

# Colomendy Waste Transfer Station: Environmental Risk Assessment

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## 1.0 Introduction

The Waste and Resource Action Programme (WRAP), on behalf of Denbighshire County Council (DCC), has instructed Eunomia Research & Consulting Ltd (Eunomia) to prepare a bespoke permit application, and Fire Prevention and Mitigation Plan, for the DDC Colomendy Waste Transfer Station (WTS) Colomendy industrial estate, under the Environmental Permitting (England and Wales) Regulations 2016.

This Environmental Risk Assessment has been undertaken to assess the risks to the environment and human health from odour, noise and vibration, and fugitive emissions that may be associated with the operations at the facility as a result of this permit application.

Natural Resources Wales (NRW) has adopted the Environment Agency's approach to completing risk assessments and refers users to complete the risk assessment in accordance with the Environment Agency (EA) 'Risk assessments for your environmental permit' guidance, as published 1 February 2016 (updated 25<sup>th</sup> March 2021). This assessment has been completed in line with this EA guidance. The aim of the assessment is to identify any significant risks and demonstrate that the risk of pollution or harm will be acceptable by taking the appropriate measures to manage and mitigate these risks.

NRW's adopted approach requires all receptors that are near the site that might reasonably be considered to be affected by the activities to be identified and considered as part of the assessment.

For the purposes of this Risk Assessment, a 1km radius<sup>1</sup> from the site's Environmental Permit boundary has been adopted in reviewing potentially sensitive receptors of ecological importance along with features such as sites of cultural and natural heritage. A radius of 1km from the site's Environmental Permit boundary has also been adopted for all other potentially sensitive receptors (for example, residential, commercial, industrial, agricultural and surface water receptors). In line with OPRA guidance, a 2km radius has been adopted for reviewing the proximity of Sites of Special Scientific Interest (SSSI).

This Environmental Risk Assessment should be read in conjunction with the Operational Techniques Document and the Environment Management System (EMS) submitted with this permit application.

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<sup>1</sup> A 1km radius has been used for the risk assessment to review potential sensitive receptors to be comparable to the current requirements of NRW's Fire Prevention and Mitigation Plan Guidance.

## 2.0 Site Setting and Receptors

The WTS is situated on Colomendy industrial estate located off the Ffordd Y Graig Road in Denbigh. The National Grid Reference for the site is SJ053674 and the site location is illustrated in Figure 2-1.

The surrounding land-use and receptors are illustrated in Figure 2-2, and are identified in Table 2-1 below.

The site is on an industrial estate situated between farmland to the north and east, commercial premises to the south-east and south, and an aggregate quarry to the west. Beyond the commercial premises to the south and southeast, there are residential properties within 1km, whilst to the west (and within 1km), woodland surrounds the quarry, including two Sites of Special Scientific Interest (SSSI) and a local wildlife site. There are no additional SSSIs within the 2km radius.

**Table 2-1 – Immediate Surrounding Land Uses**

Boundary	Description
North	Agricultural land
East	Agricultural land
South	Commercial Premises
West	Road, Woodland and Aggregate Quarry

Figure 2-1 Site Location Plan

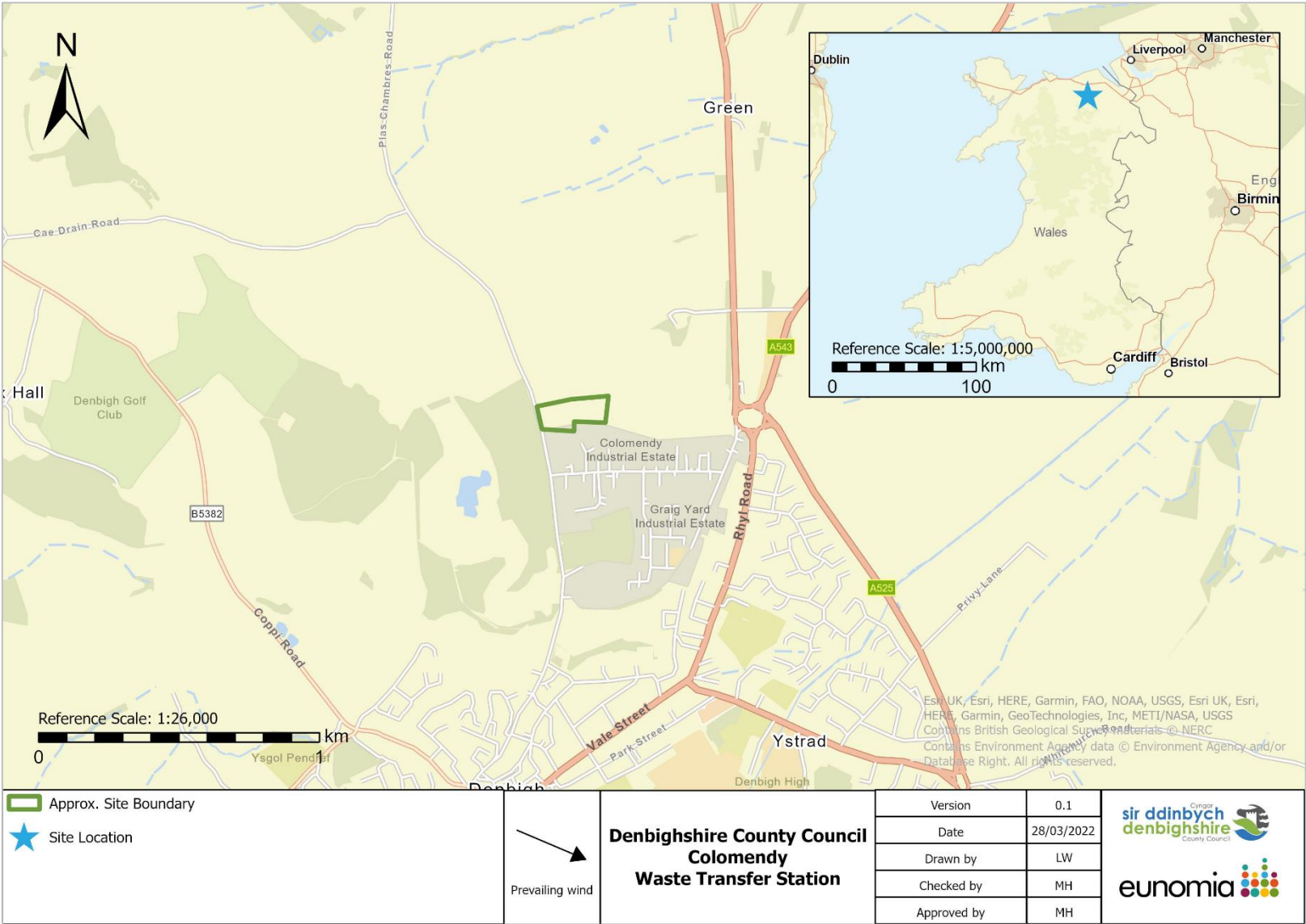
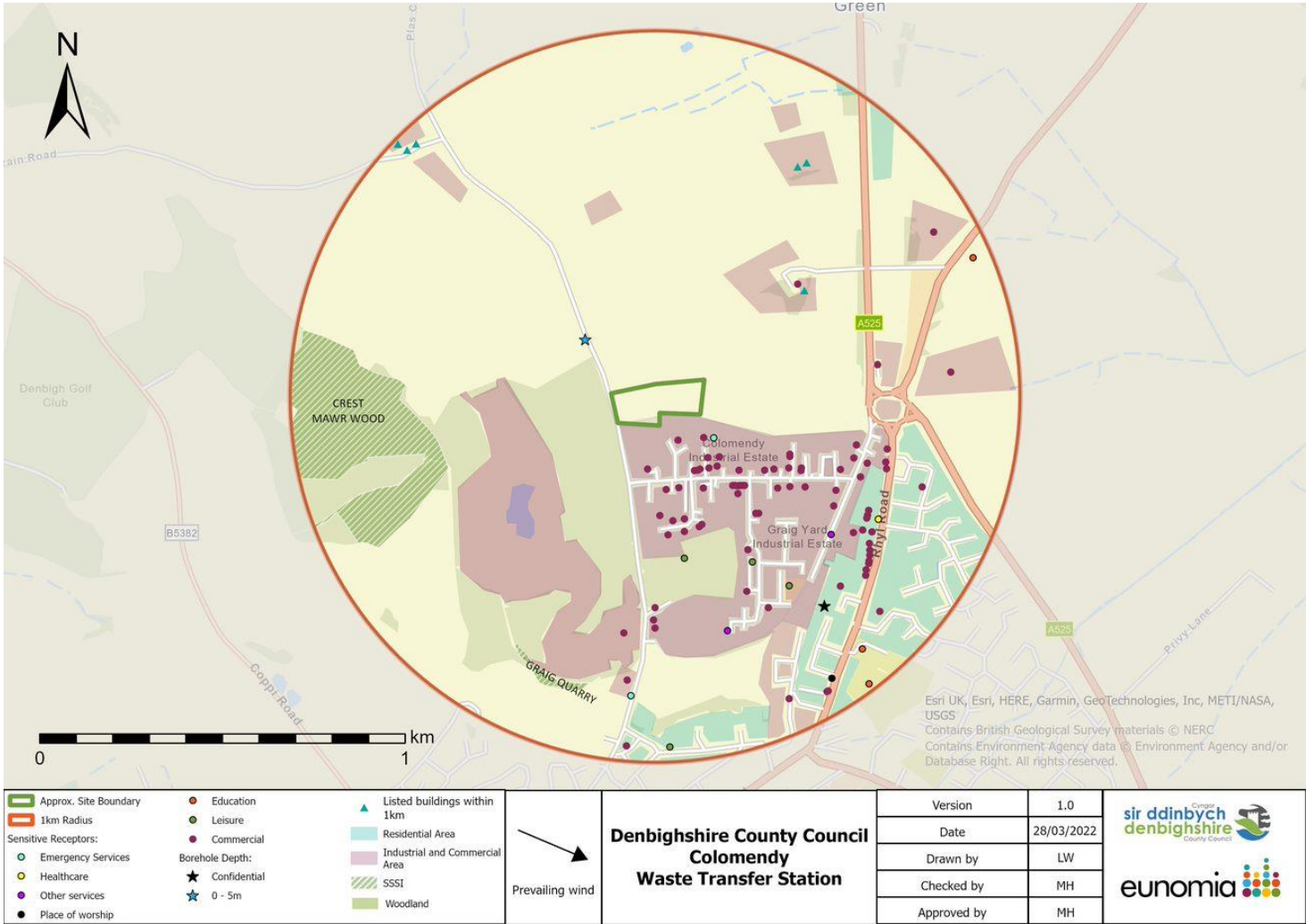


Figure 2-2: Surrounding Land-use and Sensitive Receptors within 1km of the site<sup>2</sup>



<sup>2</sup> There are no other SSSIs within 2km other than those shown in this 1km boundary



## 2.1 Immediate Surrounding Land-Use

The immediate surrounding land-use is described in further detail below:

### 2.1.1 Industrial and Commercial Premises

Colomendy Industrial Estate is comprised of a number of industrial and commercial premises. Access to the site will be from the Ffordd Y Graig road that runs along the western side of the Colomendy industrial estate.

### 2.1.2 Residential Properties

Several residential properties are situated within 1km to the site, approximately 550m to the east, and 800m to the south of the proposed site.

### 2.1.3 Educational, Healthcare and Emergency Services Premises

There are multiple education facilities within 1km of the proposed site, detailed below in Table 2-2 with their approximate distance (m) and direction from the site.

**Table 2-2 Education facility within 1km of the site**

Education facility name	Approx. distance from site (m)	Direction from site
<b>Denbighshire Music Co-operative</b>	610	SE
<b>St. Brigid's School</b>	950	NE
<b>Ysgol Frongoch County Primary School</b>	890	SE
<b>Ysgol Twm O'r Nant</b>	980	SE

There is one healthcare facility within 1km of the proposed site, detailed below in Table 2-3 with its approximate distance (m) and direction from the site.

**Table 2-3 Healthcare facilities within 1km of the site**

Healthcare facility name	Approx. distance from site (m)	Direction from site
<b>Plas Eleri Nursing Home</b>	695	SE

There is one emergency service facility 1km of the proposed site, detailed below in Table 2-4 with its approximate distance (m) and direction from the site.

**Table 2-4 Emergency Service facilities within 1km of the site**

Emergency Services facility name	Approx. distance from site (m)	Direction from site
<b>North Wales Police</b>	820	SW

### 2.1.4 Water Features

There is a pond marked directly on the northern boundary of the site. Following ground investigations during a newt mitigation survey of the site, this was found to be a grassy

hollow that became temporarily inundated in the wettest weather. Up to 14 additional pond locations were identified within 500m of the site during a desk-based exercise, however during ground investigations many of these were also found to be dried up.

There is also a quarry pool approximately 260m to the south-west of the site boundary within Denbigh Quarry.

#### *2.1.5 Great Crested Newts*

A newt mitigation survey of the site and surrounding areas in 2019 (extract in Appendix 2) found evidence of Great Crested Newts in a pond approximately 480m north of the site in land currently used as farmland. Exclusion fencing has been installed at the site boundary and a pond created in a landscape strip along the northern boundary of the site. This pond is outside the perimeter fencing for the working area and security fence line of the WTS, and will be managed by DCC Countryside Service. The pond itself is fed from rainwater from the northern aspect of the main building roof and direct rainfall only.

#### *2.1.6 Major Roads and Transport Links*

The site is located in the north of the town of the Denbigh. The access roads to the site are off the Ffordd Y Graig Road. There are two major roads within 1km of the site boundary; the A525 and A543. At the nearest point, these roads are 450m and 550m respectively from the eastern boundary of the site.

### **2.2 Hydrology and Hydrogeology**

#### *2.2.1 Geology*

The British Geological Survey<sup>3</sup> indicates the western section of the proposed site will sit atop a sedimentary bedrock (the Clwyd Limestone Group), whilst the eastern section of the site sits atop a different sedimentary bedrock type (the Kinnerton Sandstone Formation).

The superficial deposits beneath the entirety of the proposed site are Till, and Devensian – Diamicton, a type of siliciclastic sediment and sedimentary rock, which is poorly sorted and contains a wide range of clast sizes.<sup>4</sup>

#### *2.2.2 Hydrogeology*

The British Geological Survey website<sup>5</sup> classifies the hydrogeology of the land underneath the western section of the proposed site as being Dinantian rock (undifferentiated), a Karstic limestone aquifer with rapid response to rainfall. It is a moderately productive aquifer, though yields are highly variable from dry to 40 L/s and the flow is virtually all through fractures and other discontinuities.

The hydrogeology of the land underneath the eastern section of the site as being Permian Rocks (Undifferentiated), a sandstone, with some conglomerates. It is a highly productive aquifer yielding up to 25 L/s in Eden and Clwyd valleys and has significant intergranular flow.

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<sup>3</sup> British Geological Survey, *Geology of Britain viewer* <http://mapapps.bgs.ac.uk/geologyofbritain/home.html> [accessed March 2022]

<sup>4</sup> British Geological Survey, *BGS Rock Classification Scheme* [https://webapps.bgs.ac.uk/bgsrscs/rcs\\_details.cfm?code=DMTN](https://webapps.bgs.ac.uk/bgsrscs/rcs_details.cfm?code=DMTN) [accessed March 2022]

<sup>5</sup> British Geological Survey website, *Hydrogeology 625K digital hydrogeological map of the UK* <https://www.bgs.ac.uk/products/hydrogeology/maps.html>, [accessed March 2022]

Within the 1km radius there is hydrogeology categorised as Warwickshire Group, a regional, cyclic multi-layered aquifer. It is a moderately productive aquifer, with moderate to large yields from sandstones (up to 100 L/s from shafts).

### 2.2.3 Hydrology

Drainage plans for this proposed site indicate the flow direction for the site is from west to east.

NRWs Runoff Attenuation maps<sup>6</sup> indicates that, at 1% Annual Exceedance Probability (AEP), there is a high potential for flow accumulation across the land surface or in smaller channels in the southeast corner of the site, along the site boundary.

### 2.2.4 Flooding

Figure 2-3 indicates the flood risk of the proposed site from Surface Water and Small Watercourses.<sup>7</sup> From this source, there is a low to high risk of flooding in the south-east of the site, and low risk of flooding in the north of the site. Just beyond the northern boundary of the site, there is a small area with a high risk of flooding.

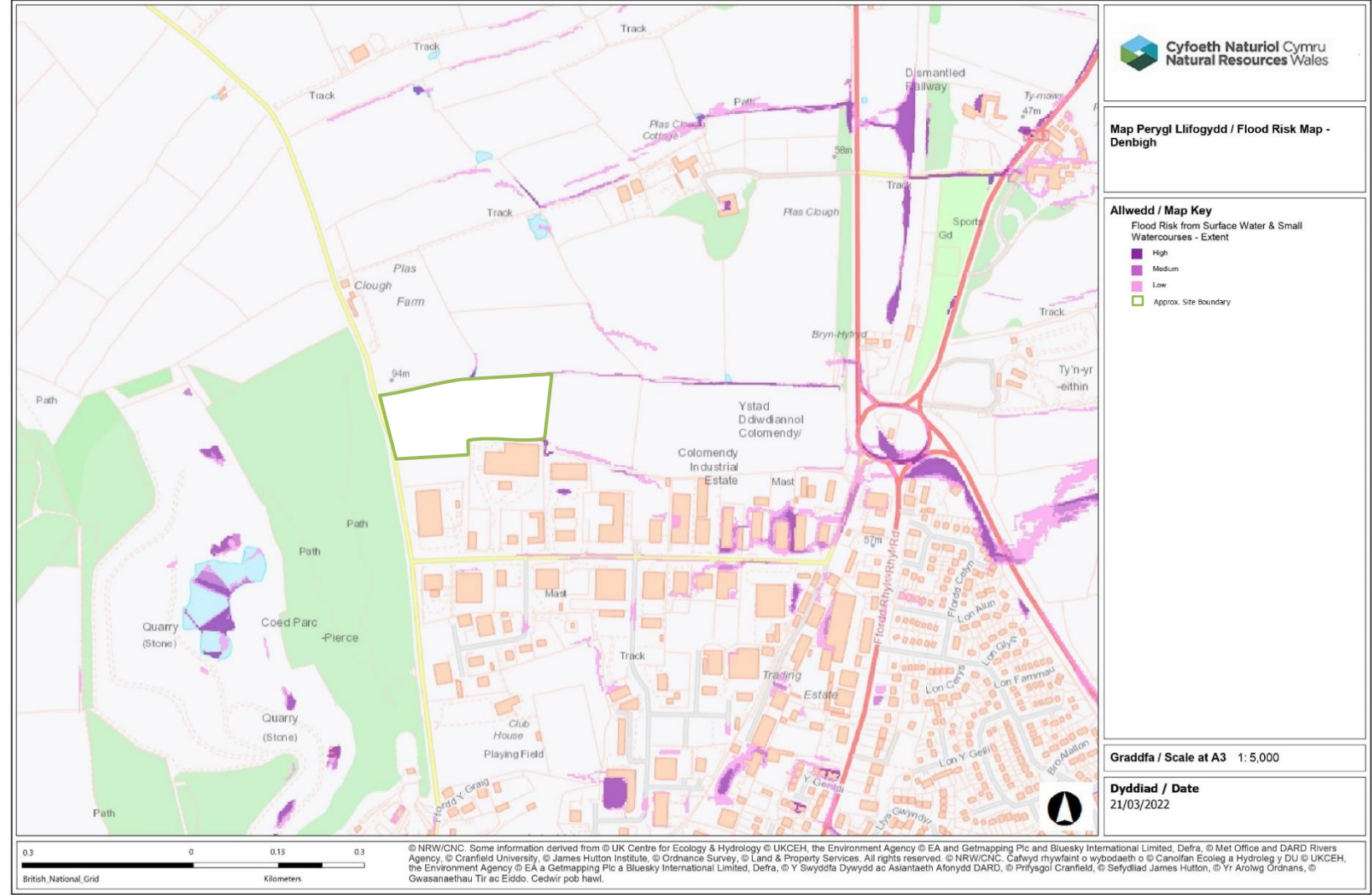
NRW's Flood Risk Assessment Map<sup>7</sup> indicates the site is not at risk of flooding from rivers or the sea and is not beneficially influenced by flood defence infrastructure.

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<sup>6</sup> NRW, WWNP Runoff Attenuation Features 1% AEP – Wales [https://datamap.gov.wales/layers/inspire-nrw:NRW\\_WWWP\\_RUNOFF\\_ANTEN\\_1PC](https://datamap.gov.wales/layers/inspire-nrw:NRW_WWWP_RUNOFF_ANTEN_1PC) [accessed March 2022].

<sup>7</sup> NRW, Flood Risk Assessment Wales map <https://naturalresources.wales/flooding/check-your-flood-risk-on-a-map-flood-risk-assessment-wales-map/?lang=en> [accessed March 2022].

Figure 2-3 Flood Risk from Surface Water and Small Watercourses

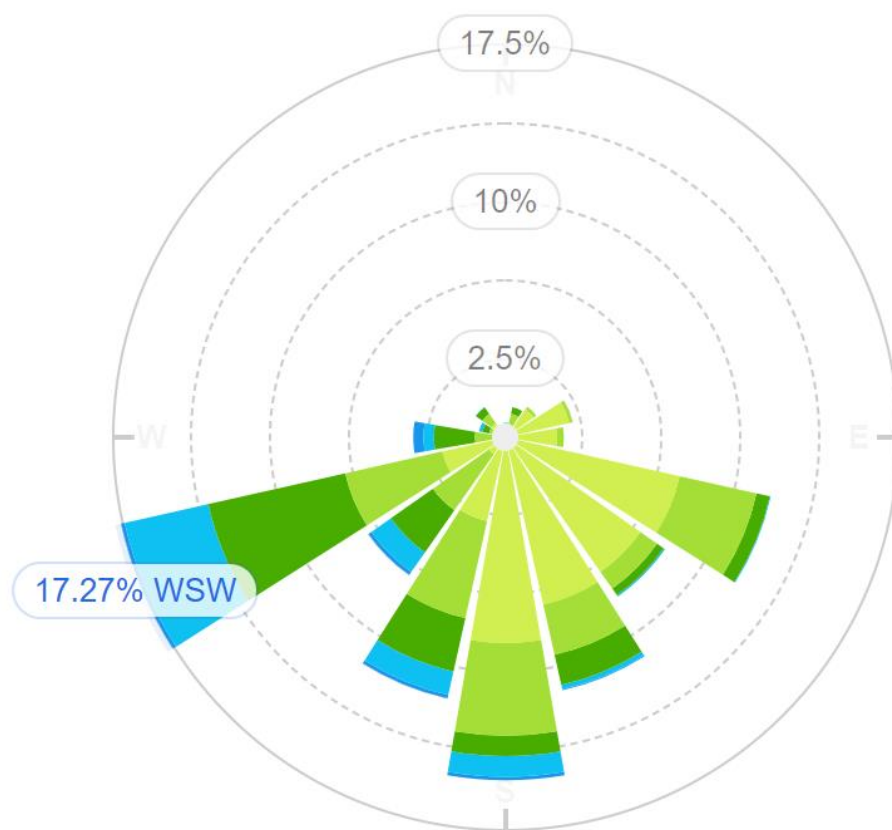


## 2.3 Air Quality Setting

The Department for Environment, Farming and Rural Affairs (Defra) Air Quality Management Area Mapping Tool<sup>8</sup> confirms that the site is not located within an area designated as an Air Quality Management Area.

Wind speed and direction data have been obtained for Denbigh and indicates a west-south-west prevailing wind direction based on 5year annual average (Figure 2-4 below). As a result, the potential impact of fugitive emissions is likely to be greater to the west-south-west of the site.

**Figure 2-4 - Wind Rose for Denbigh<sup>9</sup>**



## 2.4 Ecology

### 2.4.1 European / Internationally Protected Sites

Searches conducted on the Multi Agency Governmental Information for the Countryside (MAGIC) website<sup>10</sup> indicate that there are none of the following European or internationally designated sites within 1km of the site:

- Ramsar sites;
- Special Areas of Conservation (SAC); or
- Special Protection Areas (SPA)

<sup>8</sup> Defra, Air Quality Management Areas (AQMA) <https://uk-air.defra.gov.uk/aqma> [accessed March 2022]

<sup>9</sup> WillyWeather, Denbigh Wind Forecast <https://wind.willyweather.co.uk/wj/denbighshire/denbigh.html> [accessed July 2022]

<sup>10</sup> MAGIC, MAGIC Map [magic.gov.uk](https://magic.gov.uk) [accessed March 2022]

There are the following Sites of Special Scientific Interest (SSSI) within 2km:

- Crest Mawr Wood
- Graig Quarry

#### 2.4.2 Ancient Woodlands and Nationally Designated Sites

NRW's Ancient Woodland Inventory 2021<sup>11</sup> indicates there are three areas of Ancient Semi-Natural Woodland or Restored Ancient Woodland within 1km of the site. These woodland areas are approximately 20m to the west of the site, 650m to the south, and 400m to the west. Within the footprint of Crest Mawr Wood is a local wildlife site, Coed Parc-Pierce.

Searches have also confirmed there are none of the following ecological receptors within 1km of the permit boundary:

- Areas of Outstanding Natural Beauty<sup>12</sup>
- National Parks; and
- National Nature Reserves.

#### 2.5 Cultural Heritage

Using NRW databases, the following types of cultural and heritage features within in 1km of the site were searched for.

##### 2.5.1 Listed Buildings

NRW's Listed Buildings database<sup>13</sup> indicate there are multiple Listed Buildings with 1km of the site. These are detailed below:

Listed Building Name	Type	Approx. distance from site (m)	Direction from site
<b>Plas Clough</b>	Domestic	500	NE
<b>Secondary House at Plas Chambres</b>	Domestic	985	NW
<b>Agricultural Complex at Plas Chambres</b>	Agriculture and Subsistence	955	NW
<b>Carthouse at Plas Chambres, including adjoining orchard walls</b>	Agriculture and Subsistence	955	NW
<b>Tan-y-Parc</b>	Domestic	740	NE
<b>Agricultural Range at Tan-y-Parc</b>	Agriculture and Subsistence	755	NE

<sup>11</sup> NRW Lle, Ancient Woodland Inventory 2021 <http://lle.gov.wales/catalogue/item/AncientWoodlandInventory2021/?lang=en> [accessed March 2022]

<sup>12</sup> NRW Lle, AONB <https://lle.gov.wales/catalogue/item/ProtectedSitesAreasOfOutstandingNaturalBeauty/?lang=en> [accessed March 2022]

<sup>13</sup> NRW Lle, Listed Buildings <https://lle.gov.wales/catalogue/item/ListedBuildings/?lang=en> [accessed March 2022]

### 2.5.2 Scheduled Monuments

A search on the NRW database<sup>14</sup> indicates that there are no scheduled monuments within 1km of the site boundary.

## 2.6 Key Human Receptors

Figure 2-2 shows the location of receptors within 1km of the site boundary that are considered to be most likely to be affected by the operation of the site. Table 2-5 lists those sites which are within 100m of the site boundary and the full list of sensitive receptors can be found in Appendix 1.

**Table 2-5 - Identified Receptors within 100m of the Environmental Permit Boundary (as shown in Appendix 1.0)**

Receptor Name	Receptor Type	Direction from Site	Approx. Distance from Site Boundary (at nearest point)
<b>For Farmers</b>	Commercial	South	10m
<b>Denbigh Ambulance Station NHS Supply Store</b>	Other Services	Southeast	50m
<b>Baa Stool Ltd</b>	Commercial	Southeast	50m

<sup>14</sup> NRW Lle, Scheduled Monuments <https://lle.gov.wales/catalogue/item/ScheduledAncientMonumentsInWales/?lang=en> [accessed March 2022]



## 4.0 Environmental Risk Assessment Overview and Approach

This environmental risk assessment complies with the NRW's Risk Assessment for Standard Rules template and the Environment Agency's regulatory guidance,<sup>15</sup> which has been adopted by NRW.

The guidance states that when applying for a bespoke permit where most of the activities are covered by standard rules, only a risk assessment for the activities or risks that are not covered by the generic risk assessment for those standard rules is required. This is the approach that has been followed. This permit application will be based on the standard rule permit SR2008 No 3: household, commercial and industrial waste transfer station with treatment<sup>16</sup>, with appropriate additional control measures included to address the additional risks presented by the non-standard activities proposed. These include; storage of wastes outside of a building, the proximity of SSSIs and acceptance of hazardous waste streams.

### 4.1 Adjusted Risk

Table 4-1 includes an adjusted risk assessment for each standard rules risk from SR2008 No 3 that may be affected as a result of the proposed activities which are outside of the standard rule set.

The approach follows the NRW adopted, Environment Agency's recommended steps for identifying and assessing risks:

- 1) Identify and consider risks for your site, and the sources of the risks (e.g. Odour, noise & vibration, fugitive emissions – dust, must, litter and pests - and accidents)
- 2) Identify the receptors (people, animals, property and anything else that could be affected by the hazard) at risk from your site.
- 3) Identify the possible pathways from the sources of the risks to the receptors.
- 4) Assess risks relevant to your specific activity and check they are acceptable and can be screened out.
- 5) State what you will do to control risks if they are too high.

Table 4-2 details the standard risk assessment where the proposed activities present no additional risk to a standard rules permitted activity. Where additional risk is present, it includes appropriate additional control measures.

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<sup>15</sup> Environment Agency website; <https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit> Accessed July 2021

<sup>16</sup> Natural Resources Wales; <https://cdn.cyfoethnaturiol.cymru/media/692240/sr2008-no03-hci-waste-transfer-station-with-treatment-v71.pdf> accessed July 2021.



**Table 4-1: Adjusted Risk Assessment**

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
Local human population	Noise and vibration	Nuisance, loss of amenity, loss of sleep.	Noise through the air and vibration through the ground.	Medium	Medium	Medium	<p>Local residents often sensitive to noise and vibration</p> <p>Glass is to be tipped and bulked outside.</p> <p>Other waste movements that will occur outside, e.g. bulking road sweepings, topsoil to the north of the site.</p>	<p>The noise from glass being tipped will be intermittent, as RRVs tend to tip in distinct time windows, usually twice a day.</p> <p>Bulk collections of glass from the site will only occur once or twice a week and loading a bulk trailer takes around 30 minutes. Glass will only be loaded between 0800 and 1700.</p> <p>This is a purpose-built facility and noise prevention was taken into consideration in the design of the building and layout of the site.</p> <p>The fixed plant (balers and sorting line) are located in the enclosed WTS shed, along with bays in which vehicles will tip waste into. Doors to the main building will be open during operational hours and closed out of operational hours. A 7m high screening wall extends along the north of the site, forming the rear of the external highways bay and then extends to near the main building. This wall was added following the Noise Impact Assessment to reduce noise spread from the site north in direction of receptors.</p> <p>RRVs and HGVs using the site will be subject to strict speed limits (max 10mph) to manage safety and potential noise and vibration.</p> <p>Any residual noise will be addressed and mitigated through a noise management plan and a defined procedure within the site EMS.</p> <p>Noise monitoring will take place daily as per EMS 8.01</p>	Low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
Local human population	Scavenging animals and scavenging birds	Harm to human health - from waste carried off site and faeces. Nuisance and loss of amenity.	Air transport and over land	Medium	Medium	Medium	Permitted wastes may attract scavenging animals and birds. Specified low-risk wastes stored outside may become nesting / breeding sites.	Household food waste will be stored in a sealed container and AHP within a dedicated bay in a building and both will be transferred offsite for composting/bioenergy use or reprocessing. As a result, any odours will be fully contained and the risk of attracting flies/vermin minimised.  The EMS and Pest Management Plan for the site will contain a process for pest management which will include good housekeeping procedures and the use of registered practitioners to manage the spraying of waste to manage flies should this be required. It will also include the use of bait boxes for small rodents.  Pest monitoring will take place daily as per EMS 8.01	Low
Local human population	Pests (e.g. flies)	Harm to human health, nuisance, loss of amenity	Air transport and over land	Medium	Medium	Medium	Insect pests can multiply on permitted wastes, particularly in summer months	As above.	Low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
Local human population and local environment	Flooding of site	If waste is washed off site it may contaminate buildings / gardens / natural habitats downstream.	Flood waters	Low	Medium	Low	<p>Hazardous wastes (aerosols and batteries) stored in containers in an external bay.</p> <p>All other permitted waste types are non-hazardous so any waste washed off site will add to the volume of the local post-flood clean up workload, rather than the hazard.</p>	<p>The management system will include flood risk management.</p> <p>The site will utilise SuDS for water attenuation and will be maintained in line with DCC's EMS. This will help to mitigate against flooding on the site.</p> <p>The majority of site is not at risk from flooding from surface water and small watercourses.</p> <p>The site is surrounded by a fence that will prevent waste being washed off the site.</p> <p>The majority of waste is stored inside buildings.</p> <p>The site has sealed surface water drainage system that has been designed to accommodate a 1 in 100year (+30% for climate change) flood event.</p> <p>All waste is stored on impermeable surfacing in bays or containers, with a sealed drainage system which will prevent waste from washing off site.</p> <p>The management of contaminated fire water will take place on impermeable areas of the site and it is outlined in the FPMP.</p>	Very low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
Local human population and / or livestock after gaining unauthorised access to the waste operation	All on-site hazards: wastes; machinery and vehicles.	Bodily injury	Direct physical contact	Medium	Medium	Medium	Some hazardous wastes stored on-site in containers. Medium magnitude risk estimated because of presence of hazardous wastes on site.	<p>The management system will include site security measures to prevent unauthorised access.</p> <p>The site is manned at all times during operational hours. The site is locked when unmanned and all storage containers are securely locked. Staff check that the site and equipment is secure as part of their daily procedures.</p> <p>Signs are erected at the site entrance and perimeter to discourage trespassers. Palisade fencing (approximately 2.4m in height) is installed around the perimeter of the WTS and its integrity is checked daily. Security lighting and CCTV is operational around the WTS site 24/7. The live CCTV feed is monitored by staff during the day and outside of operational hours nominated DCC employees, ensuring that emergency services could be swiftly notified out-of-hours, if required.</p> <p>All material types are stored in separate containers or bays to reduce the risk of reactions between wastes. This includes the storage of all hazardous materials in sealed containers.</p> <p>A traffic management plan is in place for site operations.</p>	Low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
Local human population and local environment.	Arson and / or vandalism causing the release of polluting materials to air (smoke or fumes), water or land.	Respiratory irritation, illness and nuisance to local population. Injury to staff, firefighters or arsonists/vandals. Pollution of water or land.	Air transport of smoke. Spillages and contaminated firewater by direct run-off from site and via surface water drains and ditches.	Medium	Medium	Medium	Some hazardous wastes stored on-site in containers. Medium magnitude risk estimated because of presence of hazardous wastes on site	As above. Fire Prevention and Mitigation Plan (FPMP) in place to minimise the risk of a fire / reduce the impacts of a fire. Access to waste will be restricted by the perimeter fencing, and by storing waste in buildings and/or secure containers. The spread of fire will be restricted by the storage of non-hazardous wastes normally in bulk containers or buildings. All hazardous wastes are to be stored in secure containers or in bays with firewalls. Tyres will not be stored on site.	Low
All surface waters close to and downstream of site.	Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste e.g. containing suspended solids.	Chronic effects: deterioration of water quality	Direct run-off from site across ground surface, via surface water drains, ditches etc. Indirect run-off via the soil layer	Medium	Low	Low	Any hazardous wastes stored on-site are stored in secure containers or a building. The road sweepings bay has dedicated foul drainage for run-off.	All liquids shall be provided with secondary containment (applies to both wastes and non-wastes such as fuels). Run-off is restricted and storage of non-hazardous wastes normally in bulk containers or buildings. Hazardous wastes are stored in secure containers. Waste storage and treatment on impermeable surface with sealed drainage and penstock valve. Road sweepings are stored in dedicated, covered bays and are passively dewatered on an impermeable surface to foul drainage with a penstock valve. Spill kits located in welfare office. Staff trained to use spill kits to clear up spillages immediately upon discovery.	Low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
Groundwater	Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste e.g. containing suspended solids	Chronic effects: contamination of groundwater, requiring treatment of water or closure of borehole.	Transport through soil/groundwater then extraction at borehole.	Medium	Medium	Medium	There is a potential for contaminated rainwater run-off or leachate from permitted waste types.	As above.	Low
Protected sites - European sites and SSSIs	Any	Harm to protected site through toxic contamination, nutrient enrichment, smothering, disturbance, predation etc.	Any	Low	Medium	Medium	<p>The proximity of the site to the Coed Parc-Pierce wildlife site and the SSSIs (Crest Mawr Wood and Graig Quarry), within 500m to the west of the site's most boundary.</p> <p>Waste operations may cause harm to and deterioration of nature conservation sites.</p>	<p>The wastes with the highest risks will be stored indoors or in sealed containers.</p> <p>There will be a maintenance regime in place for the drainage on site as per Section 8 of the EMS.</p> <p>The EMS will also contain a mud and litter management plan, as well as a dust management plan, to control windborne litter and particulates.</p> <p>A pest management plan is in place to prevent pests.</p>	Low

**Table 4-2: Standard Rules Risk Assessment**

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
Local human population	Releases of particulate matter (dusts) and micro-organisms (bioaerosols).	Harm to human health - respiratory irritation and illness.	Air transport then inhalation.	Medium	Medium	Medium	Permitted waste types do not include dusts, powders or loose fibres but the treatment activities will produce particulate matter so a high magnitude risk is estimated. There is potential for exposure if anyone is living or working close to the site (apart from the operator and employees).	<p>A Dust Management Plan is in place.</p> <p>The EMS for the site will contain a section detailing how dust will be managed on site should it arise to ensure it doesn't cause any pollution.</p> <p>Site is not located within an AQMA designated for PM10.</p> <p>The site benefits from impermeable surfacing which is easy to clean.</p> <p>A Dust &amp; Odour Management System (Mist-Air System) covers the main and secondary building to control any issued with dust with a water mist.</p> <p>Good housekeeping will be in place as per the EMS.</p>	Low
Local human population	As above	Nuisance - dust on cars, clothing etc.	Air transport then deposition	Medium	Low	Low	Local residents often sensitive to dust.	As above.	Low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
Local human population, livestock and wildlife.	Litter	Nuisance, loss of amenity and harm to animal health	Air transport then deposition	Medium	Medium	Medium	Local residents often sensitive to litter.	<p>Most waste is stored internally inside the WTS building and secondary building.</p> <p>Waste that is stored externally is not easily windblown. i.e. glass and bales or is in covered bays, i.e. road sweepings.</p> <p>Daily checks are made within and around the site for litter which may escape during the waste handling and processing operations within and around the waste transfer building.</p> <p>The site benefits from impermeable surfacing which is easy to clean.</p> <p>The newt pond and landscape strip that runs outside the northern boundary fenceline will be managed by DCC Countryside Service to remove any litter.</p> <p>Good housekeeping will be in place as per the EMS.</p>	Low
Local human population	Waste, litter and mud on local roads	Nuisance, loss of amenity, road traffic accidents.	Vehicles entering and leaving site.	Medium	Medium	Medium	Road safety, local residents often sensitive to mud on roads.	<p>The entire working area is surfaced by impermeable concrete or hard-standing. All waste handling and processing will take place on impermeable surfacing which is served with sealed drainage.</p> <p>Any vehicle leaving the site will be checked to ensure that they are clear of loose material and that waste is secure. Where necessary, vehicles will be cleaned before leaving site.</p> <p>If mud, or debris is deposited onto public areas, by accident or neglect, that material will be cleaned as soon as practicable and cause of mud/debris escape investigated, and corrective measure activated to avoid future occurrences.</p> <p>Mud and litter management will be part of the EMS.</p>	Low



Local human population	Odour	Nuisance, loss of amenity	Air transport then inhalation.	Medium	Medium	Medium	<p>Local residents often sensitive to odour.</p> <p>The wastes which will be received on site which have the potential to cause odour are residual waste, garden waste, food waste and AHPs.</p>	<p>The majority of wastes are of a low odour risk (e.g. plastics, metal) and operatives will assess the waste at the point of collection (kerbside) to reduce the risk that excessively odorous or non-compliant waste is brought to site.</p> <p>The food waste handled at site is collected from household sources and will be transferred to the site soon after it is generated which will limit the extent of decomposition and the odour generated.</p> <p>Food waste will be collected in stillage RRVs in separate dedicated food pods. On arrival at the site, the food pods will be removed from the RRV and immediately tipped into the fully sealed food skips inside the secondary building. These food skips will remain closed when they are not in use and will be washed at least weekly as will the food pods on the RRVs. No food waste will be tipped on the floor and food waste will be on site for a maximum of 3 days.</p> <p>AHPs will be collected in bags and will be deposited within a sealed container located in the designated bay within the WTS building following collection and will remain on site for no longer than 5 days. The waste will remain in the bags during storage. The container will be washed down at least weekly.</p> <p>The contract which the authority has for residual waste allows for the daily removal of residual waste and hence residual waste will not be on site long enough to create odour issues outside the boundary. Any load received which is overly odorous will be quarantined and removed from site.</p> <p>Garden waste has the potential to become odorous once decomposition occurs. This waste is collected within 3 days of being received at site so is highly unlikely to become odorous under normal circumstances.</p> <p>Any residual odour issues will be addressed and mitigated through an odour management plan and defined procedure within the site's EMS.</p> <p>Odour monitoring will take place daily as per EMS 8.01</p> <p>In addition, site has a Dust &amp; Odour Management System (Mist-Air System) that covers the main and secondary building. This can emit a spray that includes additives to help control any odours arising in exceptional circumstances while additional mitigation procedures, as described in the site Odour Management Plan, can be put in place.</p>	Low
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Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
Local human population and local environment	Accidental fire causing the release of polluting materials to air (smoke or fumes), water or land.	Respiratory irritation, illness and nuisance to local population. Injury to staff or firefighters. Pollution of water or land.	Air transport then inhalation.	Medium	Medium	Medium	Risk of accidental combustion of waste is moderate.	<p>FPMP in place to minimise the risk of a fire / reduce the impacts of a fire.</p> <p>A detection system is in place to enable a speedy incident response.</p> <p>The spread of fire will be restricted by firewalls and adequate separation distances between combustible materials.</p> <p>All hazardous wastes stored in secure containers.</p> <p>Waste is stored on an impermeable surface with sealed drainage and automated shut off valve in an event of a fire.</p> <p>Firewater will be contained on site through the use of penstock valves and site infrastructure.</p> <p>No tyres will be stored on site</p>	Low
All surface waters close to and downstream of site.	Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste e.g. containing suspended solids.	Acute effects: oxygen depletion, fish kill and algal blooms. Impact on newt population.	Direct run-off from site across ground surface, via surface water drains, ditches etc.	Medium	Medium	Medium	<p>Permitted waste types do not include sludges or liquids so only a medium magnitude risk is estimated. There is potential for contaminated rainwater run-off from wastes stored outside buildings especially during heavy rain.</p> <p>Road sweepings bay has dedicated foul drainage for run-off.</p>	<p>All liquids shall be provided with secondary containment (applies to both wastes and non-wastes such as fuels). Run-off is restricted and storage of non-hazardous wastes normally in bulk containers or buildings. Hazardous wastes are stored in secure containers and external waste bays are covered.</p> <p>Waste storage and treatment on impermeable surface with sealed drainage.</p> <p>Road sweepings are stored in dedicated, covered bays and are passively dewatered on an impermeable surface to foul drainage with a penstock valve.</p> <p>Spill kits located around the site in key locations, e.g. near the fuel tanks. Staff trained to use spill kits to clear up spillages immediately upon discovery.</p> <p>Only clean rainwater will be used to fill the newt pond.</p>	Very low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
<b>Abstraction from watercourse downstream of facility (for agricultural or potable use).</b>	As above	Acute effects, closure of abstraction intakes.	Direct run-off from site across ground surface, via surface water drains, ditches etc. then abstraction.	Medium	Medium	Medium	Watercourse must have medium / high flow for abstraction to be permitted, which will dilute contaminated run-off.	The permitted activities shall not be within 50m of any well, spring, or borehole used for the supply of water for human consumption, including private water supplies.	Low
<b>Local human population</b>	Contaminated waters used for recreational purposes	Harm to human health - skin damage or gastro-intestinal illness.	Direct contact or ingestion	Low	Medium	Low	Unlikely to occur, but might restrict recreational use.	All liquids shall be provided with secondary containment (applies to non- wastes such as fuels) Waste storage and treatment on impermeable surface with sealed drainage.	Very low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
Local human population and all surface waters close to and downstream of site.	Serious Fire	Nuisance, harm to human health, loss of amenity, deterioration of water quality	Air transport then inhalation or deposition. Direct run off of fire water across site to surface waters.	Low	High	Medium	Waste fires are not common but approximately 300 fires pa linked to waste activities. Impact on health and amenity can be significant for many days or weeks. In event of fire, fire water can be produced for days/ weeks. Contaminated firewater run-off can kill fish and aquatic life.	Tonnage is less than 55ktpa Fire Prevention and Mitigation Plan in place. Firewater will be contained on site through the use of penstock valves and site infrastructure.	Low

## **5.0 Conclusion**

This environmental risk assessment has been undertaken as stipulated by regulatory guidance. The assessment is provided as part of application for a bespoke environmental permit for the Colomendy Waste Transfer Station.

This qualitative risk assessment has considered noise, fugitive emissions, dust, releases to water, litter, and potential for accidents and incidents. The assessment concludes that with the implementation of the risk management measures described above, potential hazards from the proposed development are not likely to be significant and no further assessment is required.

## 6.0 Appendix 1: Identified Receptors within 1km of the Environmental Permit Boundary

Receptor Name	Receptor Type	Approx. Distance from Site Boundary (m)	Direction from Site
<b>21st Webb</b>	Commercial	610	SE
<b>Acre House Equestrian</b>	Commercial	610	SE
<b>A &amp; D Motor Cycles Ltd</b>	Commercial	610	SE
<b>Adjustamatic Beds Ltd</b>	Commercial	555	SE
<b>AG Leisure</b>	Commercial	405	SE
<b>ALDI</b>	Commercial	905	SE
<b>Aqualeisure</b>	Commercial	240	SE
<b>Baa Stool Ltd.</b>	Commercial	50	SE
<b>ATS Euromaster Denbigh</b>	Commercial	650	SE
<b>Beth's Sandwich Bar</b>	Commercial	665	SE
<b>Birch Hire</b>	Commercial	235	SE
<b>Blind Solutions Ltd Workshop</b>	Commercial	555	SE
<b>Brady Global Ltd</b>	Commercial	375	SE
<b>BrickPlus</b>	Commercial	330	SE
<b>Breedon Denbigh Quarry — Aggregates</b>	Commercial	650	SW
<b>CAD RECYCLING LTD</b>	Commercial	610	SE
<b>Capel Y Fron</b>	Place of worship	910	SE
<b>Car Hire Locally</b>	Commercial	235	SE
<b>Cake to Cake</b>	Commercial	770	SE
<b>Castle Steel Fabricators</b>	Commercial	445	SE
<b>Catalyst Systems</b>	Commercial	280	SE
<b>Celtic Dreams</b>	Commercial	720	SE
<b>Clwb Rygbi Dinbych</b>	Leisure	450	SE
<b>Clwyd Wood Products</b>	Commercial	665	SE
<b>Clwydian</b>	Commercial	665	SE
<b>Clwydian Leasing</b>	Commercial	665	SE
<b>Con Amici</b>	Commercial	850	SE
<b>CVAM Ltd</b>	Commercial	725	SE
<b>D Jones Plant Hire &amp; Sales Ltd</b>	Commercial	360	SE
<b>DAS Outdoors</b>	Commercial	370	SE
<b>DB Touring</b>	Commercial	660	SE
<b>Denbigh Ambulance Station (NHS Supply Store)</b>	Other Services	50	SE
<b>Denbigh Auto Body</b>	Commercial	575	SW
<b>Denbigh Building Plastics Limited</b>	Commercial	605	SE
<b>Denbigh Carpet &amp; Bed Centre</b>	Commercial	710	SE
<b>Denbigh Locksmiths</b>	Commercial	590	SE
<b>Denbigh Plant Services - Denbigh</b>	Commercial	570	SE
<b>Denbigh Museum / Amgueddfa Dinbych</b>	Leisure	955	SE
<b>Denbigh waste and recycling park</b>	Other services	670	SE

Receptor Name	Receptor Type	Approx. Distance from Site Boundary (m)	Direction from Site
<b>Denbighshire Antiques</b>	Commercial	730	SE
<b>Denbighshire Leisure Ltd</b>	Leisure	525	SE
<b>Denbighshire Music Co-operative</b>	Education	610	SE
<b>Dovecote Brewery</b>	Commercial	445	SE
<b>DWR CYMRU WELSH WATER</b>	Other services	610	SE
<b>Drysuit Doctor</b>	Commercial	335	SE
<b>E. Jones &amp; Son</b>	Commercial	380	SE
<b>Emyr Evans</b>	Commercial	400	SE
<b>ForFarmers</b>	Commercial	10	SE
<b>G &amp; G Motors NW Ltd</b>	Commercial	255	SE
<b>Glyn Evans Autoclinic Ltd</b>	Commercial	490	SE
<b>Graig Motors</b>	Commercial	610	SW
<b>Happy Homes Furniture Factory</b>	Commercial	220	SE
<b>Harrison Machinery Ltd</b>	Commercial	885	NE
<b>Henllan Bakery</b>	Commercial	380	SE
<b>HENLLAN BREAD</b>	Commercial	380	SE
<b>Howdens – Denbigh</b>	Commercial	545	SE
<b>J &amp; G Tyres</b>	Commercial	675	SE
<b>Humphreys Signs Ltd</b>	Commercial	415	SE
<b>Jewson Denbigh</b>	Commercial	255	SE
<b>Lawson Civil Engineering &amp; Utilities Ltd</b>	Commercial	780	SW
<b>Londis</b>	Commercial	745	SE
<b>Mac3</b>	Commercial	590	SE
<b>maldwyn car wash</b>	Commercial	655	SE
<b>Malmö International</b>	Commercial	420	SE
<b>Marg's Takeaway</b>	Commercial	325	SE
<b>Malpas Tractors</b>	Commercial	375	SE
<b>Maldwyn Williams Ltd Garage Services</b>	Commercial	665	SE
<b>Mars-Jones Ltd</b>	Commercial	305	SE
<b>Mason's Arms</b>	Commercial	935	SE
<b>McColl's</b>	Commercial	735	SE
<b>Marg's Cafe</b>	Commercial	665	SE
<b>Meifod Wood Products</b>	Commercial	420	SE
<b>Meirion Davies &amp; Co</b>	Commercial	480	SE
<b>MGM-Worktops</b>	Commercial	345	SE
<b>MJ Driver Training</b>	Commercial	955	SW
<b>Monster Munchiez Cafe</b>	Commercial	450	SE
<b>Morris E G</b>	Commercial	345	SE
<b>Motor World Denbigh</b>	Commercial	245	SE
<b>Nixon Plumbing &amp; Heating</b>	Commercial	230	SE
<b>NHC Technology Ltd.</b>	Commercial	555	SE
<b>North Wales Police</b>	Emergency Services	820	SW

Receptor Name	Receptor Type	Approx. Distance from Site Boundary (m)	Direction from Site
<b>oelheld UK Ltd</b>	Commercial	655	SE
<b>Oshwash</b>	Commercial	610	SE
<b>Pen-Y-Bryn Joinery Ltd</b>	Commercial	340	SE
<b>Plas Eleri Nursing Home</b>	Healthcare	695	SE
<b>Pressed 2 Perfection</b>	Commercial	590	SE
<b>Pro Finish Cosmetic Car Repairs</b>	Commercial	665	SE
<b>R R Auto</b>	Commercial	670	SE
<b>Ravenscroft &amp; Thackeray Fine Foods</b>	Commercial	340	SE
<b>R Smith &amp; Son</b>	Commercial	630	SW
<b>Rich Thomas Personal Training</b>	Commercial	320	SE
<b>Riley Land Rover</b>	Commercial	660	SE
<b>Rizzi</b>	Commercial	740	SE
<b>Ruthin &amp; Denbigh Gymnastics Club Ltd</b>	Leisure	635	SE
<b>Sam's cafe</b>	Commercial	610	SE
<b>Screwfix</b>	Commercial	905	SE
<b>Shell</b>	Commercial	755	SE
<b>Shorecliffe Training</b>	Commercial	325	SE
<b>Simply Fish &amp; Chips</b>	Commercial	935	SE
<b>St. Brigid's School</b>	Education	950	NE
<b>Star Premier Stores</b>	Commercial	700	SE
<b>Telsol</b>	Commercial	575	SE
<b>The Garment Spa</b>	Commercial	255	SE
<b>Travis Perkins</b>	Commercial	565	SE
<b>Travis Perkins Denbigh</b>	Commercial	565	SE
<b>Vale Of Clwyd Memorials</b>	Commercial	350	SE
<b>W T Pritchard Ltd</b>	Commercial	425	SE
<b>Welsh Adventure Racing</b>	Commercial	495	NE
<b>Welsh Health Supplies</b>	Commercial	200	SW
<b>Visage Beauty Salon</b>	Commercial	665	SE
<b>Y Bwthyn Bach</b>	Commercial	615	NE
<b>Wern</b>	Commercial	665	SE
<b>Ysgol Frongoch County Primary School</b>	Education	890	SE
<b>Ysgol Twm O'r Nant</b>	Education	980	SE
<b>Ty'n Yr Eithin</b>	Commercial	810	NE



## 7.0 Appendix 2: Extract from Newt Mitigation Strategy surveys

### The Conservation of Habitats and Species Regulations 2017

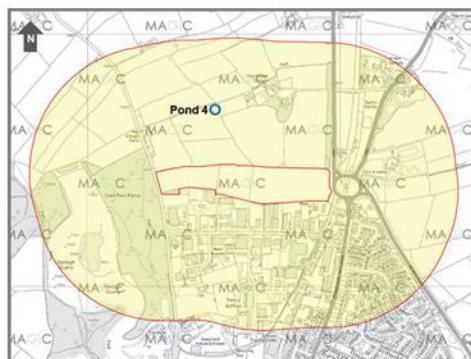


Fig 7: Pond location plan



P16: Pond 4: Viewed from the SE, looking NW

Habitat Suitability Index Pond 4: SJ0550467703		
Distance from the site	Circa: 220m NW	
HSI Categories	HSI Values	HSI Score
Location	optimal	1
Pond area	700m <sup>2</sup>	1
Pond drying	rarely dries	1
Water quality	moderate	0.67
Shade	80%	0.6
Fowl	absent	1
Fish	absent	1
Pond count	12	1
Terrestrial habitat	poor <25% in 250m surround	0.33
Macrophytes	50%	0.8
<b>Result</b>	<b>Good</b>	<b>0.79</b>

Fig 8: Pond 4: 'Good' HSI Score

Survey results (35 bottle traps)			Pond 4: SJ0550467703	
Date	Method	Results + Peak C		Weather
10/4/19	Torch	13Tc	13	Overcast/Clear, min temp 5°C
	Trap	0		
17/4/19	Torch	9Tc	9	Clear, still, min temp 8°C
	Trap	2Tc		
08/5/19	Torch	12Tc	12	Overcast, light breeze, min temp 8°C
	Trap	0		
20/5/19	Torch	1Tc	2	Overcast/Clear, min temp 7°C
	Trap	2Tc		
27/5/19	Torch	0	0	Overcast, min temp 6°C
	Trap	0		
13/6/19	Torch	2Tc	2	Overcast, min temp 8°C
	Trap	0		
GCN eggs found on 10/4/19				

Fig 9: Pond 4, survey results

Pond 4 represents 'good' potential breeding habitat; however, it has dried out over the last two summers, which is certain to have had a detrimental effect on the overall numbers of amphibians present. Great Crested Newts and their eggs were detected on 10/4/19 with a peak count of 13 adults recorded on the same evening. Macrophytes noted included; Water Soldier, Water Forget-me-not, Water Starwort, Flote-grass and Bur-reed.

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