Directive. This extends to any EIA, no matter when carried out (so although relatively old EIAs may be of less relevance to the permit determination, they must still be considered). However, not all applications we receive will have been subject to EIA.

Where EIA applies it will almost always form part of the planning process. As such, it may or may not be concluded at the time we receive a relevant application. Our

application form requires the operator to supply us with copies of any environmental statement, planning permission and relevant committee report describing the EIA decision, which are available at that time. We should then take account of that information, and update it, as appropriate, during our permit determination.

In most cases, it is unlikely that the EIA information will add significantly to the content of our own permit application and in particular the environmental risk assessment conducted in accordance with our guidance, as these are likely to be more detailed. But we are required to consider the relevant EIA information that is available at the time of our determination.

Note that the requirement to consider EIA information is entirely separate from the claim which is sometimes made, that an EIA should be carried out as part of the IPPC determination itself. Our position on this is that the EIA Directive has been properly implemented through the planning system and it does not require any implementation during the pollution control (environmental permit) determination. Legal advice should be sought where the issue is raised.

3.2 The Waste Framework Directive (2008/98/EC)

The relevant objectives

The main requirements of the Waste Framework Directive are the “relevant objectives” of article 13. These apply to waste management (which includes both waste disposal and recovery operations and to all wastes including hazardous wastes).

Article 13 provides that waste management should be carried out:

“without endangering human health and without harming the environment and in particular without:

- (i) risk to water, air, soil, plants or animals; or*
- (ii) causing nuisance through noise or odours; or*
- (iii) adversely affecting the countryside or places of special interest;*

We consider that the general approach described in section 2 above will ensure the proper consideration of these issues through environmental permitting.

Waste hierarchy considerations

The waste hierarchy set out in Article 4 must be applied to the generation of waste by a regulated activity. In addition, waste generated must be treated in accordance with the waste hierarchy in Article 4. Our TGN “How to Comply” contains guidance on how we expect operators to demonstrate they have discharged this duty.

Ban on mixing hazardous waste

Article 18 provides that permits may allow the mixing of hazardous waste but only if Article 13 (see above) is complied with, there is no increase in adverse impact on human health and the environment and the mixing conforms to BAT. Where we allow the mixing of hazardous waste a specific permit condition will be applied to secure this.

Other requirements

Various other requirements apply, such as in relation to record keeping (Article 35(1)) and the need for specific conditions relating to matters such as the types and quantities of waste.

See also the Government Guidance⁵.

3.3 The Water Framework Directive (2000/60/EC)

The Water Framework Directive provides an overarching framework to coordinate water management. It integrates the requirements of a number of existing Directives and introduces new ecological objectives. It does not seek to change or overrule the objectives set out in other Directives: equivalent measures are put in place to maintain the level of protection provided in any Directives that it repeals⁶

The Directive establishes a demanding water classification system, in order to identify pressures that may lead to deterioration in ecological status of water bodies. The Directive requires all water bodies to aim to achieve good ecological status by 2015.⁷

River Basin Management Plans (RBMPs) detail the measures that must be taken to improve or maintain the ecological status of water bodies. Some of these measures can be achieved by controlling environmental emissions. It is these measures that are delivered through the Environmental Permitting Regulations, by means of environmental permits for water discharge activities.

There is separate guidance to Natural Resources Wales on the delivery of Water Framework Directive obligations⁸.

⁶ The Freshwater Fish Directive, the Shellfish Directive and the Dangerous Substances Directives are to be repealed in 2013

⁷ 2015 is the preferred date. In practice the WFD acknowledges that this may not always be possible, so there are derogations available that could result in some objectives being fulfilled as late as 2027, and even later in some cases.

⁸ Defra and Welsh Assembly Government, River Basin Planning Guidance Volume 1 (August 2006) and Volume 2 (August 2008)

3.4 The Groundwater Daughter Directive (2006/118/EC)

General Principles

Articles 1 and 6 of the Groundwater Daughter Directive describe the need for measures to protect groundwater in order to achieve the objectives of Article 4.1(b) of the Water Framework Directive. Along with additional requirements brought forward from earlier Groundwater Regulations and the previous Groundwater directive (80/68/EEC – which remains in force until December 2013) these requirements are incorporated into the Environmental Permitting Regulations 2010. They are set out in detail in Government and EU guidance⁹

All necessary measures must be put in place to prevent inputs into groundwater of any **hazardous substances**.

All necessary measures should also be put in place to limit the input of **non-hazardous pollutants** to groundwater to prevent pollution, deterioration in the chemical status of groundwater bodies or avoid significant and sustained upward trends in the concentrations of pollutants. These measures shall take account of established best practise including BEP and BAT.

A number of exclusions apply to the “prevent or limit” requirements noted above, including a *de minimis* provision, accidents or exceptional circumstances of natural cause, where there is net damage to the environment or human health and where there are disproportionate costs to remove existing (historic) ground contamination.

3.5 The Basic Safety Standards Directive (96/29/Euratom)

The Basic Safety Standards Directive incorporates the radiological protection principles of justification, optimisation and limitation.

The Directive provides that all new classes or types of practice resulting in exposure to ionising radiation are to be justified before being adopted. A practice will be justified if it produces sufficient benefit to the exposed individuals, or to society, to offset the radiation detriment it causes. Decisions on justification will be taken by Government, and practices must not be permitted unless they are justified.

In relation to the principle of optimisation, all exposures to radiation of any member of the public and of the population as a whole are to be kept as low as reasonably achievable, taking into account economic and social factors.

⁹ Insert ref to Defra/WAG guidance to the EA ;

CIS Guidance Document 17, 2007 – *Guidance on preventing or limiting direct and indirect inputs in the context of the Groundwater directive 2006/118/EC*.

The Directive also sets out dose limits for the sum of the doses resulting from the exposure of any member of the public to ionising radiation (subject to certain exceptions).

3.6 The High-Activity Sealed Radioactive Sources and Orphan Sources Directive (2003/122/Euratom)

The aim of the Directive is to prevent the exposure of workers and the public to ionising radiation arising from the inadequate control of high activity sealed radioactive sources (HASS) and orphan sources. The Directive sets out a number of requirements which need to be in place before a permit can be issued for HASS including:

- adequate arrangements for the safe management of sources when they become disused sources; and
- adequate financial provision for the safe management of sources when they become disused sources.

Obligations are also imposed on holders of HASS in relation to staff competency and training, maintenance, incident prevention and response, record keeping, identification, marking and transfer of HASS.

3.7 Other European Directives

Other Directives that are implemented through the Regulations, mainly contain either specific additional prescriptive requirements or general provisions about ensuring protection of the environment, similar to the general provisions of the relevant Framework Directives.

The approach described in section 2 is designed to secure all these requirements. Any specific extra requirements are addressed in the relevant guidance and standard conditions.

Additional guidance on these Directives can also be found³, as follows

In Government Guidance:

- **Core Environmental Permitting guidance**
- **End of Life Vehicles Directive**
- **Integrated Pollution Prevention and Control (IPPC) Directive, Part A(1)**
(including the Titanium Dioxide Directive)
- **Large Combustion Plants Directive**
- **Solvent Emissions Directive**
- **Waste Electrical and Electronic Equipment Directive**

- **Waste Framework Directive**
- **Waste Incineration Directive**
- **Landfill Directive**
- Mining Waste Directive

In our Regulatory Guidance Series on specific Directives:

- Understanding the Landfill Directive (LFD 1).

4 OTHER LEGISLATIVE REQUIREMENTS

There are additional legislative requirements which also apply to environmental permitting. Unless otherwise indicated below, we consider that the general approach described in section 2, will deliver these requirements.

4.1 Requirements relating to Air Quality

Section 81 EA 1995 - Air Quality Strategy

We are required to have regard to the Air Quality Strategy for England, Scotland, Wales and Northern Ireland, in exercising our functions under the Regulations. However, air quality issues should have been fully dealt with in setting permit conditions as described above. Regard may be had to our guidance on our role in the regulation of industrial processes and sites that handle waste materials, with respect to air quality matters: “Natural Resources Wales – regulating to improve air quality”.

The Persistent Organic Pollutants Regulations 2007

We are required, when considering an application for an environmental permit or for a significant modification to a permit for an **installation**, to have regard to Article 6(3) of the Persistent Organic Pollutants Regulation (Regulation (EC) No. 850/2004) (the EC POPs Regulation). Article 6(3) requires that, where an installation releases a chemical listed in Annex III to the EC POPs Regulation, we must give priority consideration to alternative processes, techniques or practices that have similar usefulness but which avoid the formation and release of such listed chemicals. This requirement is stated to be “without prejudice” to the IPPC Directive, so the consideration of Annex III chemicals (PCDD/PCDF, HCB, PCB and PAHs) in the context of requiring BAT to minimise their emission should generally deliver compliance with the EC POPs Regulation: but care must be taken – where relevant – to ensure that this is done and our consideration recorded.

4.2 Requirements relating to Water Quality

The Bathing Water Regulations 2008

These Regulations implement the Bathing Water Directive (2006/7/EC). The requirements are phased in across the period up to March 2015. They will require us to exercise our environmental permitting functions to secure the aims of the Directive in general and also specifically with a view to ensuring all bathing waters are classified as sufficient by 2015 and an increased number of bathing waters are classified as good or excellent.

The Surface Waters (Fishlife) (Classification) Regulations 1997

These Regulations implement the Freshwater Fish Directive [2006/44/EC]. Where an environmental permit is granted for discharges to waters designated under the Directive, the regulator must set permit conditions which will result in the mandatory standards for the quality of the waters, known as the Environmental Quality Standards (EQSs), being met and guideline EQSs being respected. These values are set out in the Regulations. The EQSs provide limits on the permissible level of certain substances in the designated waters; the limit depends on whether the water supports salmonid or cyprinid fish.

The Surface Waters (Shellfish) (Classification) Regulations 1997

These Regulations implement the Shellfish Waters Directive [2006/113/EC]. Where an environmental permit is granted for discharges to waters designated under the Directive, the regulator must ensure that the permit contains conditions such that compliance with the permit conditions results in the mandatory EQSs being met and guideline EQSs observed. These values are set out in the Regulations that form part of the UK's transposition of the Shellfish Waters Directive. For most of the substances covered by the EQSs, the regulator will set numerical limits in permits. Microbiological quality will be controlled through specifying treatment levels that must be achieved prior to the discharge entering the designated waters.

The Urban Wastewater Treatment Directive (91/271/EEC)

The Urban Wastewater Treatment Directive aims to protect the environment from pollution of sewage discharges. It sets treatment levels based on the size of the discharge and sensitivity of the receiving water. The regulator must exercise its powers to ensure compliance with the treatment standards prescribed by the Directive and must ensure that pollution from storm water is limited.

Marine and Coastal Access Act 2009

Section 58 requires that any authorisation or enforcement decision taken by a public authority must be in accordance with the appropriate marine policy documents unless relevant considerations indicate otherwise. Any environmental permitting decision that affects marine waters therefore must be made in accordance with the marine policy statement and marine plan for the area covered by the permit

The UK Marine Policy Statement was published in March 2011 for all UK waters. Marine Plans are being developed The first Marine Plans in England will be for the East Inshore and Offshore marine areas - an area that extends from Flamborough Head, East Yorkshire, to Felixstowe, Suffolk and from our coast to the limit of our territorial waters. The MMO will use its experience of marine

planning in the first two areas to deliver the full programme of 10 Marine Plans for England by April 2022.

In Wales the intention is to have national marine plans for both the onshore and offshore by 2012/13.

4.3 Requirements relating to Conservation

The Conservation of Habitats and Species Regulations 2010

An application for an environmental permit will be considered to be a proposal for a new plan or project for the purposes of the Habitats Regulations. We can include conditions in a permit to avoid adverse effects on any European site, over and above those to ensure compliance with the Regulations. Should the facility still threaten an unacceptable impact on such a site, the application should be refused.

The following procedural steps will therefore need to be addressed:

- Assess whether the proposals described in the application would have “*a likely significant effect on a European Site in Great Britain*” (either alone or in combination with other plans or projects). Our guidance (*Applying the Habitats Regulations to new Agency Authorisations and Activities*) should be considered. This indicates that it is unlikely a regulated facility would fall within this category unless it is within certain specified distances of a European site.
- If the proposal is assessed as being likely to have a significant effect, there must be “*an appropriate assessment of the implications of the plan or project for the European site, in view of that site’s conservation objectives*”. (See our guidance for advice on undertaking such an assessment).
- We cannot grant the permit unless it is considered that, in the light of the assessment and taking into account any additional conditions or restrictions which it is possible to impose, the installation will “*not adversely affect the integrity of the European site*” (Again, further advice on this is contained in our guidance¹⁰).

Countryside and Rights of Way Act 2000 (CROW 2000)

Section 85 duty concerning Areas of Outstanding Natural Beauty (AONBs)

¹⁰ See the *Habitats Directive Handbook*.

In deciding whether to grant a permit and/or what conditions to impose, regard should be had to “*the purpose of conserving and enhancing the natural beauty of the Area of Outstanding Natural Beauty*”.

Wildlife and Countryside Act 1981 (WCA 81)

Section 28G WCA 81 duty concerning SSSIs

The CROW Act 2000 amends the WCA 1981 by way of adding a new section 28G duty in relation to SSSIs. In deciding whether to grant a permit and/or what conditions to impose in any case where the regulated facility “*is likely to affect the flora, fauna, or geographical or physiographical features by reason of which a site of Special Scientific Interest is of special interest*”,

We must take:

“reasonable steps, consistent with the proper exercise of the [Natural Resources Wales’s] functions, to further the conservation and enhancement of the flora, fauna or physiographical features by reason of which the site is of special scientific interest”.

Section 28I WCA 81 duty to consult

If the facility is considered likely to damage any of the flora, fauna or geographical or physiographical features by reason of which an SSSI is of special interest and NE/CCW is therefore consulted under this provision, a statement should be recorded to confirm that the consultation procedures of this section have been followed and how NE/CCW's advice has been taken into account.

If a notice under s 28I(6) has been served on NE/CCW by us (i.e. a notice advising that we propose not to follow NE/CCW's advice and explaining why), this should be annexed to the decision document.

Environment Act 1995 (EA 95)

Section 7 EA 1995 - pursuit of conservation and other objectives

Reference should be made to the duties imposed on us under s 7(1)(b) and (c)(i)–(iii) EA 1995, to have regard to a range of particular conservation issues, in exercising its pollution control functions (including under environmental permitting).

7(1)(b) - to have regard to the desirability of conserving and enhancing natural beauty and of conserving flora, fauna and geological or physiographical features of special interest;

7(1)(c)(i) - to have regard to the desirability of protecting and conserving buildings, sites and objects of archaeological, architectural, engineering or historic interest;

7(1)(c)(ii) - to take into account any effect which the proposals would have on the beauty or amenity of any rural or urban area or on any such flora, fauna, features, buildings, sites or objects;

7(1)(c)(iii) - to have regard to any effect which the proposals would have on the economic and social well being of local communities in rural areas.

Note that section 7(c)(i)-(iii) is not limited to conservation matters alone, as we must also have regard for the economic and social well being of rural communities. We do not have any set screening criteria for assessing whether installations might impact on cultural heritage sites. GIS should have been used to identify any such sites close to the application site (e.g. scheduled ancient monuments, listed buildings etc.). If these are within close proximity, the applicant should have been encouraged to seek the advice of English Heritage or Cadw (the Welsh Government's historic environment service) in Wales to assess any likely impacts.

Note also that there are further matters set out in section 7(2) for consideration by us, relating to the desirability of maintaining public access to areas of natural interest/beauty or buildings /objects of interest. Specific advice should be sought if there is any indication that these duties may be relevant in respect of a particular application.

Section 8(3) – Notifications

Should any notification be received from NE or CCW regarding SSSIs, this and our response should be recorded.

Natural Environment and Rural Communities Act 2006

Section 40 duty concerning the conservation of biodiversity.

In deciding whether to grant a permit and / or what conditions to impose, regard should be had to “*the purpose of conserving biodiversity*”. Biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat.

4.4 General Requirements

Section 4 Environment Act 1995 (EA 1995) - Pursuit of Sustainable development

Consideration should be given to whether there are any additional conditions which should be imposed in pursuance of the requirements of s 4 EA 1995, namely “*to make the contribution towards achieving sustainable development*”, which is described in the statutory guidance “Natural Resources Wales’s “Objectives and Contribution to Sustainable Development: Statutory Guidance issued to the Agency by the Secretary of State” in December 2002. This is stated to:

“provide guidance to the Agency on such matters as the formulation of approaches that the Agency should take to its work, decisions about priorities for the Agency and the allocation of resources. It is not directly applicable to individual regulatory decisions of the Agency”.

There is also equivalent guidance issued by the Welsh Assembly Government¹¹. Note that if consideration is being given to the imposition of requirements solely for the purposes of s 4 EA 1995, it will be necessary to be satisfied that such requirements do not undermine or conflict with the other requirements of the Regulations (because other, specific, statutory duties imposed on us take precedence over our duty under s 4 EA 1995), and that any such proposed requirements satisfy the duty to consider costs and benefits as set out in s 39 EA 1995 and described in the statutory guidance.

Human Rights Act 1998 (HRA 1998)

The HRA 1998 applies to our environmental licensing decisions, including the grant of a permit, taken after 2 October 2000. General advice on the Act and its implications for us has been published by the Department for Constitutional Affairs. Consideration must now be given to whether a decision to grant (or not to grant) a permit, or to impose (or not to impose) particular conditions, is incompatible with someone's Convention rights.

The principal Convention rights that might be affected by a decision of ours are the right to life (Article 2), the right to a fair trial (Article 6), the right to respect for private and family life (Article 8) and the right to protection of property (Article 1 First Protocol). It is important to remember that the operator's Convention rights might be affected, as well as those of objectors to the grant of a permit.

Certain Convention rights are absolute. Others are limited in explicit and finite circumstances. Others are qualified. Interference with a qualified right may be justified, provided that it is in accordance with the law, serves one of the aims set out in the

¹¹ *Natural Resources Wales's Objectives and Contribution to Sustainable Development in Wales: Statutory Guidance from the National Assembly for Wales*, see NRW website.

qualification to the relevant Article, and is “*necessary*” in a democratic society. Any interference with individual rights must be proportionate to the aim pursued. It is recognised that public authorities, such as Natural Resources Wales, often have to strike a balance between the general social and economic needs of the community and the specific interests of individuals.

Under the HRA 1998, we must consider whether our decision in respect of a permit under the Regulations will result in, or (N.B.) *will fail to prevent*, any potential or actual breach of a Convention right (e.g. the operation of the installation would affect the health of local residents). If we do identify such a breach we must then consider whether we have discretion to act otherwise under UK law, as its primary obligation must be to fulfil its statutory duty. Where we do have discretion and the Convention right at issue is not absolute, we must then consider whether our decision is justified. For example, if representations have been made by members of the public on matters subject to regulation under the permit which might affect health, amenity or house values, these should be duly considered. Such matters should, however, be weighed against a proper assessment of any benefits of the grant of a permit in terms of the “*economic well-being of the country*” and the rights or freedoms of the operator.

In most situations, a properly made environmental permit determination will preclude any potential breach of Convention rights. Where there is any doubt, legal advice should be sought.

Legislative and Regulatory Reform Act 2006

Section 21 requires any person exercising a regulatory function (defined to include environmental permitting) must have regard to certain specified principles, subject to any other requirement affecting the exercise of those functions. This means that the duty will only apply to environmental permitting, to the extent that it does not affect any other requirement of the EP Regulations. The principles are that:

- regulatory activities should be carried out in a way which is transparent, accountable, proportionate and consistent; and
- regulatory activity should be targeted only at cases in which action is needed.

The Local Democracy, Economic Development and Construction Act 2009

Section 23 of the Act requires us where we consider it appropriate to take such steps as we consider appropriate to secure the involvement of interested persons in the exercise of our functions by providing them with information, consulting them or involving them in any other way. Section 24 requires us to have regard to any Secretary of State guidance as to how we should do that.

Our public consultation duties are set out in the Regulations, and in our statutory Public Participation Statement, which implement the requirements of the Public Participation Directive. We also have additional guidance on public participation at sites of high public interest (Agency Guidance Note RGS6) and the Agency's Building Trust with Communities toolkit. We consider that these requirements, statements, guidance and tools, together ensure that our duties under this Act are secured in relation to environmental permitting.

**APPLICATION FOR AN ENVIRONMENTAL PERMIT
UNDER THE ENVIRONMENTAL PERMITTING
(ENGLAND AND WALES) REGULATIONS 2016
(AS AMENDED)**

FIRE PREVENTION PLAN



**MINERS PARK, LLAY INDUSTRIAL ESTATE,
LLAY, WREXHAM**

**IN THE EVENT OF A FIRE, PLEASE CONTACT
07799 141741 OR 07768 585262 IMMEDIATELY**

**ECL Ref: PLAT.01.02/FPP
Version: Issue 3 (DRAFT)
May 2024**

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ACRONYMS / TERMS USED IN THIS REPORT

AONB	Area of Outstanding Natural Beauty
BGS	British Geological Survey
CCTV	Closed Circuit Television
COSHH	Control of Substances Hazardous to Health
DSEAR	Dangerous Substances and Explosive Atmospheres Regulations 2002
EA	Environment Agency
ECL	Environmental Compliance Limited
EMS	Environmental Management System
EP Regulations	Environmental Permitting (England and Wales) Regulation 2016 as amended
EP	Environmental Permit
EPR	Enterprise Resource Programme Project
FPP	Fire Prevention Plan
FRA	Fire Risk Assessment
FRS	Fire Rescue Service
FWM	Forward Waste Management Limited
GCN	Great Crested Newts
IBC	Intermediate Bulk Container
LNR	Local Nature Reserve
MAGIC	Multi-Agency Geographical Information for the Countryside
MOT	Ministry of Transport
NGR	National Grid Reference
NNR	National Nature Reserve
NRW	Natural Resources Wales
NVZ	Nitrate Vulnerable Zone
OS	Ordnance Survey
PAT	Portable Appliance Testing
PPMR	Planned Preventative Maintenance Regime
RFID	Radio Frequency Identification
SPZ	Source Protection Zone
SSSI	Sites of Special Scientific Interest
The Facility	Platts Agriculture Limited, Miners Park Waste Treatment Facility

DOCUMENT CONTROL

Date	Version	Section	Description	Prepared By	Approved By
Jan 22	Issue 1	All	All	ECL	CW & BMK
Jun 23	Issue 2	1.1.	Overview of the Fire Prevention Plan	ECL	CW & AF
		2.1	Site Location		
		2.2.	Sensitive Receptors		
		3.2	Waste Acceptance		
		3.4	Waste Tracking System and Maximum Storage Times		
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		5	Preventative Measures		
		6.5	Fire Water Supply		
		6.6	Firewater Containment		
		App IV	Site Information and Key Contacts List	ECL	CW & AF
May 24	Issue 3	1.1.	Overview of the Fire Prevention Plan		
		3.3.	Waste Handling, Storage, Processing and Dispatch		
		3.4	Waste Tracking System and Maximum Storage Times		
		3.5	Quantities and Storage Arrangements		
		3.6.	Fire Prevention Plan – Quarantine Area		
		5.1.	Prevention Measures (Table 4)		
		6.5	Fire Water Supply		
		6.6	Firewater Containment		

1. INTRODUCTION

1.1. Overview of the Fire Prevention Plan

- 1.1.1. Environmental Compliance Limited (“ECL”) has been appointed by Platts Agriculture Limited (“Platts”) to produce a Fire Prevention Plan (“FPP”) to form part of the Environmental Permit (“EP”) application to undertake a bespoke waste operation at their site, hereafter referred to as “the Facility” located on Miners Park, Llay Industrial Estate, Llay, Wrexham, LL12 0PJ.
- 1.1.2. Platts is proposing to operate a waste wood processing facility accepting 60,000 tonnes per annum of non-hazardous waste wood.
- 1.1.3. As per Natural Resources Wales’ (“NRW”) Fire Prevention and Mitigation Plan guidance¹, a FPP is a requirement of the Permit application as Platts propose to store wood and wood composites which are defined by NRW as combustible waste materials.
- 1.1.4. The FPP has been updated to address NRW’s Schedule 5 Notice II (dated 09/11/2022). However, it must be noted that the FPP guidance is applicable only to combustible waste. Therefore, the FPP guidance is applicable only to the storage of incoming wood waste at the Facility.
- 1.1.5. However, to demonstrate Platts’ commitment to robust environmental protection, the processed material is included within FPP document despite the material being considered to meet end-of-waste and therefore, it must be emphasised that it is not deemed to be formally subject to the FPP guidance. **If end-of-waste is granted for the processed material, the FPP will be revised to remove FPP controls on the processed material and the amended FPP will be submitted to NRW for approval.**
- 1.1.6. This FPP document follows NRW’s FPP guidance and details the required mitigation and management methods to prevent a fire of combustible materials stored at the Facility. This FPP identifies measures to be employed to reduce the likelihood of fires at the Facility. In addition, the plan identifies measures to be employed in the event of a fire in order to minimise the pollution caused to the environment or harm to human health.
- 1.1.7. Under current fire safety legislation², a responsible person must carry out, or appoint a competent person to carry out, a suitable and sufficient assessment of the risks of fire to employees and others who may be affected by the site. A Fire Risk Assessment (“FRA”) will be carried out on an annual basis or in the event of a change to operations on site. Any findings and recommendations identified during the FRA will be included in the FPP during the scheduled FPP reviews.

¹ NRW’s ‘Fire Prevention and Mitigation Plan Guidance – Waste Management’, Version 2.0, Dated August 2017. Accessed March 2023.

² Regulatory Reform (Fire Safety) Order 2005, available at: <http://www.legislation.gov.uk/ukxi/2005/1541/contents/made> and associated guidance note available at: <https://www.gov.uk/government/publications/regulatory-reform-fire-safety-order-2005-guidance-note-enforcement>, accessed March 2023.

1.2. The Applicant

- 1.2.1. Platts Agriculture Limited, formerly named R.A. and C.E Platt Limited, formed in 1973 and is a market leading UK manufacturer and supplier of quality animal bedding.

2. THE SITE

2.1. Site Location

- 2.1.1. The Facility is located on Miners Road and within Llay Industrial Estate which consists of industrial and commercial units surrounded predominately by rural land use. The Facility is centred on Ordnance Survey (“OS”) National Grid Reference (“NGR”) 332077 356370. The Facility will occupy an area of approximately 1.56Ha.
- 2.1.2. The exact location of the Facility and the proposed Environmental Permit Boundary (outlined in green) is indicated on the Site Location Plan (Drawing PLAT.01.02-01), which is contained in Appendix I.
- 2.1.3. Access to the Facility is via Miners Park leading off Miners Road and Davy Way. Miners Road and Davy Way connect to B5373 which links to the A483 main road network. The wider site setting and road network are illustrated on the Site Location Plan (Drawing PLAT.01.02-01).
- 2.1.4. The closest Fire Station is North Wales Fire and Rescue Services Ambulance and Fire Services Resource Centre, which is located on Croesnewydd Road, Wrexham, LI13 7YU. The Fire Station is approximately 6km south of the Environmental Permit boundary with the site access road wide enough to accommodate fire engines and no height restrictions in place to enter the site.
- 2.1.5. The Facility benefits from a perimeter security fence with barbed wire, lockable entrance gates, security lighting and intruder alarm system. The Facility has planning permission for 24/7 operation enabling Platts to meet peak demand when needed. For normal operations, the Facility will be manned 24 hours Monday to Friday and 6am to 6pm Saturday and Sunday. All access doors are locked out of working hours and only a limited number of employees possess access keys in order to restrict unauthorised access into the Facility. The Facility is covered by closed circuit television (“CCTV”) which is monitored by senior management. Key members of staff are also on call to attend site out of hours if required.

2.2. Sensitive Receptors

- 2.2.1. A summary of the immediate environmental site setting is provided in Table 1 below and the potential sensitive receptors within a 1km radius of the proposed Environmental Permit boundary are shown on the Sensitive Receptors Plan (Drawing Reference PLAT.01.02-03.), which is provided in Appendix I.

Table 1: Summary of Surrounding Land Uses

Boundary	Description
North	Commercial/industrial units and farmland
East	Commercial/industrial units
South	Commercial/industrial units and farmland
West	Rural land use/farmland

- 2.2.2. It is noted that adjacent to the proposed Facility boundary lies a Great Crested Newt (“GCN”) habitat area developed by Platts as part of a planning application dating back to 2001. The habitat area comprises a designated 10m wide landscaped strip adjoining open countryside and is illustrated in the Sensitive Receptors Plan (Drawing Reference PLAT.01.02-03). The potential impact of the Facility on the local Great Crested Newt population has been considered in this application submission.
- 2.2.3. A review of the area using the Multi-Agency Governmental Information for the Countryside (“MAGIC”) mapping tool³ and Lle Geo Portal for Wales⁴ indicates that Llay Bog is located within 1km of the Facility’s EP boundary and is designated as a Site of Special Scientific Interest (“SSSI”). Alyn Waters Country Park is also located within 1km of the EP boundary and is designated a Local Nature Reserve (“LNR”).
- 2.2.4. The Ancient and Semi Natural Woodlands located within 1km of the EP boundary are listed in Table 2 below.

Table 2: Ancient and Semi Natural Woodlands within 1km of the Environmental Permit Boundary

Description	Centre Point		Nearest Point	Direction
	Easting	Northing	Distance from EP boundary (km)	
Ancient Semi Natural Woodland	331476	356814	0.64	NW
Ancient Semi Natural Woodland	331249	356358	0.67	W
Ancient Semi Natural Woodland	331646	355183	0.71	SW
Llay Bog	332181	355406	0.83	S
Ancient Semi Natural Woodland	331194	355946	0.84	SW
Restored Ancient Woodland	331196	355950	0.90	SW
Restored Ancient Woodland	331153	357007	0.98	NW

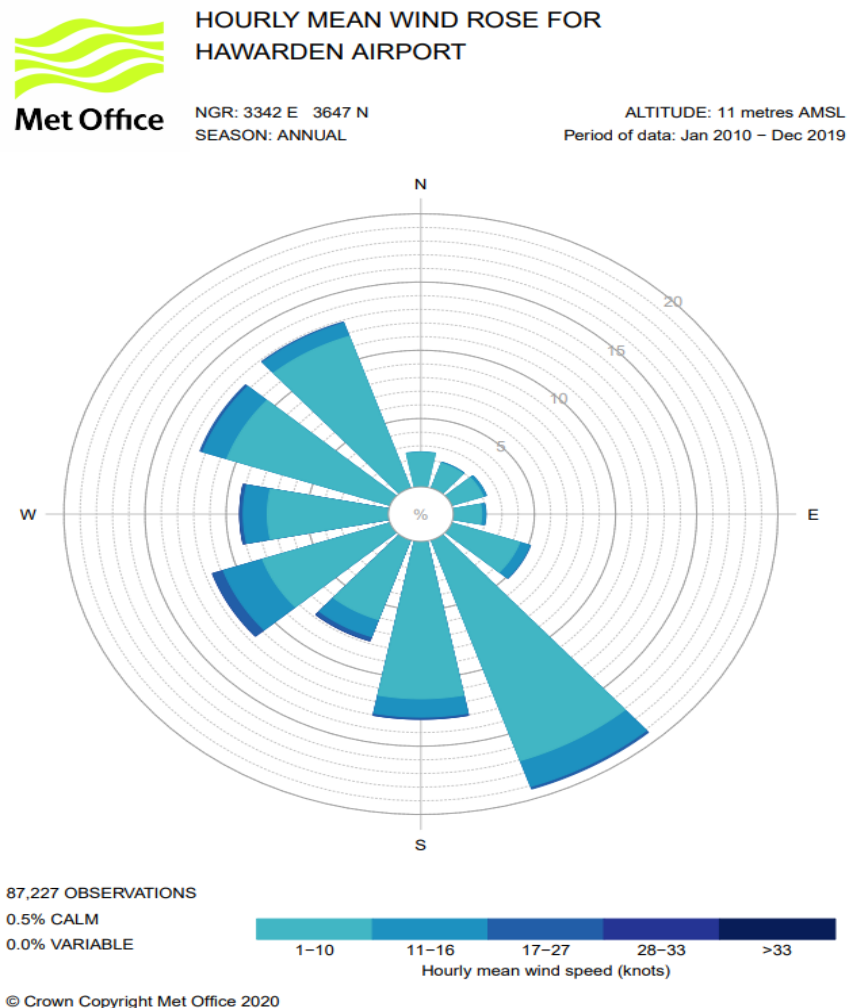
- 2.2.5. A Nitrate Vulnerable Zone (“NVZ”) is located 0.61km west of the proposed EP boundary.

³ Department for Environment, Food and Rural Affairs (“DEFRA”) MAGIC Online Mapping Tool, available at: <https://magic.defra.gov.uk/magicmap.aspx>, accessed April 2021.

⁴ Lle Geo-Portal for Wales Mapping Tool, available at: <https://lle.gov.wales/catalogue?t=1&lang=en>, accessed April 2021.

- 2.2.6. Searches conducted on the Lle Geo Portal for Wales indicate that none of the following sensitive land uses are located within 1km of the EP Boundary:
- National Nature Reserves;
 - Areas of Outstanding Natural Beauty;
 - Source Protection Zones; or
 - National Parks.
- 2.2.7. In addition to the searches conducted using the Lle Geo Portal for Wales, an Ecological Appraisal (Preliminary Desktop Ecological Appraisal, Issue 1) has been undertaken. The Appraisal found no statutory designated sites for nature conservation, local wildlife sites or ancient woodland sites within 500m of the site boundary. Notable species were identified including great crested newts and other amphibians between 250m and 500m from the site boundary, however, the Appraisal concludes that the activities carried out at the Facility are not anticipated to result in any direct adverse impacts on the great crested newts or any other protected or notable species. Measures to prevent firewater entering the GCN designated habitat area (shown on the drawings in Appendix I) are detailed in Section 6.6 of this FPP.
- 2.2.8. A Wind-Rose showing the local meteorological conditions is shown in Figure 1. The information is based on annual historical data from the Hawarden Airport Meteorological Station and demonstrates a South Easterly prevailing wind direction.

Figure 1: Wind-Rose of the Local Meteorological Conditions



2.3. Geology

- 2.3.1. The British Geological Survey (“BGS”)⁵ records the underlying superficial geology as Till, Devensian formed up to 2 million years ago in the Quaternary Period. These sedimentary deposits are glaciogenic in origin.
- 2.3.2. The bedrock is recorded to be the Salop Formation – mudstone, sandstone and conglomerate. This sedimentary bedrock is fluvial in origin and formed approximately 272 to 310 million years ago in the Permian and Carboniferous Periods.

2.4. Hydrogeology and Surface Water

- 2.4.1. There are a number of small ponds located in the surrounding area. However, the nearest major waterbody is the Alyn River located approximately 0.68km west of the proposed EP boundary.
- 2.4.2. The bedrock geology is reported to be a ‘Secondary A’ Aquifer, defined by the Environment Agency (“EA”) as permeable layers capable of supporting water supplies at a local rather than strategic scale and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classed as minor aquifers.
- 2.4.3. Superficial deposits underlying the Facility are designated as undifferentiated secondary aquifer. This designation is assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type. The superficial aquifer is reported to be of low groundwater vulnerability.
- 2.4.4. According to the Lle Geo-Portal for Wales, the Facility is not located on a Source Protection Zone (“SPZ”).

2.5. Flooding

- 2.5.1. As shown on the Long-Term Flood Risk Maps available on the Lle Geo-Portal for Wales⁶, the Facility is located within an area categorised as possessing very low flood risk from rivers and seas and surface water. Very low risk is defined by NRW as having less than 0.1% of flooding.

⁵ British Geological Survey Geology of Britain Viewer. Available online at <http://mapapps.bgs.ac.uk/geologyofbritain/home.html?>, accessed April 2021.

⁶ Lle Geo-Portal for Wales Long Term Flood Risk Maps, available at: <https://naturalresources.wales/evidence-and-data/maps/long-term-flood-risk/?lang=en>, accessed April 2021.

3. SITE ACTIVITIES

3.1. Proposed Waste Activities

3.1.1. Platts propose to undertake one Specified Waste Operation as follows:

- storage of non-hazardous waste wood (classification 03 01 05) with subsequent treatment involving magnetic separation, screening, pulverising and baling to produce animal bedding material (including cubicle conditioner) for use within the agricultural livestock sector.

3.1.2. Platts propose to accept 60,000 tonnes of non-hazardous 03 01 05 wood waste per annum at the Facility.

3.1.3. Consequently, the waste management operations to be carried out at the Facility as specified in Annex I and Annex II of the Waste Framework Directive 2008 are detailed below:

- **R3:** Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes); and
- **R13:** Storage pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced).

3.1.4. In the event of a fire, the following emissions would be anticipated:

- combustion gases released to atmosphere, these would be relatively short lived and would not cause any significant adverse environmental effects; and
- potentially contaminated firewater on impermeable concrete immediately surrounding the source of the fire where the firewater would be applied.

3.2. Waste Acceptance

3.2.1. Platts have put in place a fully documented incoming waste acceptance procedure at the Facility, the primary purpose of which is confirm that the characteristics of the incoming waste matches the information provided at the pre-acceptance stage.

3.2.2. The waste acceptance arrangements will follow a risk-based approach considering:

- source, nature and age of the waste;
- potential risks to process safety, occupational safety and the environment (e.g. from odour and other emissions);
- potential for self-heating; and
- knowledge about previous waste holder(s).

3.2.2.1. Waste will only be accepted when there is sufficient capacity within the Facility and a clear defined method of recovery has been determined. Waste will not be accepted if the capacity is not available.

3.2.2.2. Platts visually check wastes and verify them against pre-acceptance information and transfer documentation before accepting onto site. ~~The extent of the initial visual check is based on the waste type and how it is packaged.~~ Platts' will implement a number of waste acceptance checks to ensure no non-conforming waste is processed at the Facility.

- 3.2.2.3. The waste will be collected from the waste provider and transported to the Facility either in Platt's own trailers. ~~or within third party trailers during peak times.~~
- 3.2.2.4. On collection from the waste provider, Platts' drivers undertake loading checks (trailer, connection to abatement/filtration plant, canopy is fully connected).
- 3.2.2.5. On arrival at the Facility, all trailers will be checked to ensure they are in good condition and the waste has been transported correctly. The trailers will then be weighed and issued with waste acceptance paperwork and the following information will be recorded:
- weight;
 - date of arrival on-site;
 - time;
 - original producers' details (or unique identifier); and
 - unique reference number.
- 3.2.2.6. All details are checked by the Environmental Department prior to the waste being accepted.
- 3.2.2.7. A basic visual check will be undertaken on site which will consist of assessing the waste through the trailer window to ensure no obvious signs of non-conforming waste is held within the trailer. Opening the doors of the trailers at this stage would generate fugitive dust emissions and therefore, to prevent risks to occupational health and safety and the environment, as well as to prevent contamination of the wood waste if it were to be unloaded for inspection, opening doors is not undertaken at this stage.
- 3.2.2.8. Unloading of the wood waste and a further thorough visual check for non-conforming waste will take place in the enclosed trailer unloading bay during tipping prior to waste processing to prevent fugitive emissions to air.
- 3.2.2.9. Waste delivered to the Facility must be accompanied by a written description of the waste describing its nature and information specifying the original waste producer and process where required.
- 3.2.2.10. Platts will develop a procedure containing clear and unambiguous criteria for the rejection of wastes, together with a written procedure for tracking and reporting such non-conformance.
- 3.2.2.11. Non-conforming waste is described as any waste that:
- the Facility is not authorised to accept;
 - is not recorded on the accompanying waste documentation; or
 - would not be expected, for any other reason, to be present.
- 3.2.3. Any non-conforming waste observed will be removed off site and sent back to the supplier as soon as practically possible, however, such waste will only be stored in the Non-Conforming Waste Quarantine Bay for a maximum of 5 working days.
- 3.2.4. The Non-Conforming Waste Quarantine Area is shown on the Site Layout Plan (Drawing PLAT.01.02-02) contained in Appendix I. Non-conforming wastes will be stored within the Quarantine Area on impermeable concrete in the external yard.

- 3.2.5. The supplier will be contacted without delay to inform them of the non-conforming waste and identify measures that can be implemented to prevent recurrence. NRW will also be informed as soon as practicable in the event of waste being rejected. Due to the extensive sampling regime to be implemented at part of the proposed activities, the risk of acceptance of non-conforming waste is considered low.
- 3.2.6. Back-up copies of electronic records will be maintained off site at Platts Head Office on Miners Road in Llay Industrial Estate.

3.3. Waste Handling, Storage, Processing and Dispatch

- 3.3.1. On arrival into site, vehicles will be required to report to the weighbridge and site office for waste acceptance. Once the load has been weighed, the waste will remain within the sealed trailer which will be moved to the dedicated site area for Full Trailers of Unprocessed Material as shown on the Site Layout Plan (PLAT.01.02-02) contained in Appendix I.
- 3.3.2. Waste storage arrangements are also shown on the Fire Prevention and Mitigation Plan (Drawing PLAT.01.02-04) contained in Appendix I.
- 3.3.3. Waste treatment at the Facility will involve magnetic separation, screening, pulverising and baling to produce wood shavings and dust as described in Section 3.1.
- 3.3.4. All waste received at the Facility will be treated on a first in first out basis and will be stored for a maximum of 1 month before processing.
- 3.3.5. The processed material will be packaged in plastic wrap before being palletised in the external yard. All processed material will be removed from the Facility within enclosed trailers within 3 months.
- 3.3.6. ~~All processed material will be weighed prior to being removed from the Facility. This will be achieved by the vehicles being weighed prior to loading and then prior to departure carrying such materials over the weighbridge.~~ Records of all material leaving site will be kept on the digital Enterprise Resource Programme ("ERP") system. Processed material that leaves site loose will be weighed prior to departure using the onsite weighbridge. The weight of processed material leaving site in a bale can be calculated based on the average weight of a bale produced multiplied by the number of bales leaving site. Records of the average weight and number of bales leaving site will be recorded within the digital ERP system.

3.4. Waste Tracking System and Maximum Storage Times

- 3.4.1. The maximum time unprocessed wood waste will be stored on site will be no longer than one month. Platts' aim to store unprocessed wood waste no longer than 5 days within Platts' own trailers before being processed and waste is usually processed on the day the waste is accepted onto site.

- 3.4.2. At the weighbridge, a Unique Reference Number (“URN”) will be issued for the trailer on arrival which will be added to the production trailer sheets in which the date of arrival will be recorded and the time stored on site will be tracked by the Production Department during production meetings to ensure first in first out processing.
- 3.4.3. Processed material which is baled and packaged will be stored on site no longer than three months in accordance with the stipulated storage times in the FPP guidance.
- 3.4.4. The processed material will also be subject to the tracking system. The Production Department will track the production date of each pallet in the designated numbered bays (A-K) and storage area (L). There will be a colour coded electronic tracking system as follows:
- when the pallet has less than 14 days remaining – red;
 - when the pallet has less than 14-21 days remaining – orange; and
 - when the pallet has over 21 days remaining – green.
- 3.4.5. The tracking system will enable the different products (bedding and cubicle conditioner) to be tracked. Clear labelling on the different products will also enable easy identification visually for the differentiation of bedding and cubicle conditioner on site.
- 3.4.6. This tracking system will be maintained and monitored by the Production Department and will be reviewed during Production meetings to ensure the oldest processed material is dispatched from the Facility first and they do not exceed maximum storage times.
- 3.4.7. It is the intention to implement one electronic tracking system covering both unprocessed waste and processed materials **with completion of the all-encompassing EPR digitisation system** in Quarter 3 2023⁴.
- 3.4.8. **A manual system will be in place to locate trailers on site. It is a future intention for trailers will to** benefit from Radio Frequency Identification (“RFID”) technology so the **EPR** system will be able to locate the trailer on site.
- 3.4.9. Once processed, each pallet of material will have a unique identifier barcode which will be scanned once issued as stock and then scanned to confirm it has been loaded and has left site.

3.5. Quantities and Storage Arrangements

3.5.1. Wastes will not be accepted unless the Facility is adequately resourced to receive the waste. The combustible material storage arrangements including quantities on site stored at any one time are provided in Table 3 below.

Table 3: Quantities and Storage Arrangements

Type	Site Location (Refer to Site Layout Plan PLAT.01.02-02)	Storage Arrangements	Maximum Pile Size (m ³) Stored on Site At Any One Time	Maximum Total Quantity (tonnes) Stored on Site At Any One Time
Unprocessed Wood Waste	Full Trailers - Unprocessed Material (red hatching)	Trailers	One Trailer – 13.7m (l) x 2.5m (w) x 4.5m (h) = 154	1 Trailer – 28 tonnes 5 Trailers Total = 140 tonnes
Processed Wood Material	Processed Material Storage Bays A-K (green hatching)	Baled on pallets in dedicated bays	Bays A & B 15m (l) x 10m (w) x 2.1m (h) bay size accommodates= 120 pallets (302.4m³) 120 pallets x 2 = 240 pallets (604.8m³)	
			Bay C 20m (l) x 10m (w) x 2.1m (h) bay size plus 8m (l) x 10m (w) x 2.1m (h) bay size accommodates= 220 pallets (554.2m³)	1 bale – 0.016 tonnes 55 bales per pallet = 0.88tns Total = 1,531 tonnes
			Bays D-K 20m (l) x 10m(w) x 2.1m (h) bay size accommodates= 160 pallets (403.2m ³) x 8 bays= 1,280 pallets (3,225.6m³)	
			Storage Area L - Processed Material Storage Area (green hatching)	1 bale – 0.016 tonnes 55 bales per pallet = 0.88tns Total = 211 tonnes
	Processed Material Shavings Trailer	Trailer	13.7m (l) x 2.5m (w) x 4.5 (h) = 154m ³	28 tonnes
Waste Generated from Process – metal, soft plastics, hard plastics and wood	Waste Skip and Bin Storage Area	3-4 x Enclosed Skips	Each skip – 6.7m (l) x 2.4m (w) x 3.4m (h) = 55m ³ 4 x 55m ³ = 220m ³	Metal = 15 tonnes Soft Plastics = 15 tonnes Hard Plastics = 15 tonnes Wood = 15 tonnes

Note to Table: Pallet size is 1.2m x 1m x 2.1m (h) = 2.52m³

Table 3: Quantities and Storage Arrangements

Type	Site Location (Refer to Site Layout Plan PLAT.01.02-02)	Storage Arrangements	Maximum Pile Size (m ³) Stored on Site At Any One Time	Maximum Total Quantity (tonnes) Stored on Site At Any One Time
Waste Generated from Process – metal (including from equipment maintenance and repairs)	Waste Skip and Bin Storage Area	1 tonne storage container	1.4	1
Waste Generated from Process – general waste and recycling	Waste Skip and Bin Storage Area	660 litre enclosed bins	1.1m (l) x 0.6 (w) x 1.3m (h) bin size. Bin Capacity - 0.66m ³ x 2 = 1.32m ³	General Waste – 0.05 tonnes Recycling – 0.02 tonnes

- 3.5.2. It should be emphasised that in the above table, the bay size and storage area sizes are given for the processed material. The material is stored on pallets and not loose and therefore, the number of pallets has been calculated based on how many can physically fit within the designated bay/storage area. For example, although the storage area L is 15m (l) x 20 m (w) x 2.1m (h), only 240 pallets can fit within the area (see Note to Table 3 providing pallet size) which equates to 604.8m³. A storage area of 630m³ would only be achievable if the material is stored loose which is not the case.
- 3.5.3. All combustible material storage areas are shown on the Fire Prevention and Mitigation Plan (PLAT.01.02-04) contained in Appendix I of this FPP.
- 3.5.4. The unprocessed wood waste material within enclosed Platt's owned trailers will be easily accessible so any fire inside can be extinguished. Platts have their own fleet of vehicles and will be able to move the trailers as soon as is reasonably practicable in a safe manner to prevent the fire spreading.
- 3.5.5. It should be noted that no combustible material (unprocessed wood waste or processed material) will be stored even temporarily in the factory building. Waste wood is processed and immediately moved to the designated storage areas in the external yard or removed from site. No unprocessed or processed material is stored in the Shed marked on the Site Layout Plan as this is Control of Substances Hazardous to Health ("COSHH") (chemical) storage. No material is stored in the Bulk Loading Bay.
- 3.5.6. Only white sawdust and shavings from clean wood are processed through the white shavings screener. It is a completely enclosed system and the material passing through the screener is then stored in an enclosed trailer before being baled.
- 3.5.7. Processed material will be stored within designated fire-resistant bays, as well as a dedicated storage area with the required separation distances.
- 3.5.8. The bays will be constructed so as to be of sufficient height, thickness and construction to

offer a fire resistance period of at least 120 minutes to enable waste to be isolated, to stop the spreading of fire and to minimise radiant heat.

- 3.5.9. A minimum 1m freeboard will be maintained between the processed material and firewall height. A height indicator will be placed at the appropriate maximum height allowed for each storage bay.
- 3.5.10. The storage of processed material along the boundary of the Facility perimeter is also separated by the rear of the firewall bays to minimise the risk of fire from spreading to the adjacent industrial units and woodland.
- 3.5.11. The exact specification of the fire-resistant bays will be established via an approved stockist to ensure the appropriate standard of fire resistance is met.
- 3.5.12. ~~It is envisaged that the~~ Firewall will be a minimum of 180mm thickness consisting of fire-resistant concrete ~~panels blocks manufactured and installed by Modular Cubed Limited.~~ The design life of the fire-resistant concrete panels is 50 years to BS8500 and the fire resistance will be 120 minutes (REI 120) BS EN 1992-1-2-. ~~The fire resistance is provided by the density and width of the concrete.~~
- 3.5.13. Joint components and sealants (e.g. intumescent mastic sealant between the interlocking concrete ~~panels block~~) will possess the same fire resisting qualities as the firewalls themselves.
- 3.5.14. It can be confirmed that the fire-resistant bays will be installed in line with the manufacturer's recommended installation requirements ~~as the manufacturer themselves will install the fire-resistant panels. Platts commit to the installation of the firewalls and confirmation and evidence will be provided to NRW following installation.~~
- 3.5.15. The total amount of unprocessed combustible waste material stored on site at any one time will not exceed 140 tonnes.
- 3.5.16. The total amount of combustible processed material on site at any one time will not exceed 1,770 tonnes.

3.6. Fire Prevention Plan – Quarantine Area

- 3.6.1. The FPP Quarantine Area will be used in the event of a fire on site and will be kept clear at all times. The Quarantine Area will have signage, moveable cones and a floor marker so that it can be easily located and to inform vehicles not to restrict access to this area.
- 3.6.2. All staff will be trained in the location and use of the Quarantine Area to ensure that waste can be transported to this area as soon as possible or at most within 1 hour of the fire starting. The training will include practice exercises simulating a fire event in which staff will be required to move waste to the Quarantine Area in an emergency situation.
- 3.6.3. The location of the Quarantine Area is identified on the Fire Prevention and Mitigation Plan (Drawing PLAT.01.02-04) and can be used to place burning wastes to extinguish them or to move unburnt wastes into the quarantine area to isolate and prevent them catching fire.
- 3.6.4. The Quarantine Area has a storage capacity of ~~441~~ 302.4m³ (i.e. 12m x 12m x 2.1m) which

is capable of holding well in excess of 50% of the volume of the largest stack (i.e. $605\text{m}^3/2 = 302.5\text{m}^3$ or $240 \text{ pallets}/2 = 120 \text{ pallets}$) and benefits from 6m separation distances shown on the Fire Prevention and Mitigation Plan (Drawing PLAT.01.02-04). Please refer to Section 3.5.2. which explains how processed material is stored within the designated storage areas and consequently, how the largest storage pile is calculated.

4. POTENTIAL SOURCES OF FIRE RISK

4.1. Common Causes of Fire

4.1.1. As per NRW's FPP guidance, the following potential sources of fire risk have been identified, based on the hypothetical scenario of the absence of any risk management measures and strategies being employed:

- **Arson:** Industrial Estates and factories can commonly be affected by arson; a serious issue as the ensuing fire can easily spread to another unit.
- **Plant or Equipment Failure:** When not properly maintained and inspected, plant and equipment can pose a serious fire hazard. This is particularly true of mechanical equipment, due to the potential for friction to develop between moving parts of the equipment.
- **Electrical Faults (including damaged or exposed electrical cables):** Faulty electrics and non-compliant electrics are one of the most common causes for fires in the workplace. The main hazards include wiring not meeting the relevant standards, exposed wiring, overloaded circuits and power outlets, extension cords, and static discharge. All of these have the potential to generate a spark, which has the potential to act as an ignition source.
- **Discarded smoking materials:** Smoking materials have the potential to ignite a fire if they come into contact with flammable or combustible materials.
- **Hot works:** Hot works, commonly including welding and torch cutting, have the potential to cause a fire as a result of the sparks and molten material which are generated during their operation. These can become hot, and could ignite a fire if they come into direct contact with flammable/combustible materials.
- **Industrial heaters:** Industrial Heaters can become a potential fire hazard if a fault develops, allowing issues such as over-heating to develop within the device. This hazard is worsened by the heaters being left turned on and unattended.
- **Plant and Hot exhausts:** The settling of dust on hot exhausts and hot engine parts can cause a fire as a result of the heating up of the materials. This could become a hazard both during operation and post-operation.
- **Ignition sources:** Other ignition source such as naked flames must be kept away from combustible or flammable materials.
- **Leaks and spillages of oils and fuels:** Oils and fuels are flammable (and potentially explosive), therefore if they leak or are spilled within the site boundary, they are liable to present a risk of fire should an ignition source interact with it.
- **Build-up of loose combustible waste, dust and fluff:** Loose combustible waste creates more opportunity for interaction with potential ignition sources, increasing the likelihood of a fire starting.
- **Reaction between wastes:** If incompatible wastes are stored together, they have the potential to react and potentially lead to a hazardous situation. Common outcomes of the mixing of hazardous wastes include heat generation, flammable gas generation, explosions, or fire.
- **Self-Combustion:** This occurs by an increase in temperature due to exothermic internal reactions within the waste piles, followed by thermal runaway due to chemical oxidation, rapidly accelerating to high temperatures and auto ignition.

5. PREVENTION MEASURES

5.1. Table 4 below provides a summary of the associated preventative measures as per NRW's FPP guidance.

Table 4: Preventative Measures

Cause	Preventative Measures
Pile Sizes/Volumes and Dimensions	<ul style="list-style-type: none"> The combustible unprocessed wood waste and the white shavings will be stored within enclosed lockable trailers capable of holding in excess of the guidance threshold of 1,100 litres, therefore, the appropriate stack pile sizes detailed in Table 2 of the FPP guidance do not apply. The trailers will not be stacked. The volumes within the trailers are provided in Table 3 of this FPP. Designated bays (Bay A-K) with fire-resistant walls will be used to store processed material. The bays will not exceed 10m width and the capacity of each bay will be marked on site using signage. 1m freeboard will be provided and the height of the material will be 2.1m at all times. A separate designated area on site (Area L) will also be used to store processed material. All sides of this storage area L will be accessible and therefore, the width of this waste pile will be 15m and the height will be no greater than 2.1m. The designated storage area will be denoted by hatching on the external surfacing. Baled and packaged processed material will not be stacked higher than 2.1m. Temperature monitoring is detailed in Section 'Actions to Limit Self-Heating' of this Table. Baled material shall not exceed time limits, therefore, breaking bales is not considered necessary. Interlaced bales are not required as the material is not baled plastic or rubber where burn temperatures are higher and interlacing may reduce burn temperatures and how energetically a fire may burn.
Arson and Vandalism	<ul style="list-style-type: none"> The entire Facility benefits from a perimeter fence with barbed wire and lockable entrance gates. All access doors will be locked when unattended and only a limited number of employees possess access keys in order to restrict unauthorised access into the Facility. The Facility is covered by CCTV which is monitored by site personnel. The site infrastructure, including the site security measures will be inspected monthly and maintained and repaired as required to ensure their continued integrity. Any repairs will be made by the end of the working day. If this is not possible, suitable measures will be taken to prevent any unauthorised access to the site and permanent repairs will be affected as soon as practicable; A visitor sign-in system will be in place. In the event of a breach of security at the site, the cause will be investigated and appropriate mitigation measures implemented. This will be recorded as a hard copy in the site diary visitor sign in folder; and Records will be maintained and will include inspections and maintenance of security fencing and doors, breaches of security, investigations and actions taken.

Table 4: Preventative Measures (Cont.)

Cause	Preventative Measures
Storage Duration	<ul style="list-style-type: none"> Combustible wood waste will be stored on site no longer than one month. Baled, packaged processed material will be stored no longer than three months. Platts will aim to process the incoming material within 5 days and arrange for its export off site as soon as practically possible. Waste will be recorded and processed in date order; A waste tracking system will be implemented which will enable the storage durations to be checked and updated daily by the Site Manager. The number of remaining storage days will be reviewed every Production Meeting; and There are no seasonal variations in opening times
Training (Cont.)	<ul style="list-style-type: none"> Training will be provided to all site personnel in relation to how to prevent fires on site, how to identify fire risks and how to spot fires on site. Nominated personnel will also receive training on the safe use of fire extinguishers by a specialist third party fire consultant. Site management will ensure that there is always a sufficient number of staff on site when the site is operational; All staff and contractors will be made aware and understand the contents of the FPP and the procedures that are in place to be followed in the event of a fire on site. This familiarisation training will be undertaken as part of the company's induction process and staff will be required to provide a signature to confirm and record that they have read and understood the contents of the FPP and associated procedures; A fire drill will be held annually to simulate the processes which would be undertaken in the event of a fire. It involves creating a situation which replicates what would happen if a real fire were to occur, with the inclusion of fire alarms and requires the employees, contractors and visitors to evacuate; and The drill enables familiarisation of the FPP and ensures the quickest and safest exit routes are used. Findings from the drill will be discussed and an action plan to address any opportunities for improvement will be implemented if necessary.
Employee Awareness	<ul style="list-style-type: none"> Employees will be aware of: <ul style="list-style-type: none"> the actions to be taken on discovery of fire and on hearing a fire alarm; the location of manual fire alarm call points within the building and the method of operation; the location of firefighting equipment within the building and the method of operation; all escape routes within the building; the purpose of fire resisting doors and their location within the building; and evacuation procedures for the building and the location of the assembly point. All employees will be aware of the methods of fire prevention as detailed below: <ul style="list-style-type: none"> should an employee consider that something or someone presents a fire risk within the building, they will report the matter to the Site Manager;

Table 4: Preventative Measures (Cont.)

Cause	Preventative Measures
Employee Awareness (Cont.)	<ul style="list-style-type: none"> employees will not allow the accumulation of large amounts of combustible materials around workplaces or escape routes; employees will not obstruct fire escapes; fire exits or any fire-related equipment; employees will ensure that self-closing fire/smoke doors are not wedged in the open position; employees will observe the smoking policy for the site; and employees will maintain as best as possible a clear desktop policy to prevent the rapid spread of fire should it occur.
Monitoring	<ul style="list-style-type: none"> Due to waste being dry, therefore preventing microbiological activity to occur within the waste which would raise the temperature, it is unlikely that hot spots will occur within the waste in the enclosed trailers. Processed material is also baled and wrapped in plastic preventing moisture being present. Therefore, hot spots are also considered unlikely during the storage of processed material. Site operatives will undergo training on the management of stockpiles, including, recognising hot spots within stockpiles and managing hotspots. Combustible unprocessed wood waste will be stored for no longer than one month on site. Processed wood waste will be stored for no longer than three months on site. In order to ensure waste storage time is minimised, site operatives will ensure that the oldest materials is processed first and the oldest processed material is sent off-site first applying the first in first out principle. Stockpiles within the trailers, as well as processed material stockpiles will be visually inspected throughout the day and where appropriate findings logged within the team leader daily site walk checksheets held on the 'SafetyCulture' electronic system Site Diary at the start and end of each working day as a minimum. Note as per FPP guidance, steam is a good indicator of self-heating.
Actions to Limit Self-Heating	<ul style="list-style-type: none"> Effective stock management limits the likelihood of the self-combustion of materials stored on site. As such, the operator has waste acceptance and stock management procedures which are followed by all employees at the site. Stockpiles will be managed as follows, to minimise self-combustion: <ul style="list-style-type: none"> Stockpile volume, height and storage times will be minimised on site; where possible and practicable, material is stored in its largest form prior to processing; Wherever possible, the following measures will be implemented on site to reduce self-combustion: <ul style="list-style-type: none"> isolation of combustible materials; and restricting storage times. Taking into account the low risk of self-heating and spontaneous combustion due to the dry nature of the processed material and material being wrapped to prevent any ingress of water, temperature monitoring for processed material will be undertaken on days During May-Oct inclusive, and/or during when the air temperatures of $\geq 25^{\circ}\text{C}$ is experienced. Surface temperature of the bales within the pallets using a hand-held temperature probe will be monitored daily during these times. Monitoring the temperature within each bale is not proposed as the material is wrapped and piercing would potentially introduce moisture which is to be avoided.

Table 4: Preventative Measures (Cont.)

Cause	Preventative Measures
Actions to Limit Self-Heating (Cont.)	<ul style="list-style-type: none"> To assess the surface temperature, gaps will be left between the pallet stock to allow access within each storage area. This will also allow air flow thus reducing the likelihood of temperatures exceeding the trigger level. The trigger level will be set at 50°C. Additionally, where the temperature monitored is below the trigger level but there has been an increase of 20°C between monitoring events, this will also require action. Remedial action to cool the hot spot will be undertaken, such as rotating, turning and moving the material. Regular temperature monitoring will be undertaken until the material has returned to normal temperature. All actions will be recorded. During Nov-Apr, On days where the air temperature is below $\geq 25^{\circ}\text{C}$, temperature readings will be reduced to weekly checks so that the frequency of checks is proportionate to the risk of self-heating during the cooler days. months. For incoming unprocessed material, all trailers being unloaded immediately after arriving at the yard must be inspected for hot spots and hot brakes to prevent any ignition risk. Hot breaks: <ul style="list-style-type: none"> The infra-red temperature probe is stored in the control room and must be used to determine the temperature of every load which is suspected of having hot brakes and be recorded on the Production sheet under 'Comments'. Trailers arriving on site with hot brakes which may be an ignition risk must not enter the unloading shed, trailers must be parked up until the brakes are sufficiently cooled. If the temperature is 40°C or above then the trailer must be stored in the yard until it has sufficiently cooled down. the temperature is taken at the radius of the wheel hub which is the area that retains the most heat when a hot brakes issue occurs. Hot spots within waste within the incoming waste trailers: <ul style="list-style-type: none"> A thermal imaging camera will be purchased to establish baseline internal temperature conditions to set a trigger point and will be used to determine internal temperature of the trailer and provide representative waste temperature coverage. In the very unlikely event that a hot spot is identified, the trailer will be isolated away from the factory and combustible sources but within reach of the 30m fire hose. The trailer doors shall be opened and if required dosing with water to cool the hot spot. This will only be undertaken once any drains are isolated and the water will be contained using firewater containment measures (see Section 6.6.). The wet material would then be removed offsite as waste to an appropriately licenced facility. A non-conformance shall be raised and the cause investigated and actions implemented including those by the supplier.
	<ul style="list-style-type: none"> Site plant/vehicles will be kept to a minimum. The proposed mobile plant on site is detailed in the Planned Preventative Maintenance Plan contained in Appendix II. The storage location of mobile plant is shown on the Fire Prevention and Mitigation Plan (PLAT.01.02-04) contained in Appendix I. Site plant will be fitted with fire extinguishers and dust filters.

Table 4: Preventative Measures (Cont.)

Cause	Preventative Measures
Plant and Equipment (Cont.)	<ul style="list-style-type: none"> • A number of measures will be implemented at the site to prevent fuel and combustible liquids leaking or trailing from site vehicles. These will include: <ul style="list-style-type: none"> • Site vehicles subject to annual servicing and maintenance checks; • Daily checks, such as evidence of obvious leaks, hydraulic fluid levels, operating systems, undertaken on site vehicles prior to use; • A procedure for reporting any faults or maintenance concerns to prevent any foreseeable breakdowns or leaks; • A procedure for immediate reporting of fuel leaks or spillages; • In the unlikely event of a fuel leak, spill kits will be deployed to clean up any fuel spillage and prevent entry to the onsite. As part of the Site's Environmental Management System ("EMS"), staff will be trained in emergency response procedures, including the deployment and appropriate disposal of spill kits. • Any delivery vehicle allowed entry onto site must be serviced and Ministry of Transport ("MOT") road worthy. • Any evidence of leaks from these vehicles will be recorded and communicated. Further entry to site will be refused until repairs have been made. • Operatives will be required to complete inspection for all equipment on a daily basis. Inspection will be undertaken to check for faults and ensure appropriate safeguards are in place. The inspections will be recorded in the the 'SafetyCulture' electronic system Site. • All plant and equipment will be operated, maintained and serviced in line with manufacturer's recommendations and instructions. Instruction Manuals for plant and equipment will be held on site. • Induction training and refresher training will be provided to staff in the safe operation of plant and equipment relevant to their role, in accordance with the EMS. • The Planned, Preventative Maintenance Regime ("PPMR") for site plant and equipment is provided in Appendix II and will also be displayed in the site office and records of all servicing and maintenance will be stored within the site office. • Plant and equipment will be visually inspected to ensure it is fit for purpose. • If required, plant will be subject to blow down at the end of the day to remove any dust or fluff accumulations from waste processing operations. A check will be undertaken to ensure that each blowdown has been carried out and a record maintained of these checks. • In the event of a failure or suspected fault with an item of plant or piece of equipment, the operator will ensure that the equipment is shut off in a safe manner and not used until the equipment can be repaired or replaced.
Infrastructure and Site Inspections	<ul style="list-style-type: none"> • Operational areas of the site and equipment will be cleaned down during each working day to reduce the build-up of waste or dust. The unloading platforms are cleaned of dust following each trailer load in addition to the start and end of the shift. • The site will undergo daily housekeeping inspections and infrastructure inspections on a monthly basis as part of Platts' EMS.

Table 4: Preventative Measures (Cont.)

Cause	Preventative Measures
Electrical Faults	<ul style="list-style-type: none"> Regular safety checks and daily site inspections will be recorded in the site diary/wall planners and electronically; All buildings electrics will be fully certified by a qualified electrician; Employees are not permitted to bring their own electrical items into the work environment; Annual Portable Appliance Testing ("PAT") testing of any portable electrical appliances will be carried out. This includes third party contractor electrical equipment which must be PAT tested prior to being used on site.
Ignition Sources	<ul style="list-style-type: none"> Sources of ignition will be kept at least 6 metres away from combustible and flammable materials. Sources of ignition will be minimal. Portable heaters are not permitted on site. No smoking policy will be in effect in all operational areas and this will be communicated to all staff and visitors with signage and training.
Heat and Spark Prevention	<ul style="list-style-type: none"> No burning, reactive/reacting or visibly hot (producing steam or heat) loads will be accepted on site. Loads will be visually inspected on arrival at the site and during tipping for processing to ensure compatibility with accompanying delivery notes, therefore minimising prohibited wastes. In the very unlikely event that a hot load is identified, it would be rejected and immediately returned to the supplier. If this is not possible, the hot load would be moved to the Quarantine Area benefiting from a separation distance of 6m and the waste will be removed as soon as practically possible. The waste supplier will be contacted, and evidence of preventative action taken will need to be provided prior to any subsequent waste being accepted at the Facility from the waste supplier. Hot works will be undertaken within the fabrication shed at the Facility. Any hot works/use of cutting tools will be carried out indoors and at a safe distance from combustible materials. The site will operate a Permit to Work/Risk Assessment system to control high risk activities, such as hot works. Only a Competent Person, one that is adequately trained and experienced, is authorised to undertake the welding and cutting on site. The control and preventative measures stipulated on the Permit to Work/Risk Assessment will be rigorously followed by the Competent Person and the other members of the team. The area will be made safe before the work starts and all the prescribed preventative precautions will be taken whilst the work is in progress. On completion of the hot work, the area will be cleared and checked. The competent person or deputy will re-visit the work area, after a suitable period of time. This will be undertaken one hour after the activity has ceased and at the end of the working day. This is known as a fire-watch and ensures no signs of smouldering embers or hot surfaces are evident which could potentially cause a fire. An example of the blank Job Specific Risk Assessment /Permit to Work which will be completed is provided in Appendix III. At regular intervals during working day, as well as at the end of the working day, a fire watch will be carried out. Vehicles will be turned off when not in use. A fire watch will be undertaken at regular intervals throughout the working day to detect signs of fire caused by dust settling on hot exhausts and engine parts. Special consideration will be given to the high-risk time which is the hour after the plant/machinery has been switched off when dust can settle on hot exhausts. A fire watch will carry out visual checks. Additionally, vehicles will be given time to cool down and the final fire watch will be undertaken at the end of the working day prior to staff leaving site.

Table 4: Preventative Measures (Cont.)

Cause	Preventative Measures
Heat and Spark Prevention (Cont.)	<ul style="list-style-type: none"> Flammable/combustible materials will be stored in designated areas away from frequent vehicle movements; Heat monitoring will be undertaken as detailed in Section Limits for Self-Heating. Moisture level testing of the material will be undertaken as moisture is a key aspect related to pathogens and mould formation. Moisture content will be less than 30% by weight. Pallets shall not be stacked and therefore, the maximum height of 2.1m will be maintained. Processed material is baled and wrapped in plastic preventing moisture being present. Therefore, hot spots are also considered unlikely during the storage of processed material. Furthermore, first in first out principle, storage times of 3 months maximum and rotating of pallets all help prevent self-combustion and heat build up.
Gas Bottles and Other Flammable Items	<ul style="list-style-type: none"> Through the implementation of robust waste acceptance procedures (See Section 3.2), waste gas cylinders will not be accepted on site. Gas cylinders related to the hot works will be stored securely within the temporary Fabrication Shed building being securely fastened with chains to the wall. within a dedicated locked gas storage cage.
Smoke/Heat/Flame Detectors	<ul style="list-style-type: none"> A Fire Alarm System has been installed on site and hence the Facility has smoke detectors fitted throughout the site buildings. The locations of the fire alarm system call points are provided on the Fire Prevention and Mitigation Plan – Buildings (Drawing PLAT.01.02-05) contained in Appendix I. The Fire Alarm System will be monitored when the site is not attended and Senior Management will attend site immediately to assist the FRS and ensure the FPP is adhered to. The Fire Alarm System will be tested weekly and serviced in accordance with the manufacturer's recommendations. Records of the tests, servicing and any false alarms will be kept in the Fire Folder. The fire extinguishers at the Facility are described in detail in Section 6.3. – 'Containing and Mitigating Fires'. A GreCon Spark Detection System has been installed within the chippers where pulverisation takes place and floods the chipper system if it becomes activated.
Reactions between incompatible materials	<ul style="list-style-type: none"> Strict waste pre-acceptance and acceptance procedures will be implemented on site to ensure only the permitted waste types are accepted. All loads will be pre-booked and covered by appropriate waste documentation. Employees are under instruction to reject the load if incoming waste or materials have been identified which have not been previously agreed and stated on the waste documentation. Only experienced Platts personnel will be responsible for undertaking pre acceptance checks/ acceptance checks and allocating the waste to the correct designated waste storage area. As a result, any incoming waste or material has been pre-inspected and determined and therefore, incompatible waste and material will not be stored together under any circumstances.

Table 4: Preventative Measures (Cont.)

Cause	Preventative Measures
Explosion	<ul style="list-style-type: none"> • Due to the presence of sawdust, the processing area is covered by ATEX European Directives (Directive 99/92/EC – ATEX 137 and Directive 94/9/EC – ATEX 95) and only appropriately ‘Ex’ rated equipment is used; • A Dangerous Substances and Explosive Atmospheres Regulations 2002 (“DSEAR”) risk assessment is undertaken by a qualified person to zone the process areas; • an annual site inspection takes place to ensure equipment meets the right specification for that zone and is conducted by a qualified ATEX company; and • Any findings are actioned and documented.

6. FIRE MANAGEMENT AND IMPACT REDUCTION

6.1. Waste Acceptance

- 6.1.1. Strict waste acceptance procedures detailed in Section 3.2. of this FPP are strictly adhered to at the Facility.

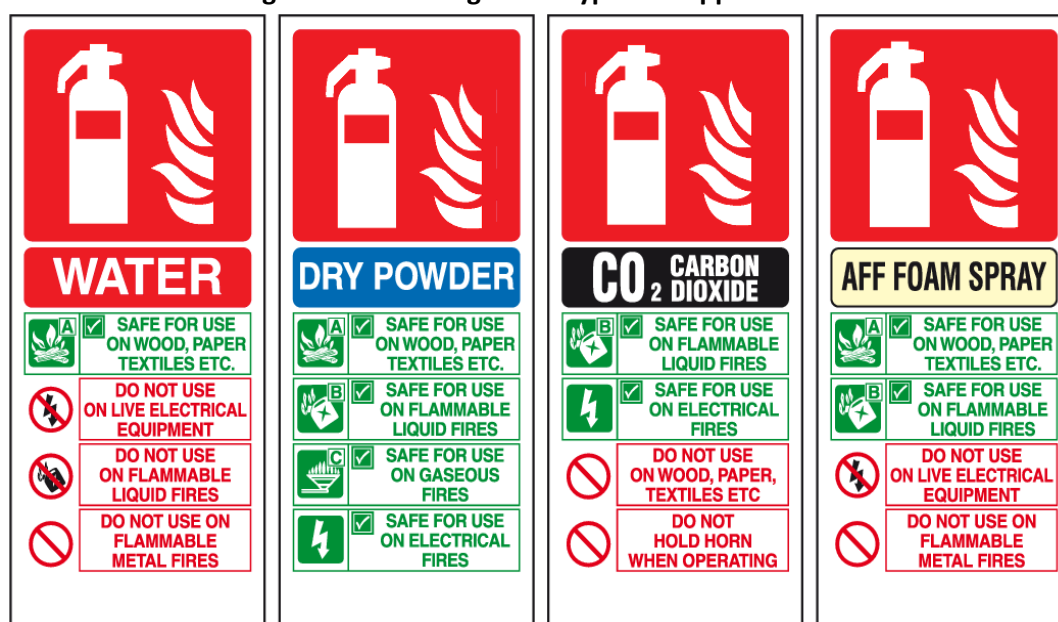
6.2. Site Infrastructure

- 6.2.1. The Facility will consist of impermeable concrete hardstanding surfacing and will include:
- a weighbridge;
 - site office;
 - a factory building including unloading bays, a packaging area, and size reduction machinery;
 - an external yard area comprising segregated storage of unprocessed waste material and finished product;
 - a temporary building used for fabrication works; and
 - vehicle washing area.
- 6.2.2. All site surface runoff (i.e. rainwater) from the Facility will enter the drainage system which ultimately connects into the foul sewer network. Any potentially polluting spillages at the Facility which could potentially enter the drainage system will be subject to the Facility's robust spill management procedure, which would prevent such an occurrence.
- 6.2.3. The Facility layout, infrastructure and drainage arrangements are displayed on the Site Layout Plan (Drawing PLAT.01.02-02) and Drainage Plan (Drawing PLAT.01.02-06) contained in Appendix I of this FPP.
- 6.2.4. Fire exit doors are an important part of a building's fire defences. The two functions of a fire door are:
- to compartment the building to prevent the spread of fire; and
 - to provide a safe means of escape for those persons evacuating the building.
- 6.2.5. All employees will ensure that all fire doors are kept shut at all times. All fire doors are shown on the Fire Prevention and Mitigation Plan – Buildings (Drawing PLAT.01.02-05) which is contained in Appendix I.
- 6.2.6. The fire alarm system on site consists of certified automated system with call points located throughout the buildings. The locations of the call points are also shown on the Fire Prevention and Mitigation Plan – Buildings (Drawing PLAT.01.02-05).

6.3. Containing and Mitigating Fires

6.3.1. The Facility will have water, powder, foam, and carbon dioxide fire extinguishers. The type and associated application are shown in Figure 2. The locations of the fire extinguishers are shown on the Fire Prevention and Mitigation Plan – Buildings (Drawing PLAT.01.02-05) contained in Appendix I. The fire extinguishers are maintained by a specialist third party accredited company and therefore covered by an appropriate UKAS-accredited third-party certification scheme. All fire extinguishers will conform to BS 5306 Part 8 and serviced as part of an annual inspection contract. Nominated Platts personnel will be trained in the safe use of the fire extinguishers by the specialist third party accredited company.

Figure 2: Fire Extinguisher Type and Application



6.3.2. An up-to-date site plan will be on display in the Site Office and will detail:

- site layout;
- main access route;
- waste storage arrangements;
- firefighting equipment locations;
- fire detection equipment locations; and
- PPE and fire containment measure locations.

6.3.3. The main access route to the Facility for fire engines is via Miners Park road. The width of this road is approximately 7m wide to accommodate heavy goods vehicles (“HGVs”) travelling daily to and from industrial units within the Llay Industrial Estate. It should be noted that there are no height restrictions on the access road or on entry to the Facility. The site entrance gates can be fully opened to approximately 5.5m. It can be confirmed that the main access route and entry point satisfy the stipulated dimensions provided in NRW’s FPP guidance document.

6.3.4. In addition, all plans, procedures and drawings relating to emergency scenario response including this FPP document and associated drawings will be held in the site office.

6.4. Site Procedures

6.4.1. The following procedures will be in place on site that will be followed in the event of a major fire onsite:

- the Managing Director and FRS will be notified immediately by calling 999 and NRW as soon as practicable;
- if the fire is contained within a delivery vehicle, the vehicle will be quarantined, and the fire quenched using onsite fire-fighting equipment;
- should fire compromise its stability or integrity of the building, all personnel on site will be immediately evacuated;
- if it is safe to do so, a temporary bund (firewater booms and drain covers) will be deployed. The temporary boom deployment would enable immediate containment and therefore, limiting overland flow preventing the percolation of firewater into the ground and also preventing the firewater entering the drainage system. The main Facility yard is a large expanse benefiting from impermeable concrete surfacing which could hold the firewater. If the fire was to occur within the main building, the firewater booms would be deployed at the door entrance to prevent firewater leaving the building, therefore, isolating the firewater from the external yard and drainage system. Any firewater held within the bund will be tested before removal offsite to a suitably licensed Facility once the fire has been extinguished;
- in the event that additional external support is required, an emergency tanker response company will be called to attend site immediately (see Section 6.6. for more detail);
- drain covers will also be deployed to prevent any potentially contaminated firewater from entering the drainage system.
- if possible, waste that is unburnt will be dampened down to prevent the fire from spreading further and any contaminated runoff will be withheld within the temporary banded area;
- if possible, unburned material will be separated from the fire using site plant;
- the burning area will be isolated, and attempts will be made to extinguish the fire utilising the onsite fire extinguishers if safe to do so; and
- the unprocessed wood waste material stored within enclosed trailers are easily accessible as designed by the site layout arrangements enabling any fire inside to be extinguished. Platts will use their own vehicles to move trailers as soon as is reasonably practicable in a safe manner to prevent the fire spreading;
- depending on the scale of the fire, the site and buildings will be evacuated;
- Senior Management will notify adjacent businesses to the site directly in person or by telephone using the contact details provided in Appendix IV; and
- the FRS will instigate evacuation of neighbouring units if deemed necessary.

6.4.2. A Site Information and Key Contacts List is provided in Appendix IV which outlines the contact details of internal and external contacts to notify in the unlikely event of a fire on site. Out of hours telephone numbers are also provided.

6.4.3. During normal working hours, Senior Management will be available on site to co-ordinate the fire emergency response. Planning permission for the Facility allows 24/7 operation enabling Platts to meet peak demand when needed. For normal operations, the Facility will be manned 24 hours Monday to Friday and 6am to 6pm Saturday and Sunday.

- 6.4.4. Senior Management will also be on call to attend site out of hours during any emergency scenario at the Facility.
- 6.4.5. On identification of a fire at the Facility, it will be the responsibility of a nominated member of Senior Management to contact all key contacts provided in Appendix IV of this FPP to alert the nearby residents and businesses who may be affected by the fire.
- 6.4.6. In collaboration with the FRS, the need to evacuate personnel from adjacent buildings will be assessed and instigated if deemed necessary.
- 6.4.7. The Facility will not accept waste if there is an active fire on site. Waste will be diverted to a nearby suitably licenced site and, if possible, waste producers and Platts personnel on route for collection will be notified in advance to prevent vehicles arriving on site. Site personnel will be stationed in an appropriate location on Miners Park to redirect any delivery vehicles which were on route prior to the fire event occurring on site.
- 6.4.8. In addition, a laminated Fire Prevention and Mitigation Plan (Drawing PLAT.01.02-04) will be located at the site entrance enabling FRS to view the plan in the event of their attendance out of hours. The pack will be routinely inspected as part of the site inspection protocols. A copy of the NRW approved FPP document and associated drawings will also be provided to the FRS for it to be held on record by the FRS. The emergency information pack including the FPP is also held in the site office which is accessible to all staff and another copy is available at Platts' second site in Llay Industrial Estate (NGR 332386, 356468).

6.5. Fire Water Supply

- 6.5.1. All waste will be stored and treated on impermeable surfacing. Water to actively fight a fire will be available from a number of nearby fire hydrants with locations of the closest five hydrants (marked as H) to the Facility (outlined in green) as shown in Figure 3. All fire hydrants in Figure 3 have been inspected in the last three years and conform to British Standard 750:2012 (see Appendix V).

Figure 3: Location of Nearest Five Fire Hydrants to the Facility



- 6.5.2. The nearest fire hydrant to the Facility entrance is numbered 17421 in Figure 3 above and is located at NGR 332197 356420. The exact locations of the nearest fire hydrants are shown on the Fire Prevention and Mitigation Plan (Drawing PLAT.01.02-04) contained in Appendix I.
- 6.5.3. The FPP guidance firewater calculations state that a water supply of at least 2,000 litres a minute for a minimum of 3 hours for a 300m³ pile of combustible material is required. Therefore, it has been estimated that based on a 604.8m³ stockpile, this being the maximum sized combustible material stored on site (See Table 3 and Section 3.5.2. for explanation regarding designated storage area and pallet sizes), 726m³ of water over a 3-hour period would be required. The water available for firefighting will be taken from the hydrant marked in Figure 3.
- 6.5.4. During the production of this FPP, both the North Wales Fire and Rescue Service and Hafren Dyfrdwy (water supplier) were consulted regarding the available fire water supply.
- 6.5.5. Hafren Dyfrdwy stated that they were not able to share flowrate data with third parties or customers. However, it was confirmed that the average pressure at the nearest data logger was on average 5.3 bar and estimated average of 6 bar at the units on Miners Road, Llay Industrial Estate which is considered adequate pressure. The pressure check is provided in Appendix V. It was also confirmed verbally by Hafren Dyfrdwy⁷ that the fire hydrants benefit from 9-inch mains.
- 6.5.6. In the absence of specific flowrate being available to third parties, the hydrant flow rates within the 'National guidance document on the provision of water for fire-fighting'⁸ to ensure adequate supply for use by the FRS authority in case of fire in any industrial estate have been utilised:
- up to one hectare minimum of 20 l/sec (1200l/min);
 - one to two hectares minimum of 35 l/sec (2100 litres/min)
 - two to three hectares minimum of 50 l/sec (3000 l/min); and
 - over three hectares minimum of 75 l/sec (4500 l/min).
- 6.5.7. The document also states that the infrastructure should also be at least 150mm nominal diameter. The hydrant closest to the Facility is 228.6mm.
- 6.5.8. The industrial area in which the Facility is sited is well in excess of three hectares and therefore, the use of the hydrant will enable the delivery of 4,500l of firewater per minute which is in excess of the 4,032 per minute required for the largest quantity (total of 725,760l divided by 180 minutes). Additionally, any firewater that pools on site surfacing will be utilised by the firefighting team, if possible.

⁷ Hydrant capability provided Hafren Dyfrdwy – Customer Service General Enquiries, Operations and Pressure Testing Team and Supply Team, information received 19th and 20th May 2021.

⁸ 'National guidance document on the provision of water for fire fighting', published by the Local Government Association and Water UK, available at: <https://www.water.org.uk/wp-content/uploads/2018/11/national-guidance-document-on-water-for-ffg-final.pdf>, accessed March 2023

- 6.5.9. The Fire and Rescue Services Act 2004 states that under Section 38 Duty to Secure Water Supply etc., the FRS authority must take all reasonable measures for securing that an adequate supply of water will be available for the authority's use in the event of a fire and that the FRS authority may use any suitable supply of water for the purposes of extinguishing a fire or protecting life or property in the event of a fire (but must pay reasonable compensation for the water). Although not deemed to be required as demonstrated above by the fire hydrant flowrate, it should also be noted that the Llay Reservoir is located approximately 0.76km from the Facility. The FRS fleet could utilise this water supply if necessary.
- 6.5.10. Furthermore, Section 40 Emergency Supply by Water Undertaker of the Act states that if the FRS authority requests a water undertaker to provide a supply and pressure of water for the purpose of extinguishing a fire that is greater than the undertaker would otherwise provide, the undertaker must take all necessary steps in order to do so. For the purpose of complying with this obligation, a water undertaker may shut off the water from the mains and pipes in any area. Therefore, there are sufficient water supplies available to the site for firefighting to take place and to manage a worst case scenario incident.

6.6. Firewater Containment

- 6.6.1. In the event of a fire and application of water to fight the fire, action will be taken to contain run-off from firewater to prevent pollution of the environment. Platts will take all the steps that are reasonably practicable to minimise pollution from fire water.
- 6.6.2. Platts will prevent fire water entering surface waters (no surface waters are in the immediate vicinity of the Facility and there are no surface water drains on site) and Platts will also prevent fire water entering into the ground and groundwater as the Facility benefits from impermeable surfacing.
- 6.6.3. Platts will deploy booms and spill kit containment measures. The storage locations of these containment materials are provided on the Fire Prevention and Mitigation Plan (Drawing PLAT.01.03-04).
- 6.6.4. Drain mats will be used to cover all drains within the permitted boundary. This will prevent any potential firewater runoff from entering the sewer drainage network.
- 6.6.5. Booms will be strategically placed to form a barrier to contain the firewater. The location of the fire and fire-fighting technique and direction will determine the appropriate deployment location of the booms.
- 6.6.6. If a fire were to occur, booms will be deployed to create a temporary barrier. Together with the FRS, the firewater would be contained within the main yard which is a large expanse benefiting from impermeable concrete hardstanding and bay walls.
- 6.6.7. Platts' Site Engineer has evaluated the fall of the land on site to ascertain where firewater will run during a fire event. This is shown in Figure 4.

Figure 4: Fall of the Land and Direction of Firewater Flow



- 6.6.8. Containment booms would be deployed to create impermeable barriers. As firewater will naturally fall towards the main yard area and towards the entrance gates, the booms will be deployed at the site entrances and along perimeters which do not benefit from the bay walls (bunded areas) depending on the location of the fire and application of the firewater. Based on a maximum height of 0.16m (boom height being the limiting factor), the significant area to be utilised on site provides a conservative containment capacity of 1,000m³ (excluding the site buildings and storage areas). The number of booms on site available for use will be one 100m poly spill land boom and six 10m poly spill land booms which are designed by FRS and in use nationally by FRS and industry.
- 6.6.9. The booms and bay walls will provide immediate firewater capacity and prevent the firewater from leaving site.
- 6.6.10. The volume of firewater required (725m³) can be contained within the site boundary due to the available site area, bunding and boom deployment. However, for additional firewater containment support, an emergency response service from Enviroclear Site Services Limited will also be available 24 hours a day, 365 days of the year is located in the immediate vicinity of the Facility (11 miles) and has a large fleet of vacuum tankers ranging from 3,000 litres to 30,000 litres capacity. The travel time from Enviroclear depot to the Facility is approximately 15 minutes providing adequate time for the tanker(s) to arrive on site. **Telephone 01978 840228 for tanker assistance.**
- 6.6.11. The FPP Quarantine Area has been located away from the designated GCN habitat area and 200mm high perimeter kerbing will prevent any firewater entering the habitat area. The habitat area is also clearly marked on the drawings contained in Appendix I to highlight the need to protect this area during a fire event by both Platts personnel and the FRS. Firewater will also naturally flow away from this habitat area due to the fall of the land (See Figure 4).

- 6.6.12. The Senior Management Team and nominated deputies will be responsible for organising and managing the deployment of the firewater containment measures and will be appropriately trained. The FPP exercise drills will include differing fire scenarios and the deployment of the appropriate firewater containment measures.
- 6.6.13. Platts will have the capability of deploying the firewater containment measures within a matter of minutes. Platts has the capability to operate 24/7, however, if the site is unattended, the containment measures will be deployed within a maximum of 15 minutes as employees live locally. Taking into consideration the time taken for the FRS to attend site (call handling, station to be alerted, crew deployment and travel time), in addition to the FRS undertaking a risk assessment prior to application of any fire-fighting methods including firewater, this will be sufficient time for Platts personnel to attend site, deploy immediate containment measures and instruct the emergency tanker company to attend site if needed. Additionally, the FRS will have access to the FPP document and will also be able to access and deploy the containment measures as they will be stored externally as shown on the Fire Prevention and Mitigation Plan (PLAT.01.02-04). It should also be noted that in certain circumstances, the FRS may request to deploy the containment measures themselves rather than allowing Platts personnel depending on the risk.
- 6.6.14. The spill kits including the booms and drain mats will be in an accessible sealed container checked every 3 months by site personnel and will be replaced as per the manufacturer's expiration dates if provided or alternatively, when on visual inspection, it is deemed necessary.
- 6.6.15. As discussed above, depending on the scale of the fire, the FRS will co-ordinate the firefighting response which will include assessing the risk to retrieve the containment contents. The location of the firewater containment equipment has been chosen to enable quick and safe accessibility.

6.7. Management after a Fire Event

6.7.1. After a fire event, the following procedure will be implemented depending on the severity of the fire:

1. *A small and containable fire that can be dealt with in-house using suitably trained staff and firefighting equipment located on site:* the fire will be recorded in the site log, including the causes of the fire and methods used to manage the fire.
2. *A larger fire that requires the presence of the Fire and Rescue Service:* if the site operatives have been told to evacuate or cease operations by NRW and/or Fire and Rescue Service, the site personnel will wait until told safe to re-enter site. The fire will be recorded in the site log, including the causes of the fire and methods used to manage the fire.

6.7.2. The Senior Management Team will liaise with the NRW to determine a plan-of-action, to introduce waste transfer and storage operations at the site and the timescales involved to achieve this.

6.8. Fire Damage Extent and Decontamination

6.8.1. The extent of the fire damage will be assessed by the Senior Management Team and depending on the scale of the fire, the FRS may also be present.

6.8.2. Should damage be sufficient to prevent the site from being able to treat and store waste, the site will cease accepting waste and will divert to a suitably permitted Facility.

6.8.3. Depending on the scale of the fire, smoke particles may have been transported and deposited onto various surfaces within the affected building. The thermal degradation of certain material can cause corrosive deposits to be emitted within the smoke particulates. It is therefore important that such deposits are effectively neutralised. A specialist company will be commissioned to undertake post fire clean up and smoke damage decontamination.

6.8.4. The structural stability of fire damaged infrastructure will be assessed and approved by a professional prior to re-entry onto the site.

6.8.5. The FRS may have also isolated electricity and gas during the fire. This will be reconnected by a registered professional. The integrity and functionality of the drainage system will also be assessed and approved by a professional prior to recommencement of operations.

6.9. Fire Damaged Waste

6.9.1. A visual assessment will be carried out by the Senior Management Team to determine whether the waste can be treated on site. Wherever possible, unburnt wastes will be separated from fire damaged areas of waste.

6.9.2. Any quarantined waste, waiting for removal from site, will be stored to prevent the contamination of unburnt wastes on the site, as illustrated on the Fire Prevention and Mitigation Plan (Drawing PLAT.01.02-04), contained within Appendix I.

6.9.3. The burnt waste will be removed off site within 24 hours. The Quarantine Area will benefit from at least 6m separation area to aid separation and management of wastes during an incident. Site staff will be trained in how to safely move quarantined waste to this area.

6.10. Recommencing Operations

6.10.1. An assessment will be carried out to determine whether further mitigation measures could have prevented the fire. Any outcomes to be implemented onsite will be incorporated within this Fire Prevention Plan and Platts' EMS as required. Once this work has been undertaken, the Senior Management Team will revisit the site to ensure all of the above have been undertaken and the site can recommence operations.

7. CLOSURE

7.1. This FPP is considered to be a 'working' document that will be reviewed and updated annually or as required should any of the following occur:

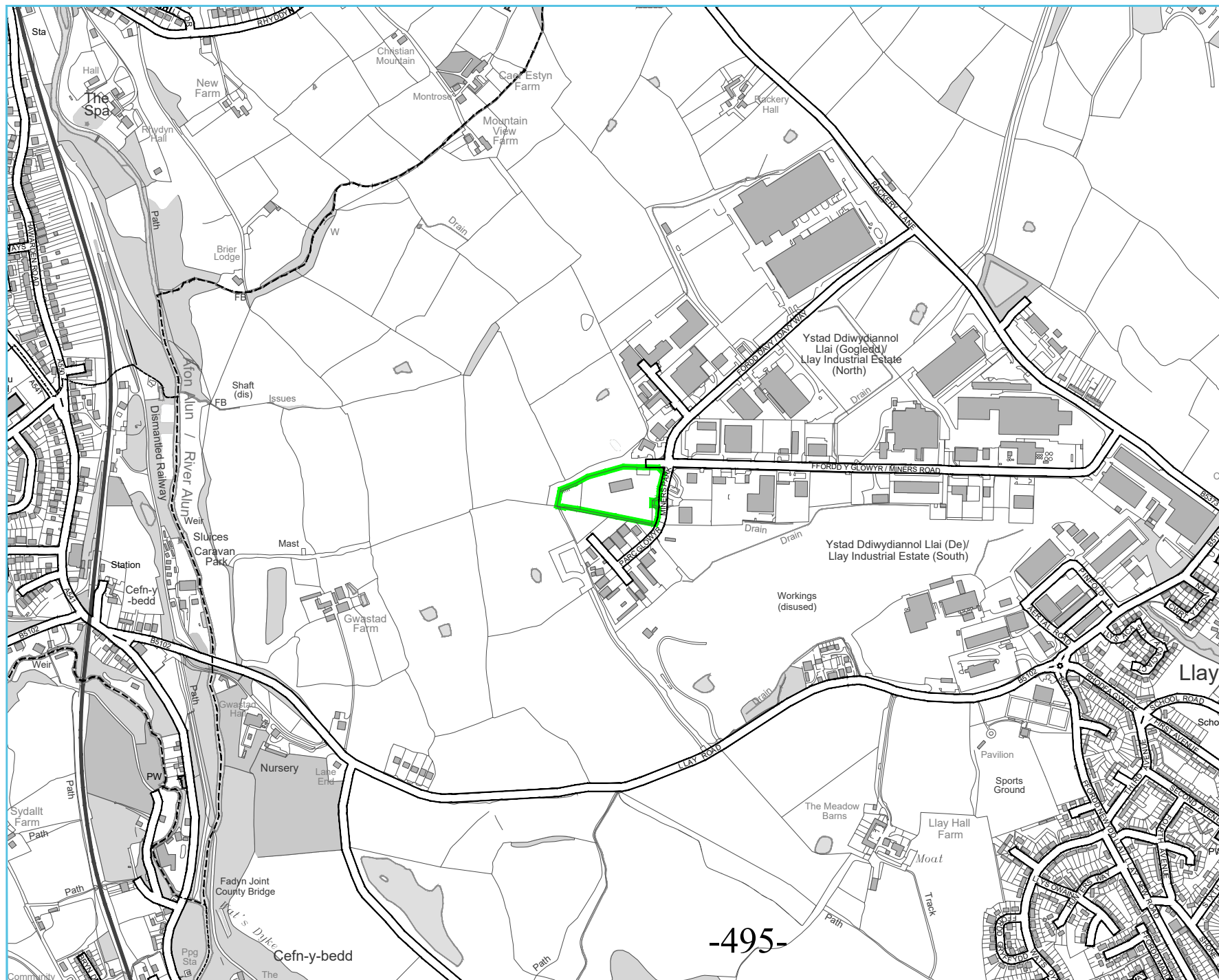
- a fire on site;
- a change or review of legislation;
- if the site is instructed to do so by NRW; or
- there are any changes to named contractors or emergency contacts.

7.2. It will be the responsibility of Senior Management to maintain this FPP and to ensure it is adhered to in the event of a fire on site.

APPENDIX I DRAWINGS

LEGEND

— ENVIRONMENTAL PERMIT BOUNDARY



Rev	Date	Details	Chkd
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Environmental Compliance Ltd.
 Unit G1
 The Willowford
 Main Avenue
 Treforest Industrial Estate
 Pontypridd,
 CF37 5YL

ecl
 Tel: 01443 841760
 Fax: 01443 841761
 Email: info@ec.world
 Web: www.ec.world

Client



Date	Scale	Drawn by	Checked by	Approved by
17/03/2023	1:10K @ A4	GTB	HR	SM

Drawing Status

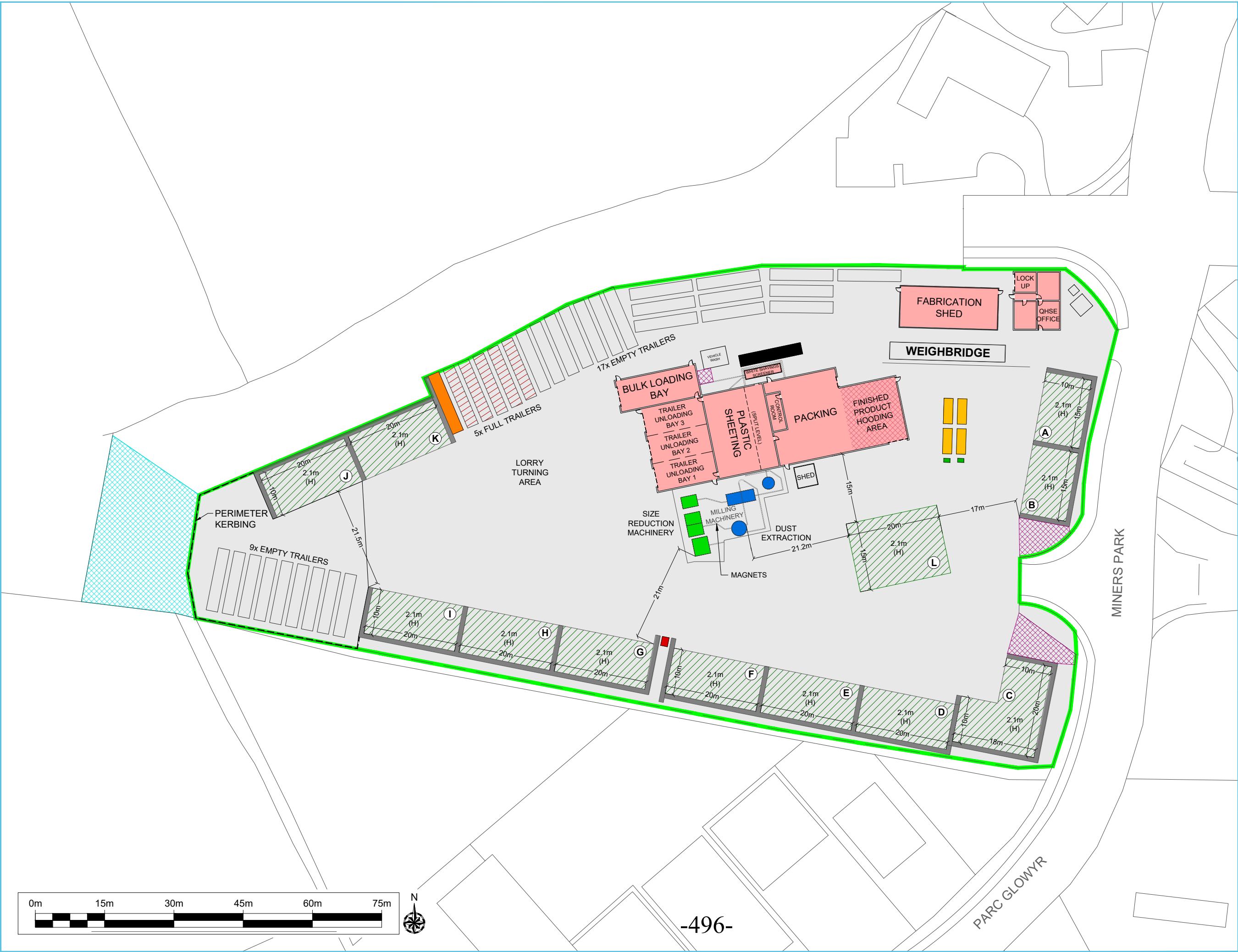
FINAL

Project Title
 ENVIRONMENTAL PERMIT APPLICATION
 PLATTS AGRICULTURE LIMITED
 MINERS PARK, LLAY INDUSTRIAL ESTATE
 LLAY
 WREXHAM

Drawing Title
 SITE LOCATION PLAN

Drawing Number	Rev
PLAT.01.02-01	-

-495-



- LEGEND**
- ENVIRONMENTAL PERMIT BOUNDARY
 - CONCRETE
 - BUILDINGS
 - TRAILERS CONTAINING UNPROCESSED MATERIAL
 - PROCESSED MATERIAL (BALES)
 - BUNDED RED DIESEL TANK
 - NON-CONFORMING WASTE QUARANTINE AREA
 - EXTRACTION TRAILER - 13.7m(L) X 2.5m(W)
 - MOBILE PLANT STORAGE AREA
 - GREAT CRESTED NEWT HABITAT AREA
 - 5.5x2x2.5m SKIP (3 no.) + 1 tonne container
 - 660L BINS

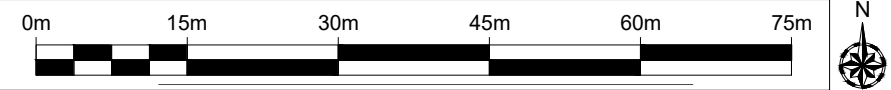
BAYS A-B
15m X 10m X 2.1m BAY = 120 PALLETS
120 PALLETS X 2 = 240 PALLETS

BAY C
10m X 20m X 2.1m + 8m X 10m X 2.1m = 160 + 60 = 220 PALLETS

BAYS D-K
20m X 10m X 2.1m BAY = 160 PALLETS
160 PALLETS X 8 = 1280 PALLETS

STORAGE AREA L
15m X 20m X 2.1m = 240 PALLETS

TOTAL = 1980 PALLETS



-496-

Rev	Date	Details	Chkd

Environmental Compliance Ltd.
Unit G1
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Main Avenue
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Pontypridd,
CF37 5YL

ecl
Tel: 01443 841760
Fax: 01443 841761
Email: info@ed.world
Web: www.ed.world

Client

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09/05/2023	1:750 @ A3	GTB	HR	SM

Drawing Status
FINAL

Project Title
ENVIRONMENTAL PERMIT APPLICATION
PLATTS AGRICULTURE LIMITED
MINERS PARK, LLAY INDUSTRIAL ESTATE
LLAY
WREXHAM

Drawing Title
SITE LAYOUT PLAN

Drawing Number	Rev
PLAT.01.02-02	2



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N

LEGEND

- ENVIRONMENTAL PERMIT BOUNDARY
- 1000m OFFSET BOUNDARY
- DOMESTIC DWELLINGS
- COMMERCIAL / INDUSTRIAL PREMISES
- GRASS / SHRUB
- TREES / WOODS
- ROAD FEATURES
- SURFACE WATER FEATURES
- LLAY BOG SITE OF SPECIAL SCIENTIFIC INTEREST
- BLAST POND LOCAL WILDLIFE SITE
- RHYDYN HALL GRASSLAND LOCAL WILDLIFE SITE
- GREAT CRESTED NEWTS DESIGNATED HABITAT AREA

HOURLY MEAN WIND ROSE FOR HAWARDEN AIRPORT

Met Office

NSR: 3342 E 3647 N
SEASON: ANNUAL

ALTITUDE: 11 metres AMSL
Period of data: Jan 2010 - Dec 2019

87,227 OBSERVATIONS
0.9% CALM
0.0% VARIABLE

1-10 11-16 17-27 28-33 >33
Hourly mean wind speed (knots)

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Rev	Date	Details	Chkd

Environmental Compliance Ltd.

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Main Avenue
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Client

PLATTS

EST 1973
AGRICULTURE

Date	Scale	Drawn by	Checked by	Approved by
17/03/2023	1:7.5K @ A3	GTB	HR	SM

Drawing Status

FINAL

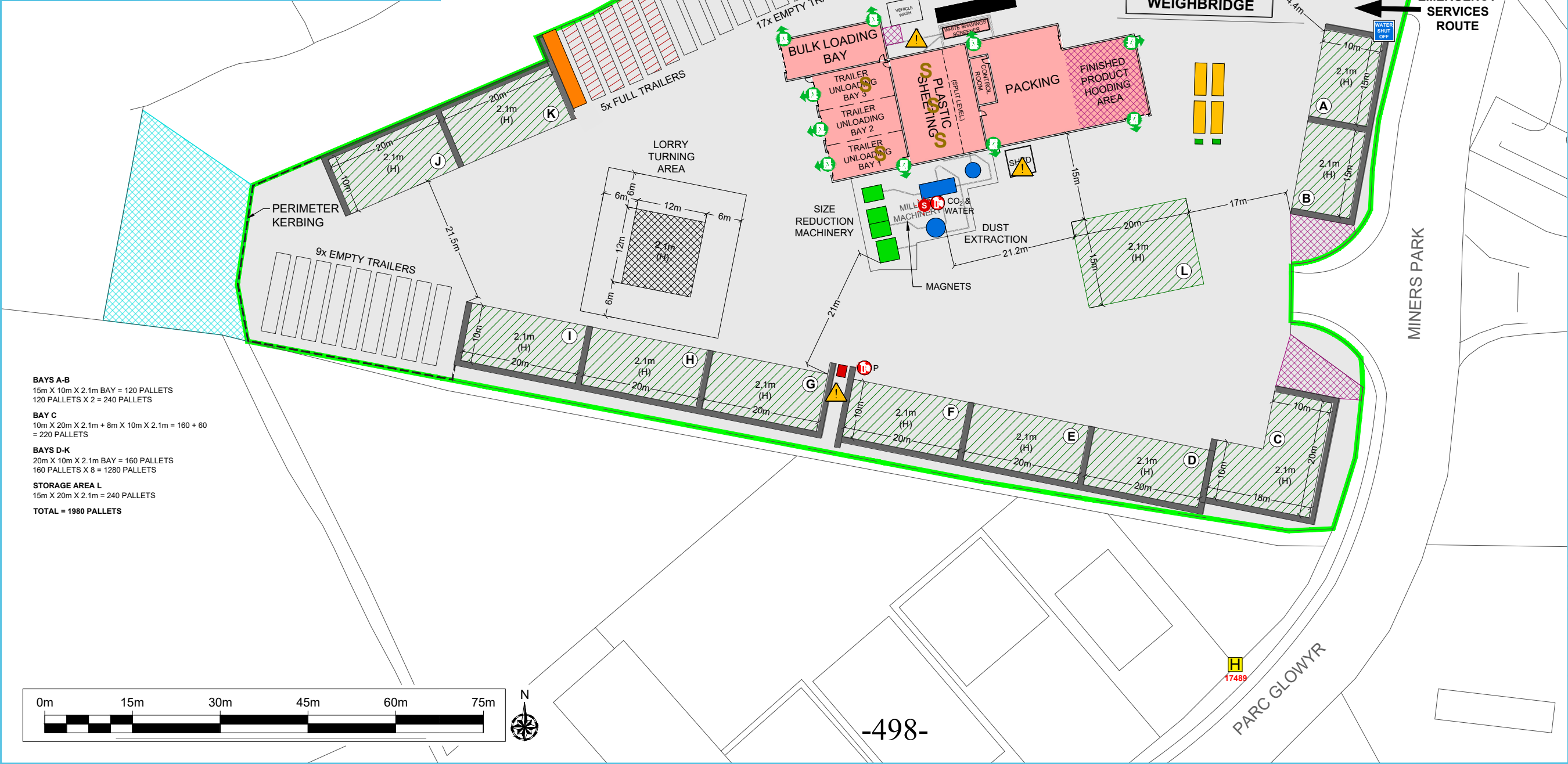
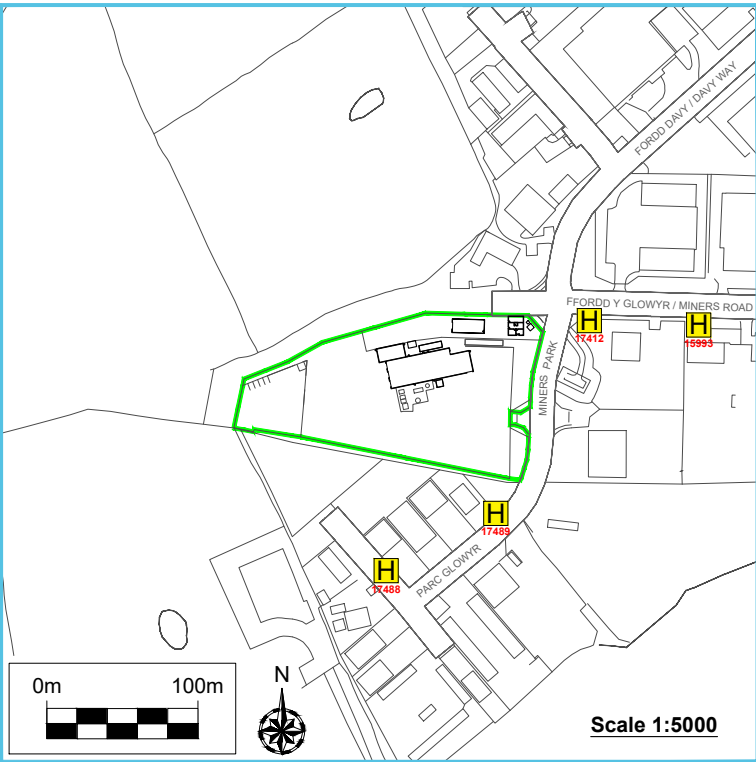
Project Title

ENVIRONMENTAL PERMIT APPLICATION
PLATTS AGRICULTURE LIMITED
MINERS PARK, LLAY INDUSTRIAL ESTATE
LLAY
WREXHAM

Drawing Title

SENSITIVE RECEPTOR PLAN

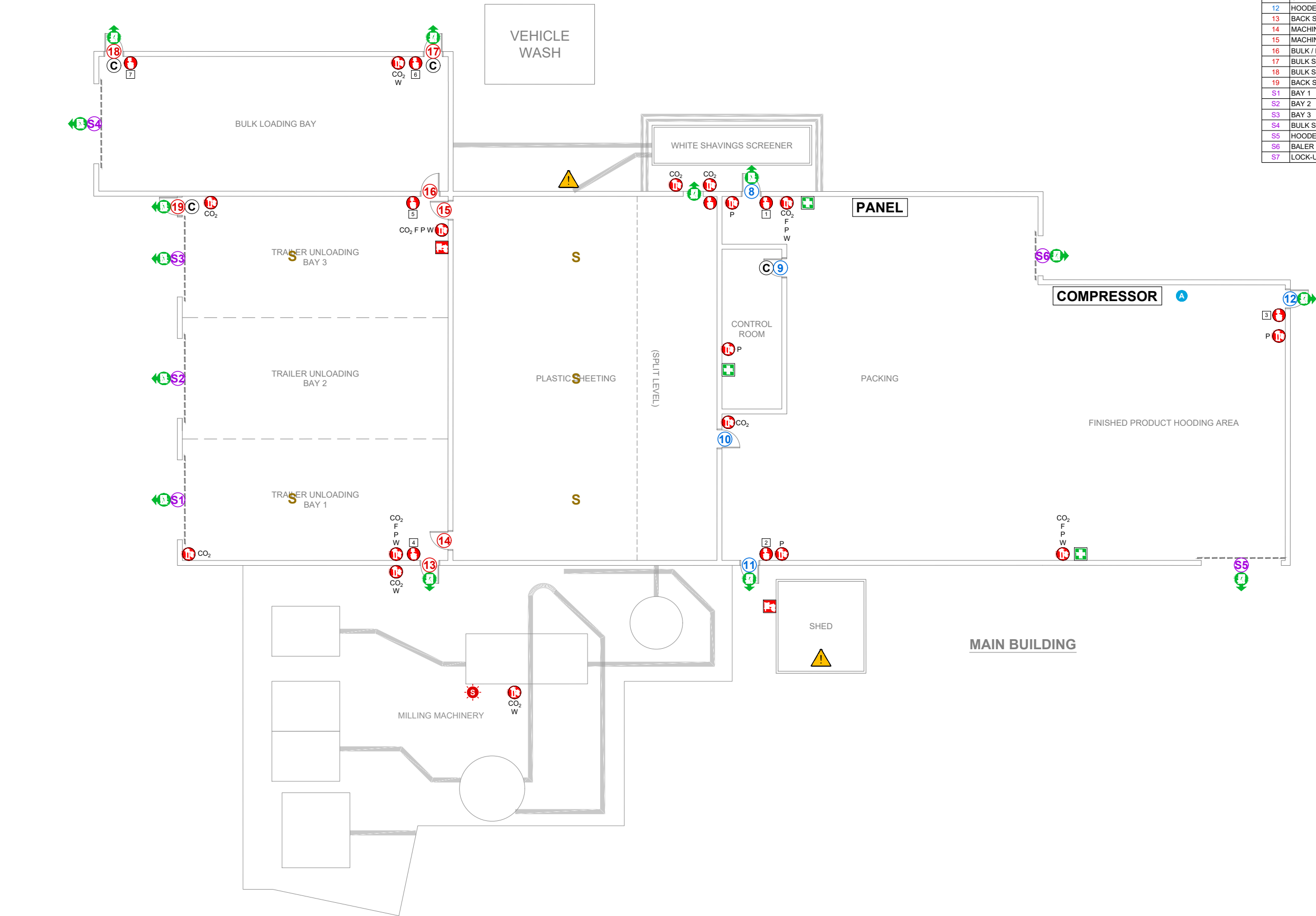
Drawing Number	Rev
PLAT.01.02-03	-



- LEGEND**
- ENVIRONMENTAL PERMIT BOUNDARY
 - CONCRETE
 - BUILDINGS
 - TRAILERS CONTAINING UNPROCESSED MATERIAL
 - PROCESSED MATERIAL (BALES)
 - BUNDED RED DIESEL TANK
 - NON-CONFORMING WASTE QUARANTINE AREA
 - EXTRACTION TRAILER - 13.7m(L) X 2.5m(W)
 - MOBILE PLANT STORAGE AREA
 - GREAT CRESTED NEWT HABITAT AREA
 - 5.5x2x2.5m SKIP (3 no.) + 1 tonne container
 - 660L BINS
 - FPP QUARANTINE AREA
 - IGNITION SOURCE - GAS BOTTLES
 - COSHH STORAGE
 - HIGH LEVELS OF SAWDUST
 - LOCATION OF FIRE PREVENTION PLAN
 - ELECTRICAL SHUT OFF POINT
 - WATER SHUT OFF POINT
 - FIREWATER CONTAINMENT EQUIPMENT
 - FIRE SUPPRESSION SYSTEM
 - FIRE EXTINGUISHER
 - FIRE EXIT
 - EMERGENCY ASSEMBLY POINT
 - FIRE HYDRANT

NOTE
FOR DETAILED MAIN FACTORY FIRE PREVENTION AND MITIGATION INFO SEE DRAWINGS PLAT.01.02-05a & PLAT.01.02-05b

Rev	Date	Details	Chkd
01	09/05/2023	1:750 @ A3	GTB
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03	09/05/2023	1:750 @ A3	GTB
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100	09/05/2023	1:750 @ A3	GTB



DOOR SCHEDULE	
NO.	LOCATION
8	WASHBAY
9	CONTROL ROOM
10	MACHINE ROOM
11	CHIPPER
12	HOODER
13	BACK SHED / CHIPPER
14	MACHINE ROOM
15	MACHINE ROOM
16	BULK / BACK SHED
17	BULK SHED
18	BULK SHED
19	BACK SHED BAY 3
S1	BAY 1
S2	BAY 2
S3	BAY 3
S4	BULK SHED
S5	HOODER
S6	BALER 3
S7	LOCK-UP

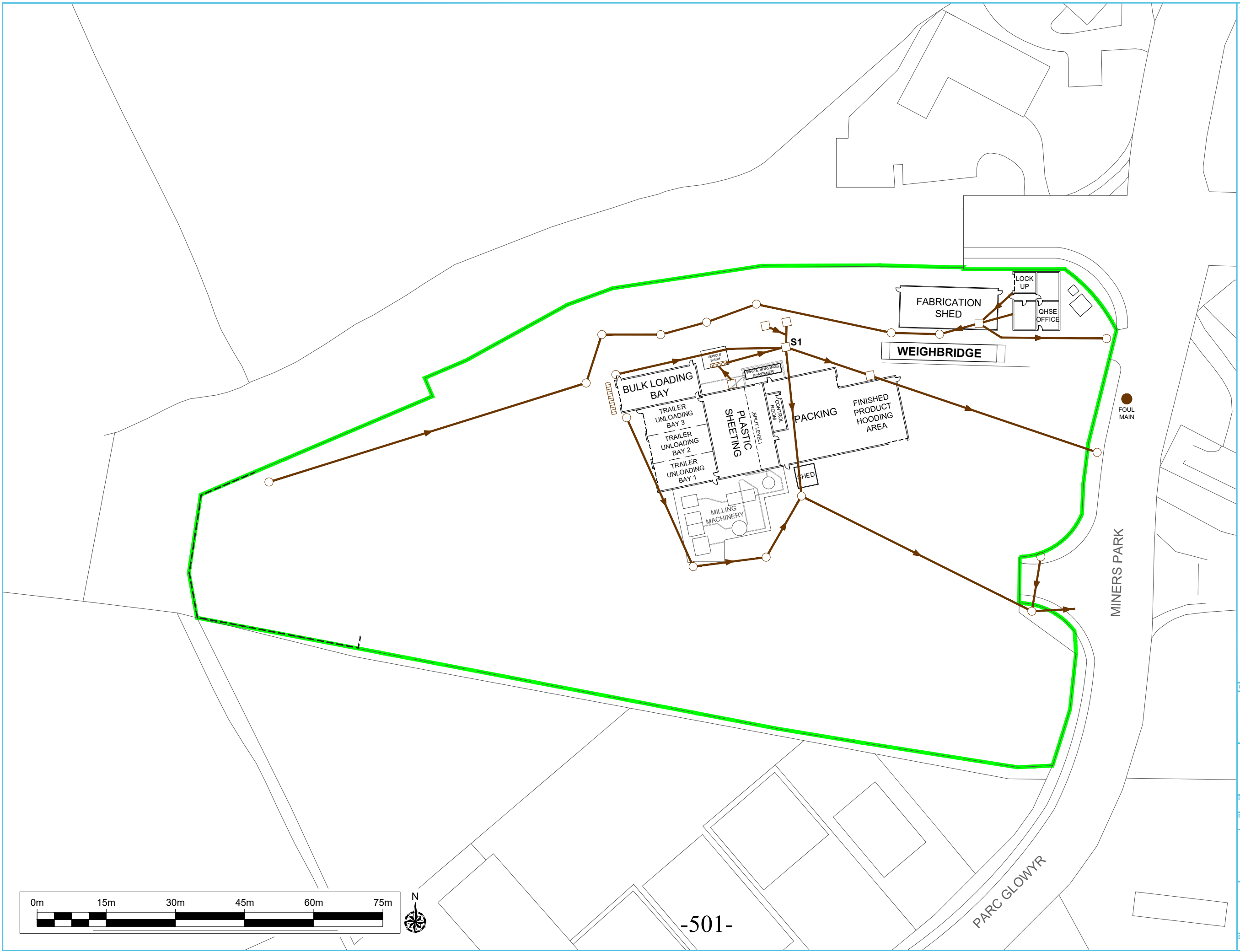
- LEGEND**
- COSHH STORAGE
 - HIGH LEVELS OF SAWDUST
 - FIREWATER CONTAINMENT EQUIPMENT
 - FIRE SUPPRESSION SYSTEM
 - FIRE ALARM BREAK GLASS
 - FIRE EXTINGUISHER
WATER = W
POWDER = P
CARBON DIOXIDE = CO₂
FOAM = F
 - FIRE HOSE
 - FIRE BLANKET
 - FIRST AID KIT
 - AIR RECEIVER
 - FIRE EXIT
 - SELF CLOSING DOOR
 - FIRE DOOR
 - TELEPHONE POINT
 - PACKING & HOODER DOORS
 - BACK & BULK SHED DOORS
 - SHUTTER DOORS

NOTE
FOR EXTERNAL FIRE PREVENTION & MITIGATION INFO
SEE DRAWING PLAT.01.02-04



Rev	Date	Details	Chkd
Environmental Compliance Ltd. ecl Unit G1 The Willowford Main Avenue Treforest Industrial Estate Pontypridd, CF37 5YL Tel: 01443 841760 Fax: 01443 841761 Email: info@ed.world Web: www.ed.world			
Client PLATTS AGRICULTURE			
Date 10/05/2023	Scale 1:200 @ A3	Drawn by GTB	Checked by SM Approved by SM
Drawing Status FINAL			
Project Title ENVIRONMENTAL PERMIT APPLICATION PLATTS AGRICULTURE LIMITED MINERS PARK, LLAY INDUSTRIAL ESTATE LLAY WREXHAM			
Drawing Title FIRE PREVENTION AND MITIGATION PLAN MAIN BUILDING			
Drawing Number PLAT.01.02-05a			Rev -

- LEGEND**
- ENVIRONMENTAL PERMIT BOUNDARY
 - FOUL DRAINAGE
 - MANHOLE
 - INSPECTION COVER
 - INTERCEPT PIT
 - ACO / ECO DRAIN
 - S1** EMISSION POINT TO SEWER



Rev	Date	Details	Chkd
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Environmental Compliance Ltd.
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Fax: 01443 841761
Email: info@ed.world
Web: www.ed.world



Date	Scale	Drawn by	Checked by	Approved by
09/05/2023	1:750 @ A3	GTB	HR	SM

Drawing Status

FINAL

Project Title
ENVIRONMENTAL PERMIT APPLICATION
PLATTS AGRICULTURE LIMITED
MINERS PARK, LLAY INDUSTRIAL ESTATE
LLAY
WREXHAM

Drawing Title
DRAINAGE PLAN

Drawing Number	Rev
PLAT.01.02-06	-

APPENDIX II

PLANNED PREVENTATIVE MAINTENANCE REGIME

Equipment Maintenance Schedule

Planned Preventative Maintenance	Item has programmed pre-use checks	Operator Daily Check	Frequency of inspections
Baler 1		YES	500000 Bales
Baler 2		YES	500000 Bales
Baler 3		YES	500000 Bales
Robot 1		YES	500000 Bales
Robot 2		YES	500000 Bales
Hooder		YES	Annually
Grecon spark detection		YES	6 monthly
Dust extraction		YES	Annually
Hammer mill 1		YES	Daily
Hammer mill 2		YES	Daily
FLT 1	YES		Annually
FLT 2	YES		Annually
FLT 3	YES		Annually
Interceptor			Quarterly
Compressor			Annually
Telehandler		YES	Serviced every two weeks; LOLER annually
Gehl		YES	Serviced every two weeks
Shunter		YES	Annually
Nifty lift		YES	6 monthly
Hook loader		YES	Annually
Hook loader		YES	Annually
Shavings screener			Annually
Fire alarm			Annually
Power washer		YES	Annually

APPENDIX III BLANK RISK ASSESSMENT/ PERMIT TO WORK



AGR F032 PERMIT TO WORK - HOT WORK

Permit No:		APPLICABLE FOR; CUTTING, WELDING, GRINDING, SOLDERING, BRAZING, BLOW LAMP OR TORCHES or the use of any equipment producing HEAT, SPARKS OR NAKED FLAME					
Location and description of work							
Permit issued by: (Chris Gee; Production Manager, Alison Fuller; QHSE Manager or a Director)							
Name		Position		Signed		Date & Time	
Valid from:	Date		Time	Valid to:	Date		Time
Health & Safety Checklist - before work commences							YES or NO N/A
Has a Risk Assessment been carried out specifically for this work?							
Has a Safe Method of Work Statement been produced specifically for this work?							
Have persons been informed of the details of the Risk Assessment and Safe Method of Work Statement specific to this work?							
Have combustible materials and flammable liquids or gases been identified and removed from the area or protected?							
Where work is above floor level have non-combustible curtains or sheets been suspended beneath the work to collect sparks?							
Is sufficient fire-fighting equipment in place and persons able to use it?							
Is all equipment in safe condition and persons trained to use it?							
Has the contractor discussed any isolation requirement for smoke detectors and have safe isolation procedures been implemented?							
Are there emergency procedures in place?							
Are there arrangements for the work area to be watched for hot spots/fire/smouldering for an hour after hot work has ceased?							
If any of the above questions have been answered 'NO' hot work must not be permitted							
Other control measures implemented;							
Permit Receipt:							
Name		Signature		Date		Time	
Name		Signature		Date		Time	
Name of supervisor responsible for monitoring the safety of hot work for this task							
Name		Signature		Date		Time	
Permit Clearance:							
Supervisor signature to confirm work has been completed as specified and area left in safe condition							
Name		Signature		Date		Time	
Permit Cancellation: (Chris Gee; Production Manager, Alison Fuller; QHSE Manager or a Director)							
Name of permit issuer to confirm work completed as intended and permit is now cancelled							
Name		Signature		Date		Time	

APPENDIX IV

SITE INFORMATION AND KEY CONTACT DETAILS

Site Information and Key Contact Details

Operator	Platts Agriculture Limited		
Site Address	Miners Park, Llay Industrial Estate, Llay, Wrexham, LL12 0PJ.		
Name	Description	Contact Details (Office Hours)	Contact Details (Out of Hours)
Internal			
Caroline Platt	Managing Director		
Chris Whittaker	Director		
Office	General Enquiries	01978 854666	-
External – Emergency Services			
Fire Rescue Service – North Wales Fire and Rescue Services, Wrexham LI13 7YU	Non-Emergency	0300 123 3247	
	Emergency Only	999	
Police – North Wales Police, Davy Way, Llay, Wrexham, LL12 0PG	Non-Emergency	0300 330 0101 or 101	
	Emergency Only	999	
Medical Assistance	Non-Emergency – NHS Helpline	0845 46 47	
	Emergency Only	999	
External - Regulators			
Natural Resources Wales	Emergency (24 hour hotline)	0300 065 3000 - Option 1	
	General Enquiries (Mon-Fri 9am-5pm)	0300 065 3000	
Health and Safety Executive	Incident Contact Centre	0345 300 9923	
External – Key Services			
Enviroclear Site Services Limited	Emergency Tanker Response	01978 840228	
Hafren Dyfrdwy	Water Supplier Emergency Hotline	0800 085 8033	
Welsh Water	Sewerage Undertaker Emergency Hotline	0800 085 3968	
Energy Supplier	Emergency Hotline	105	
Grainger Fire and Security	Fire Safety and Security Contractor	0151 220 4068	-
Environmental Compliance Ltd	Environmental Consultant	01443 841760	-

Site Information and Key Contact Details (Cont.)

Operator	Platts Agriculture Limited	
Site Address	Miners Park, Llay Industrial Estate, Llay, Wrexham, LL12 0PJ.	
Name	Description	Contact Details (Office Hours)
External – Nearby Sensitive Receptors		
NPC Commercials Limited	Neighbouring Units	01978 255892
Llay Cafe		01978 856556
Quantum Traffic Management		01978 280144
Platts Commercial Services		01978 857050
Wrexham Truck and Trailer Limited		01978 855028
Aston Jones Limited		01978 856985
Clwyd Injection Services		01978 856677
Hayakawa International UK Limited		01978 853366
Miners Road Industrial Estate – General Enquiries		01978 667000

APPENDIX V

FIRE HYDRANT CORRESPONDENCE

Archived: 21 May 2024 15:31:21
From: Dave Bithell
Sent: Tue, 21 Mar 2023 15:56:11 +0000ARC
To: Sara Maile
Cc: Andrew McLaren
Subject: RE: Hydrant location
Sensitivity: Normal

Afternoon Sara,

I can confirm that they conform to British Standards 750:2012.

David Bithell, M.B.E.
Peiriannydd hydrant/Hydrant Engineer
Symudol/Mobile. 07787 578 537

Am archwiliad diogelwch yn y cartref, ffoniwch 0800 1691234, e-bostiwch cfs@nwales-fireservice.org.uk neu ymwelwch â www.gwastan-gogcymru.org.uk.

For a free home safety check, please call 0800 1691234, e-mail cfs@nwales-fireservice.org.uk or visit www.nwales-fireservice.org.uk.

Rydym yn croesawu gohebiaeth yn y Gymraeg a'r Saesneg - byddwn yn ymateb yn gyfartal i'r ddwy ac yn ateb yn eich dewis iaith heb oedi.

We welcome correspondence in Welsh and English - we will respond equally to both and will reply in your language of choice without delay.

From: Sara Maile <[REDACTED]>
Sent: 20 March 2023 10:38
To: Dave Bithell [REDACTED]
Cc: Andrew McLaren [REDACTED]
Subject: RE: Hydrant location

Hi David,

Are you also able to confirm that the hydrants conform to British Standard 750:2012?

Many thanks,

Sara

Sara Maile
Associate Consultant
[REDACTED]



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Please consider the environment before printing this e-mail

From: Sara Maile
Sent: Monday, March 20, 2023 10:32 AM
To: Dave Bithell [REDACTED]
Cc: Andrew McLaren [REDACTED]
Subject: RE: Hydrant location

Morning David,

Thank you for the confirmation and providing the inspection date. It is very much appreciated.

Kind regards,

Sara

Sara Maile
Associate Consultant



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Please consider the environment before printing this e-mail

From: Dave Bithell <[REDACTED]>
Sent: Monday, March 20, 2023 8:46 AM
To: Sara Maile [REDACTED]
Cc: Andrew McLaren [REDACTED]
Subject: FW: Hydrant location

Morning Sara,
I can confirm that hydrants 17488, 17489, 17412 and 15993 were inspected on the 20/1/2023.

Regards
David

David Bithell, M.B.E.
Peiriannydd hydrant/Hydrant Engineer
Symudol/Mobile. [REDACTED]

Am archwiliad diogelwch yn y cartref, ffoniwch 0800 1691234, e-bostiwch cfs@nwales-fireservice.org.uk neu ymwelwch â www.gwastan-gogcymru.org.uk.

For a free home safety check, please call 0800 1691234, e-mail cfs@nwales-fireservice.org.uk or visit www.nwales-fireservice.org.uk.

Rydym yn croesawu gohebiaeth yn y Gymraeg a'r Saesneg - byddwn yn ymateb yn gyfartal i'r ddwy ac yn ateb yn eich dewis iaith heb oedi.

We welcome correspondence in Welsh and English - we will respond equally to both and will reply in your language of choice without delay.

From: Sara Maile [REDACTED]
Sent: 14 March 2023 17:22
To: Dave Bithell [REDACTED]
Cc: Steven Dixon [REDACTED]; Kath Grives [REDACTED]; Hannah Richardson [REDACTED]
Subject: RE: Hydrant location

Hi Dave,

Further to your correspondence with my colleague Hannah back in 2021 (see below and attached), are you kindly able to confirm that the hydrants below remain inspected within the last three years?

Many thanks,

Sara

Sara Maile
Associate Consultant



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Please consider the environment before printing this e-mail

From: Dave Bithell [REDACTED]
Sent: Wednesday, May 5, 2021 8:40 PM
To: Hannah Richardson [REDACTED]
Cc: Steven Dixon [REDACTED]; Kath Grives <[REDACTED]>
Subject: RE: Hydrant location

Evening Hannah,

As requested, I have checked your grid reference 332077, 356370 now marked up in blue on the first screen shot attached. The second screen shot is of five hydrants located around this facility, they have been inspected in the past three years:

Hydrant number 15992 Grid ref 332248, 356551

Hydrant number 17412 Grid ref 332197, 356420

Hydrant number 15993 Grid ref 332268, 356420

Hydrant number 17489 Grid ref 332137, 356284

Hydrant number 17488 Grid ref 332062, 356250

Please contact me if you require any further assistance.

David

David Bithell, M.B.E.
Peiriannydd hydrant/Hydrant Engineer
Symudol/Mobile. [REDACTED]

Am archwiliad diogelwch yn y cartref, ffoniwch 0800 1691234, e-bostiwch cfs@nwales-fireservice.org.uk neu ymwelwch â www.gwastan-gogcymru.org.uk.

For a free home safety check, please call 0800 1691234, e-mail cfs@nwales-fireservice.org.uk or visit www.nwales-fireservice.org.uk.

Rydym yn croesawu gohebiaeth yn y Gymraeg a'r Saesneg - byddwn yn ymateb yn gyfartal i'r ddwy ac yn ateb yn eich dewis iaith heb oedi.

We welcome correspondence in Welsh and English - we will respond equally to both and will reply in your language of choice without delay.

From: Steven Dixon [REDACTED]
Sent: 05 May 2021 15:14
To: Dave Bithell <[REDACTED]>
Subject: FW: Hydrant location

Dave, further information in relation to the email below:

Contact Us Request:
Name: Hannah Richardson
Email: [REDACTED]
Subject: General Enquiry

Country:Wrexham

Address:

Telephone [REDACTED]

Enquiry details: Fire Hydrant location: As part of the FPP for an environmental permit application I am seeking the location of the closest adopted fire hydrant to the grid reference 332077 356370. If you could provide a grid reference for the nearest adopted hydrant I would be very grateful. Further if you could please confirm the hydrant conforms to British Standard 750:2012 and provide the frequency of inspection of it. e.g. 3 year rolling rota. Thank you, Hannah Richardson
Environmental Compliance Limited

If you could action this as soon as is practicable, that would be much appreciated.

Please let me know if you have any queries.

Diolch,

Steven Dixon

Rheolwr Cefnogaeth Gweithgareddau/ Operations Support Manager
Gwasanaeth Tân ac Achub Gogledd Cymru/North Wales Fire and Rescue Service

[REDACTED]

steven.dixon@gwastan-gogcymru.org.uk / steven.dixon@nwales-fireservice.org.uk

- Rydym yn croesawu gohebiaeth yn y Gymraeg a'r Saesneg - byddwn yn ymateb yn gyfartal i'r ddwy ac yn ateb yn eich dewis iaith heb oedi.

We welcome correspondence in Welsh and English - we will respond equally to both and will reply in your language of choice without delay.



Gwnewch yn si\u00fau373 wr eich bod yn profi'ch larwm mwg yn rheolaidd. Os nad oes gennych larwm, neu os ydy'ch larwm wedi torri, ffoniwch **0800 169 1234**, anfonwch e-bost i drc@gwastan-gogcymru.org.uk neu ewch i www.gwastan-gogcymru.org.uk am gyngor yngl\u00fau375 yn â beth i'w wneud nesaf.

Please make sure that you regularly check your smoke alarm. If you do not have one, or find that the one that you do have is not working, call **0800 169 1234**, e-mail cfs@nwales-fireservice.org.uk or visit www.nwales-fireservice.org.uk for advice on what to do next.

From: Steven Dixon

Sent: 05 May 2021 14:22

To: Dave Bithell <[REDACTED]>

Subject: FW: Hydrant location

Dave,

Are you able to deal with the email below on my behalf.

Many Thanks,

Steven Dixon

Rheolwr Cefnogaeth Gweithgareddau/ Operations Support Manager
Gwasanaeth Tân ac Achub Gogledd Cymru/North Wales Fire and Rescue Service

[REDACTED]

steven.dixon@gwastan-gogcymru.org.uk / steven.dixon@nwales-fireservice.org.uk

- Rydym yn croesawu gohebiaeth yn y Gymraeg a'r Saesneg - byddwn yn ymateb yn gyfartal i'r ddwy ac yn ateb yn eich dewis iaith heb oedi.

We welcome correspondence in Welsh and English - we will respond equally to both and will reply in your language of choice without delay.



Please make sure that you regularly check your smoke alarm. If you do not have one, or find that the one that you do have is not working, call **0800 169 123**. e-mail cfs@nwales-fireservice.org.uk or visit www.nwales-fireservice.org.uk for advice on what to do next.

From: Sharon Bouckley <[REDACTED]>
Sent: 05 May 2021 13:36
To: Steven Dixon [REDACTED]
Subject: Fwd: Hydrant location

Steve
For your attention. I would do it but I'm off this week.

Sharon

Sent from Workspace ONE Boxer

----- Forwarded message -----

From: Kath Grives [REDACTED]
Date: 5 May 2021 13:23
Subject: Hydrant location
To: Sharon Bouckley [REDACTED]
Cc:
Please phone Hannah Richardson of Environmental Compliance Ltd

Thanks

Kind Regards

Kath Grives

Gweinyddwraig Siroedd Fflint a Wrecsam/
Flintshire and Wrexham County Administrator
Gwasanaeth Tân ac Achub Gogledd Cymru/North Wales Fire & Rescue Service
Ffôn / [REDACTED]



Please make sure that you regularly check your smoke alarm. If you do not have one, or find that the one you do have is not working, call **0800 169 1234**, e-mail cfs@nwales-fireservice.org.uk or visit www.nwales-fireservice.org.uk for advice on what to do next.

Cyfrinachedd: Mae'r neges e-bost hon ac unrhyw ffeiliau a drosglwyddir gyda hi, yn breifat ac fe allent fod yn cynnwys gwybodaeth sy'n gyfrinachol neu'n gyfreithiol-freintiedig. Os byddwch yn derbyn y neges hon trwy gamgymeriad, a fydddech mor garedig â rhoi gwybod inni a chael gwared arni o'ch system ar unwaith.

Ymwadiad: Fe allai e-bostio trwy'r We fod yn agored i oedi, rhyng-gipio, peidio â chyrraedd, neu newidiadau heb eu hawdurdodi. Felly, nid yw'r wybodaeth a fynegir yn y neges hon yn cael cefnogaeth GTAGC oni bai fod cynrychiolydd awdurdodedig, yn annibynnol ar yr e-bost hwn, yn hysbysu ynghylch hynny. Ni ddylid gweithredu o ddibynnu ar gynnwys yr e-bost hwn yn unig.

Monitro: Bydd GTAGC yn monitro cynnwys e-byst at ddiben atal neu ddarganfod troseddau, a hynny er mwyn sicrhau diogelwch ein systemau cyfrifiadurol a gwirio cydymffurfiaid â'n polisïau.

Gwasanaeth Tân ac Achub Gogledd Cymru
Parc Busnes Llanelwy, Sir Dainbych. LL17 0JJ

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North Wales Fire and Rescue Service
St Asaph Business Park, Denbighshire. LL17 0JJ



AGR D002

PLATTS GROUP Environmental Management System Manual

Department	QHSE	Authorised by	Caroline Platt
Author	Alison Fuller	Date of authorisation	7/4/23
Date Reviewed	24/04/2024	Issue No.	6

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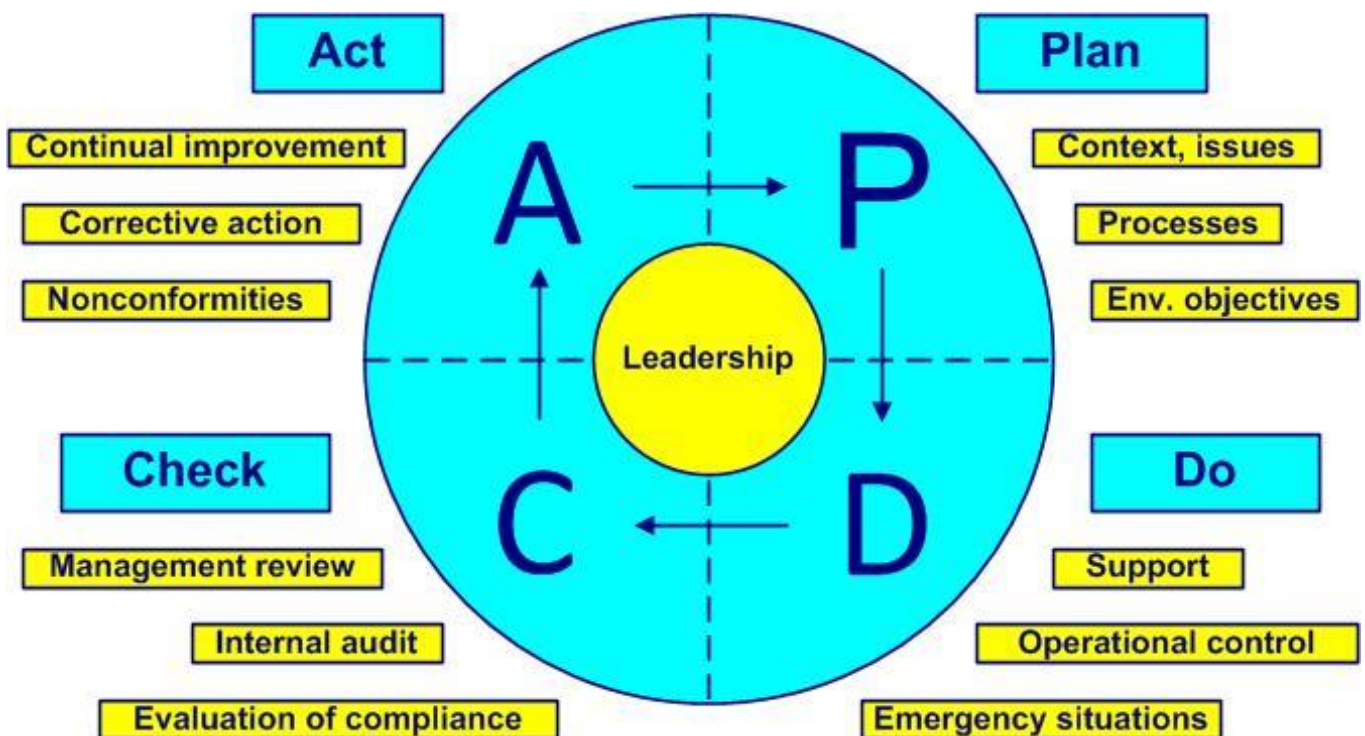
1.0 Introduction

Platts Group has developed and implemented an Environmental Management system (EMS) which uses BS8555 as a framework that allows our organisation to document and improve our environmental practices in order to better satisfy the needs and expectations of our customers, stakeholders and interested parties. Platts Group is committed, through our environmental policies, to the operation of an EMS that elicits the following intended outcomes;

1. Enhance environmental performance, by protecting the environment by preventing or mitigating adverse environmental impacts
2. Fulfil compliance obligations by mitigating potential adverse environmental effects of environmental conditions
3. Achieve environmental objectives by controlling or influencing the way our organisations products and services are designed, manufactured, distributed, consumed and disposed.

The figure below illustrates our methodology for the development of our EMS, using the Plan, Do, Check, Act process approach, to implement and deliver management system objectives, stakeholder requirements and environmental compliance.

Figure 1



Certification to BS8555 standard will help achieve these intended outcomes and demonstrates that the EMS is effective, provides value for the environment, Platts Group and its interested parties. Our EMS addresses and supports our wider strategies for the design, development, manufacturing, installation, and service of our products.

The scope of this EMS is all activities and services of Platts Group, Miners Road, Llay Industrial Estate, Llay, Wrexham LL12 0PJ.

Platts Group manufactures animal bedding products and cubicle conditioner from pre-consumer by-product wood residues from the wood manufacturing industry. The products are designed to keep animals comfortable and clean and help to reduce lameness and mastitis in dairy cows and delivered throughout the UK as bales or bulk.

This EMS manual is used to familiarise our customers, interested parties, or individuals with the controls that have been implemented and to assure them that the integrity of our EMS is maintained and is focused on meeting its intended outcomes.

This manual also describes the structure and interactions of our EMS and confirms the responsibilities of personnel who develop and implement it. The manual also references procedures, processes and activities that comprise our EMS.

2.0 Organisational Context

Platts Group is committed to defining its position in the marketplace and understanding how relevant factors arising from internal and external issues influence our strategic direction, our organisational context, or the ability of our EMS to achieve its intended outcomes. Such issues include factors that are capable of being affected by, or capable of affecting our organisation. Broadly these issues are defined as;

1. Internal Issues – conditions relating to our organisational activities, products, services, strategic direction, culture, people, knowledge, processes and systems. Using SWOT analysis provides our organisation with a framework for reviewing and evaluating our strategies, and the position and direction of our organisation, business propositions and other ideas.
2. External Issues – conditions related to cultural, social, political, legal, regulatory, financial, technological, economic, competition at local or national levels.
3. Environmental Issues – conditions related to climate change, air quality, water quality, land use, natural resource availability or biodiversity that can either affect our organisations purpose, or be affected by our environmental aspects and impacts, which Platts Group must manage.

Documented Information

- [AGR D050 Internal & External Issues](#)
- [AGR D051 Process Flow Identification](#)

3.0 Relevant Interested Parties

Platts Group recognizes that we have a unique set of interested parties whose needs and expectations change and develop over time. Only a limited set of requirements are relevant to our EMS, and which are considered and managed as a compliance obligation. The criteria for Platts Group compliance obligations include the following parameters;

1. All relevant legal requirements
2. All corporate requirements imposed by senior management of our organisation
3. All relevant requirements of interested parties that our organisation decides to comply with, these may be contractual or voluntary

Figure 2: Internal and External Interested Parties



Documented Information

- [AGR D052 Needs & Expectations of Interested Parties](#)

4.0 PLAN

Establishing environmental goals and processes that are necessary to achieve results in conformity with the organisation's environmental policy

4.1 Environmental Review

Documented Information

- [AGR D005 Platts Agriculture Environmental Review](#)

Located in Integrated Management System//1.0 Commitment to QHSE Management/QHSE Reviews

A baseline Environmental Review has been developed in February 2022 which will be used to develop targets and evidence continual improvement. This is updated annually to reflect changes to the business.

4.2 Environmental Policy

Documented Information

- [AGR POL 001 Platts Group Environmental Policy](#)

Located in Integrated Management System/4.0 QHSE Management Programme/4.1 Company Policies

An Environmental Policy has been developed to meet the requirements of the BS8555 standard and contains a commitment to protection of the environment, pollution prevention, continual improvement, legal compliance and specific improvement objectives to monitor key performance indicators and reduce the carbon footprint and resource use.

4.3 Environmental Aspects

Documented Information

- [AGR D011 Environmental Aspects Register](#)

Located in Integrated Management System/3.0 Managing QHSE Impacts

The register has been developed to identify all environmental aspects within the business and the potential impacts of these aspects.

An environmental aspect is an element of an organisation's activities, products, and services that interact with the environment. These can include discharges to water, emissions to air, waste and use of natural resources and materials.

An environmental impact is defined as any change to the environment, whether adverse or beneficial, resulting from a facility's activities, products, or services. It is the effect that people's actions have on the environment.

Each impact is then given a score dependant on likelihood and severity of environmental harm. Impacts with scores between 1 to 4 are classed as low significance, between 5 and 10 as medium significance and between 12 and 25 high significance.

Impacts of high significance take higher priority in objective and target setting and policy commitments. The register includes any controls implemented to reduce an impacts significance.

4.4 System Procedures

- ✓ AGR P001 Fire Emergency Procedure Production Facility
- ✓ AGR P002 Fire Emergency Procedure Parkleigh Office
- ✓ AGR P003 Spill Emergency
- ✓ AGR P004 General Emergency
- ✓ AGR P005 Identification of Aspects and Impacts
- ✓ AGR P006 Fire Alarm Test
- ✓ AGR P007 Managing Compliance Obligations
- ✓ AGR P008 Waste Management
- ✓ AGR P009 Monitoring & Measuring
- ✓ AGR P010 Visual Quality Testing
- ✓ AGR P011 Communication
- ✓ AGR P012 Non-compliance
- ✓ AGR P013 Incoming Material
- ✓ AGR P014 Site Store Equipment & Consumables usage
- ✓ AGR P015 Accident / incident Flowchart
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- ✓ AGR P023 Control of documents
- ✓ AGR P024 Energy Saving
- ✓ AGR P025 Site Induction
- ✓ AGR P026 Product Storage and tracking

4.5 Environmental Objectives & Targets

Documented Information

- [AGR D012 Business Objectives and Targets Plan](#)

Located in Integrated Management System /3.0 Managing QHSE Impacts

This plan is developed from environmental impacts identified in the Environmental Review and committed to in the Environmental Policy. Objectives are set for each impact with a target amount and date identified. The plan is reviewed monthly at the Green Team meeting and targets which have been reached are archived and new targets area added.

4.6 Register of Compliance Obligations

A register of all the legal and other obligations that Platts are required to meet. The register includes an explanation of the legislation, the relevance to the organisation and describes how evidence of compliance can be demonstrated. The procedure details how this register should be maintained to ensure that legislation, standards, guidance and codes of practice are adhered to.

Documented Information

- [AGR D006 Register of Compliance Obligations](#)

Located in Integrated Management System /2.0 Understanding QHSE Responsibilities/2.1 Register of Compliance Obligations

- [AGR P007 Managing Compliance Obligations Procedure](#)

Located in Integrated Management System /4.0 QHSE Management Programme/4.3 System Procedures

4.7 Risk Assessments

A series of risk assessments has been developed to cover a range of issues, including site operations, maintenance and accidents. The register maintains a record of all available risk assessments and the Safe System of Work documents and the date of review.

Documented Information

- [AGR D037 Platts Group RA and SSW Register](#)

Located in Health & Safety / Platts Agriculture / Part 2 – H&S Management / HSA – 901 Risk Assessment

Risk assessments can be located under the following links.

- [Factory & Office](#)
- [Garage](#)
- [Transport](#)

4.8 Dust Management Plan

Prepared by ECL as part of the Environmental Permit application, this plan addresses the possibility of fugitive emissions to air arising from the activities on site and the mitigation measures in place. The DMP should be reviewed annually to ensure the continuing effectiveness of the plan taking into account records, complaints, and any recent sensitive developments on neighbouring land. The plan would be amended as necessary including any changes to control measures.

Documented Information

- [ECL Ref: PLAT.01.02/DMP](#)

4.9 Noise Management Plan

Prepared by ECL as part of the Environmental Permit application, this plan provides a management framework of proactive and reactive measures to manage and control noise emissions from the factory. This proactive approach will facilitate the ongoing development of operational procedures and controls as part of a commitment to continual environmental improvement. Reactive procedures are documented in the Complaints Procedure in the event of any noise related complaints to ensure corrective actions are implemented.

Documented Information

- [ECL Ref: PLAT.01.02/NMP](#)
- Daily Check sheets include noise levels iAuditor form
- 6 Monthly noise monitoring iAuditor form
- [AGR P009 Environmental Monitoring Procedure](#)

4.10 Fire Prevention Plan

This FPP document follows NRW's FPP guidance and details the required mitigation and management methods to prevent a fire of combustible materials stored at the Facility. This FPP identifies measures to be employed to reduce the likelihood of fires at the Facility. In addition, the plan identifies measures to be employed in the event of a fire in order to minimise the pollution caused to the environment or harm to human health.

The Fire Prevention Plan will form part of the EMS and will be reviewed and updated annually or if any of the following occur:

- a fire event at the site;
- a change or review of legislation;
- if the site is instructed to do so by NRW
- if there are changes to the listed contacts contained within the document.

Documented Information

- [ECL Ref: PLAT.01.02/FPP](#)
- [AGR P001 Fire Emergency Procedure Production Facility](#)
- [AGR P002 Fire Emergency Procedure Parkleigh Office](#)
- [GAR P003 Fire Emergency Procedure garage site](#)

4.11 Business Continuity

A Business Continuity Plan is a working document to provide guidance, contacts and instruction in the event of emergencies or unexpected situations that may impact upon continuity of the business.

- [AGR D025 Business Continuity Plan](#)

A site closure plan has been developed in the event of a site shut down to demonstrate how the facility can be decommissioned in its current state to avoid any pollution risk

Documented Information

- [AGR D058 Site Closure Plan](#)

5.0 DO

Take action on the planned process. Identify the resources required and the personnel responsible for the EMS implementation and management. Establish procedures and processes. Communication and participation are key for the success of the EMS and is especially important in senior management.

5.1 Responsibility & Resources

Documented Information

- [AGR D004 Roles & Responsibilities](#)

Located in Integrated Management System /1.0 Commitment to QHSE Management

Managing Director

- Overall responsibility for the Quality Management Standard, Environmental Management Standard and Health & Safety Management Standard
- Overall responsibility for the impact that the business has on the environment
- Overall responsibility for the general welfare and safety of the workforce
- Overall responsibility for legislative and voluntary compliance
- Responsibility to ensure the allocation of sufficient time and resources to enable effective implementation and management of the management standards

Group QHSE Manager

- acts as the site Environmental Representative

- responsibility for the effective implementation and development of the environmental, quality and health and safety management systems
- responsibility for ensuring that environmental and health and safety legislation is identified, implemented and monitored through periodic auditing
- responsibility to ensure that the management systems meet the requirements of the relevant standards
- responsibility to ensure that realistic QHSE objectives are agreed and achieved
- responsibility for organising and managing the Platts Group Green Team
- responsibility for ensuring that the site complies with environmental licences and permits
- responsibility to report the performance of the management systems to senior management for review and as a basis for improvement
- responsibility to perform internal audits in accordance with the agreed programme
- responsibility to communicate QHSE issues internally
- responsibility to take immediate action to deal with an environmental emergency
- responsibility to develop management system documentation and implement effective document control

Operations Director

- responsibility for the effect that the production facility operation has on the environment
- responsibility for ensuring that QHSE objectives relating to the production facility are agreed and met
- responsibility to ensure that the products meet customer requirements and are produced in the most economical and environmentally friendly way
- responsibility to take immediate action to deal with an environmental emergency
- responsibility to ensure resources are available so plant and equipment can be maintained under the preventative maintenance programme
- responsibility to ensure all work is performed in line with stated procedures
- responsibility to ensure that safety equipment is used and instructions followed

All staff

- responsibility to perform tasks in accordance with stated procedures
- responsibility to ensure that safety equipment is used and instructions followed
- responsibility to help ensure that QHSE objectives relating to their areas are met
- responsibility to report incidences of environmental harm or damage
- responsibility to adhere to all site environmental rules

Green Team members

- responsibility to review and update documentation as per agreed programme
- responsibility to meet as a team regularly and keep Objectives & Targets Plan updated
- responsibility to assist the Group QHSE Manager with internal environmental communication

H&S Forum

- responsibility to meet regularly and represent other staff members with health and safety or human resources issues
- responsibility to take action to resolve issues where appropriate and realistic
- responsibility to feedback to Forum members with actions undertaken

Management Review

- responsibility to review documentation as required by management standards

- responsibility to meet annually or more often

Contractors

- responsibility to comply with sites rules and regulations
- responsibility to only undertake tasks that they are competent and trained to do
- responsibility to comply with relevant environmental, safety and quality procedures
- responsibility to provide documentation as required before undertaking any work

5.2 Emergency Preparedness and Response

Documented Information

- [AGR D007 Emergency Contacts](#)
- [AGR D008 Pollution Prevention Plan](#)

Located in Integrated Management System /2.0 Understanding QHSE Responsibilities/2.2 Emergency Preparedness and Pollution Control

- [AGR P001 Fire Emergency Procedure Production Facility](#)
- [AGR P002 Fire Emergency Procedure Parkleigh Office](#)
- [AGR P003 Spill Emergency Procedure](#)
- [AGR P004 General Emergency Procedure](#)
- [AGR P006 Fire Alarm Test Procedure](#)

Located in Integrated Management System/4.0 QHSE Management Programme/4.3 Company Procedures

5.3 Compliance Obligations

Platts Group need to comply with legal and other obligations.

Waste

All waste is collected by a Registered Waste Carrier and Waste Transfer Notes are received or Consignments Notes for hazardous waste. All information about waste companies is included in the spreadsheet detailed below.

Platts Group does not produce much hazardous waste except for waste oil from changing filters in the balers and any used absorbent material and waste filters. We have registered as a Hazardous Waste Producer number CAY016. Hazardous waste is only collected by a registered hazardous waste carrier.

Platts Agriculture Ltd are registered Upper Tier waste carriers and have a Waste Carriers Licence number CBDU5766 valid until 27/4/2025

Documented information

- [AGR D016 Details of Waste Carriers](#)
- [Waste Carriers Licence](#)
- [Hazardous Waste Registration Certificate](#)

Located in Integrated Management System /2.0 Understanding QHSE Responsibilities / 2.2 Managing Compliance Obligations / Waste Documentation

Consent to Discharge

There is a Consent to Discharge applied to the production facility factory for the lorry wash water to the foul sewer. This has limits for volume, peak flow and chemical content. No gross solids should be discharged.

Documented information

- [Consent to Discharge](#)

Located in Integrated Management System /2.0 Understanding QHSE Responsibilities / 2.2 Managing Compliance Obligations / Consent to Discharge – Welsh Water

Packaging

Amounts of packaging are recorded as per the Producer Responsibility Obligations (Packaging Waste) Regulations 2008. The Compliance Packaging Procedure and records for 2013 onwards are retained.

Documented Information

- [Packaging Report 2023](#)
- [Packaging Compliance Procedure](#)

Located in Integrated Management System /2.0 Understanding QHSE Responsibilities / 2.2 Managing Compliance Obligations / Comply Direct Packaging

Environmental Permit

An Environmental Permit has been applied for to continue to operate as an animal bedding specialist business. As of March 2022, this is under review by Natural Resources Wales.

Documented Information

- [Environmental Permit application and supporting documentation](#)

Located in Environmental Management System/2.0 Understanding Environmental Responsibilities / 2.3 Environmental Permit

Quality Sampling & Testing

To maintain good quality standards for the product and maintain compliance with PAS 111 standards and the Environmental Permit the incoming material is sampled for physical contamination and chemical analysis as per the following procedures;

Documented Information

- [AGR P010 Visual Quality Testing Procedure](#)
- [AGR P012 Non-Compliance Procedure](#)
- [AGR P013 Incoming Material Procedure](#)
- [AGR P016 Sampling Procedure](#)

Located in Integrated Management System/4.0 QHSE Management Programme/4.3 Company Procedures

5.4 Competence, Training & Awareness

Induction

Employee training PowerPoint presentations have been developed for environment, health and safety and quality and are shown to all new employees. After induction the checklist is completed to ensure all required points are covered during induction or within the first month of employment.

Documented Information

- [AGR D013 Environmental Awareness Training](#)
- [AGR D014 Quality Induction](#)
- [AGR D057 Health & Safety Induction](#)
- [AGR F067 QHSE Induction Checklist](#)

Located in Integrated Management System /5.0 Continual QHSE Improvement/5.4 Training

These training PowerPoint presentations have also been made available to existing employees.

Training

Employee training matrix is maintained by the Group QHSE Manager and includes all members of staff.

Documented Information

- [AGR D026 Staff Training matrix](#)

Located in Integrated Management System /5.0 Continual QHSE Improvement/5.4 Training

Other training includes reading and understanding Safe Systems of Work, Risk Assessments and Tool Box Talks. Employees need to sign to indicate understanding and compliance with all of these site safety and awareness documents.

Documented Information

- [AGR TBT ALL TALKS](#)
- [AGR TBT RECORD](#)
- [Safe Systems of Work - various](#)
- [SSW Training Record](#)
- [RA Individual Training Record](#) factory
- [RA Individual Training Record](#) office
- [Risk Assessments - various](#)

Located in Health & Safety/Platts Agriculture/Part 2 - H&S Management

5.5 Communication

The Communication Procedure details how internal and external communications are managed. This includes communications with neighbours, stakeholders, customers, suppliers, employees and contractors. Communication is important to ensure that all employees and contractors working on the Platt sites understand the importance of following

company procedures and Safe Systems of Work and know the requirements of the Environmental Permit.

Documented Information

- [AGR P011 Communication Procedure](#)

Located in Integrated Management System/4.0 QHSE Management Programme/4.3 Company Procedures

5.6 Addressing Sustainability

Platts Group aim to work sustainably wherever possible. Actions to improve sustainability include changing to a local milk delivery which reduces plastic waste and supports a local business, implementing the Platts Drastic Plastic Action Plan and creating a wildlife area at Parkleigh office. Information on sustainability actions can be found in the below folder.

Located in Environmental Management System/3.0 Managing Environmental Impacts/3.5 Sustainability Action

Our quality systems are demonstrated in the Quality Protocol document.

Documented Information

- [AGR D003 Quality Protocol](#)

5.7 Site Layout Plans

There are site layout plans for all sites in the Platts Group to show for example location, drainage, processes, emergency points and storage locations.

- [AGR D022 Platts Group Sites Plan](#)
- [AGR D020 Parkleigh Fire Site Plan](#)
- [AGR D021 Production Facility Fire Site Plan](#)
- [AGR D053 Emergency Lighting Plan Production](#)
- [AGR D038 Production Facility Doors Plan](#)
- [AGR D042 Factory Process Flow](#)
- [AGR D043 Balers & Augers Diagram](#)
- [AGR D044 Hooder Plan](#)
- [AGR D045 Extraction Plan](#)
- [AGR D059 Site Plan for DSEAR](#)
- [GAR D006 Platts Commercial Services Site Plan](#)
- [GAR D008 Site Drainage Plan – Garage](#)
- [Site drainage foul main](#)
- [Vehicle wash map](#)

5.8 Contractor & Visitor Management

Contractors working on the Platt sites need to adhere to all company policies, procedures and Safe Systems of Work. They need to undergo the site induction prior to starting work

and confirm that they have read, understood and will comply with all site requirements including pollution prevention and waste management whilst on site.

Drivers collecting material or delivering supplies at production facility site must read the drivers induction and sign in on site.

Non-HGV customers accessing site must read the customer site safety induction and follow instructions given by Platts employees.

Visitors to all sites must sign in and read visitor induction, visitors to production facility and garage sites must be accompanied by a Platts employee at all times.

Documented Information

- [AGR D017 Contractors and Suppliers details](#)
- [AGR D056 Non-HGV Customer Site Safety Induction](#)
- [AGR F055 Contractor Questionnaire](#)
- [AGR F056 Contractor Induction Record](#)
- [AGR D035 Visitor & Contractor Parkleigh Induction](#)
- [AGR D028 Contractor Factory Site Induction](#)
- [AGR D029 Visitor & Contractor Factory Site Induction](#)
- [AGR D054 Driver Site Safety Induction](#)

5.9 Planned Preventative Maintenance

A documented planned preventative maintenance regime for the production facility equipment is in development to include daily, weekly, monthly and annual maintenance checks. This includes what checks need to be done and how often.

Currently visual checks on all equipment are done daily by the production teams on portable tablets, defects and issues are raised and highlighted to the Operations Director.

Documents Information

- Maintenance Scheduling
- [AGR D049 Tests & Inspections Register](#)

6.0 CHECK

Monitoring and measuring the process periodically is important to ensure that the organisation's environmental targets and objectives and requirements of the Environmental Permit are met.

6.1 Monitoring & Maintenance

Monitoring of KPI's is crucial to identify potential savings and demonstrate continual improvement. The following KPI's are included in the spreadsheet; electricity usage, waste production, paper use, water use, diesel use, production graphs, H&S accidents, VOR (Vehicles off road) data.

Documented Information

- [AGR D015 Key Performance Indicators Monitoring](#)

Located in Integrated Management System/2.0 Understanding QHSE Responsibilities/2.4 Monitoring

The carbon footprint of the business has been calculated and is used to identify carbon reduction initiatives and evidence continual improvement.

Documented Information

- [AGR D024 Carbon calculator Data](#)

Located in Integrated Management System/2.0 Understanding QHSE Responsibilities/2.4 Monitoring

Daily site checks are undertaken of the site to ensure the condition and integrity of the;

- ✓ Concrete hardstanding
- ✓ Buildings, fences and gates
- ✓ Drainage arrangements
- ✓ Site security & CCTV
- ✓ Bunding

Site equipment and machinery are also subject to daily and / or pre-use checks and regular scheduled inspections at appropriate times in accordance with the manufacturers instructions and as required by Health and Safety legislation. Additionally the annual review of the compliance register, policies, risk assessments and other documents relating to the management systems is required and maintained in the Tests and Inspections Register.

Documented information

- [iAuditor by SafetyCulture - Inspection Software & Mobile Inspection App](#)
- [AGR D049 Tests & Inspections Register](#)

Located in Integrated Management System/3.0 Managing QHSE Impacts

6.2 Documentation & Control

All documents, procedures and forms are subject to documentation control. Documents without document control should not be used. Documents subject to document control should not be saved on desktops or in other folders. If printed they should be printed in PDF to prevent unauthorised changes.

Document control follows the format of;

AGR – for Platts Agriculture followed by;
D – for documents

POL – for policies
P - for procedures
F - for forms

Followed by a consecutive number starting at 001.

Documented information

- [AGR D022 Integrated Document Control Log](#)

Located in Public/Document control

6.3 Internal Audits

All documentation in the management systems is subject to an annual review and this is recorded in the Internal Audit Schedule. Audits are undertaken by the Group QHSE Manager with assistance from department heads.

Documented information

- [AGR D018 Internal Audit Schedule](#)

Located in Integrated Management System/5.0 Continual QHSE Improvement/5.1 internal Audit Programme

- [AGR P018 Internal Audit Procedure](#)

Located in Integrated Management System/4.0 QHSE Management Programme/4.3 Company Procedures

7.0 ACT

Taking actions in order to continually improve the EMS by conducting a management review to ensure that the objectives of the EMS are being met, to what extent objectives are being met, that communications are being managed and to evaluate changing circumstances.

7.1 Management Review

The first integrated management systems management review was undertaken in March 2023. Subsequently management reviews are done throughout the year at monthly management meetings with an annual summary in March each year. Directors are present in Management Reviews and authorise documentation, approve objectives and targets and confirm that the management systems are operating effectively throughout the business.

The Group QHSE Manager creates the agenda and chairs the meeting ensuring all required areas are covered.

Documented information

- [AGR D027 Environmental Statement / Environmental Report](#)

Located in Environment /5.0Continual Environmental improvement/5.4 Environmental report

- [AGR F070 Integrated Management System Management review template](#)

Located in Integrated Management System/5.0 Continual QHSE Improvement/5.5 Management Reviews

7.2 Non-conformance & Corrective Action

For all non-conformance episodes or incidents that are not vehicle or equipment defects the following form should be used. This should be returned to the Group QHSE Manager to be acted upon. The index tab must also be completed and scanned copies of completed forms stored in the same folder.

Located in Environmental Management System/2.0 Understanding Environmental Responsibilities/2.7 Non-conformance & Corrective Action

For vehicle and equipment faults a defect form on the tablet should be completed and given to the Production Manager. All defects must be entered onto the defects register

Complaints must be managed in accordance with the complaints procedure and records of all complaints maintained in Customer Complaints spreadsheet to ensure an accurate complaints history is available. All customer and supplier complaints and actions taken must also be recorded in a non-conformance report form.

Documented information

- [AGR F040 Non-conformance report form](#)

Located in Integrated Management System/2.0 Understanding QHSE Responsibilities/2.5 Non-conformance & corrective action

- [AGR P019 Complaints Procedure](#)

Located in Integrated Management System/4.0 QHSE Management Programme/4.3 Company Procedures

- AGR F069 Customer Complaints spreadsheet
- AGR D036 Defects Register

Appendix 1 Manual Review

Year	Reviewed by;	Date of review	New version number	Amendments to Manual
2023	A.Fuller	5/6/23	4	
2023	A.Fuller	17/8/23	5	Amended references to Platts Group instead of Platts Agriculture Ltd
2024	A.Fuller	24/4/2024	6	Updated sections to ensure all requirements of Environmental Permit are included.