

BRL 4 – BRIDGWATER RECYCLING LIMITED - soil and aggregate wash plant - Land at Somerset BRG, Bridgewater, Somerset, TA6 6LL

Environmental Risk Assessment

As part of an application for an environmental permit Operators must assess the risk to the environment and human health from the activities they seek to permit.

This Environmental Risk Assessment has been undertaken in accordance with the online Environment Agency Guidance for undertaking environmental risk assessments.

Environmental risks relevant to the proposed activities are:

- Emissions to Air;
- Emissions to Water;
- Emissions to Land;
- Odour;
- Noise;
- Litter;
- Pests;
- Vandalism;
- Fire; and
- Incompatible Feedstock.

For each of the above environmental criteria the approach to the assessment has followed the following four stage process:

- Identify the risks;
- Assess the risks (assuming those control measures proposed are in place);
- Choose appropriate further measures to control these (if required); and
- Present the assessment.

Hazard	Receptor	Pathway	Risk Management Techniques	Probability of Exposure	Consequences	Overall Risk (following mitigation)
Emissions to land	Groundwater /Geology / Surface Water Not within source protection zone Secondary aquifer	Water borne	- There are no point source emissions to ground water. - All washing activities will take place on an impermeable surface forming part of a sealed drainage system. - The concrete pad drains to a central sump, which remains at a low level, as water is required within the wash plant or if water is lost to evaporation from washed aggregates and remains within the filter cake. As a result, water is constantly pumped to the plant. - The concrete pad will also feature a geo textile membrane to prevent migration of liquids to the groundwater. - There will be no hazardous wastes delivered to site. - Road sweepings will be stored on a sealed concrete pad and drain to a separate sump. - Spill kits will be strategically located around site. These are subject to regular checks in the planned preventative maintenance system. - The wash plant employs a water treatment facility that aims to remove suspended solids from the wash waters to use them again within the washing process. - Part of the water treatment process is the 'pressing' of the thickened sludge via pressing in a filter press. This produces a filter cake that will still contain some moisture. The filter cake is dropped from the press onto the sealed concrete pad. Any runoff is again captured in the sump. The cake is stored on concrete pad until it is removed from site for use in recovery projects or disposed of in a landfill. - If in the event of additional liquid capacity being required a tanker would be employed to remove the liquids to a permitted waste facility. This would also happen when the water treatment system is cleansed for maintenance or contamination is observed or identified during testing. - Road sweepings will de-water via gravity and the resulting solids will be washed within the wash plant to recover the sand, grit and stones within them. The sweepers will tip there loads onto the sealed concrete pad and allow the water drain to the sump with the other liquids. - Immediate action to be taken in event of any major spills. Spillage to be cleared immediately and placed in containers for offsite disposal at an appropriate facility. EA to be informed. - The anionic flocculant is stored in powder form in 20kg bags and is added to an automatic mixing and dosing system to make up a small batch of liquid solution which is then dosed into the thickener, also the flocculent will be stored within the water treatment plant on the sealed drainage system. As a result,	Low: all runoff is controlled and contained on site, therefore the probability of exposure is low	Contamination of groundwater	VERY LOW Due to the proposed management techniques and drainage arrangements

			there is no secondary containment required for a bulk 1,000 litre IBC of premixed solution common on other wash plants. - The use of a road sweeper on the main road outside the site will remove any debris that may not have been removed by the wheel wash, this will prevent any run-off to surface water drains and watercourses. - The wash plant and mobile plant for loading requires oils, grease and fuel to operate. None of these potentially polluting liquids are stored within the permitted area. - Site access road is laid to concrete and mechanically swept each day.			
Emissions to water	Surface Water / River Parrett	Drains, waterways and hard surfaces via runoff	- The wash plant is located on an impermeable concrete pad as part of a sealed drainage system. - The concrete pad drains to a sump which remains at a low level as water is required within the wash plant as water is lost to evaporation from washed aggregates and remains within the filter cake. As a result, water is constantly pumped to the plant. - There will be no hazardous wastes delivered to site. - The wash plant is located on an impermeable concrete pad which drains to a sealed sump. The pad will be constructed on top of geo-membrane. This provides the sealed drainage system. - Road sweepings will be stored on a sealed concrete pad. - Spill kits will be strategically located around site. These are subject to regular checks in the planned preventative maintenance system. - The wash plant employs a water treatment facility that aims to remove suspended solids from the wash waters to use them again within the washing process. - Part of the water treatment process is the 'pressing' of the thickened sludge via pressing in a filter press. This produces a filter cake that will still contain some moisture. The filter cake is dropped from the press onto the sealed concrete pad. Any runoff is again captured in the sump. The cake is stored on concrete pad until it is removed from site for use in recovery projects or disposed of in a landfill. - If in the event of additional liquid capacity being required a tanker would be employed to remove the liquids to a permitted waste facility. This would also happen when the water treatment system is cleansed for maintenance or contamination is observed or identified during testing. - Road sweepings will de-water via gravity and the resulting solids will be washed within the wash plant to recover the sand, grit and stones within them. The sweepers will tip there loads	Low: spills / leaks could potentially pollute the local watercourses namely the River Parrett	Pollution of the local watercourses namely the River Parrett	VERY LOW due to the proposed risk management techniques

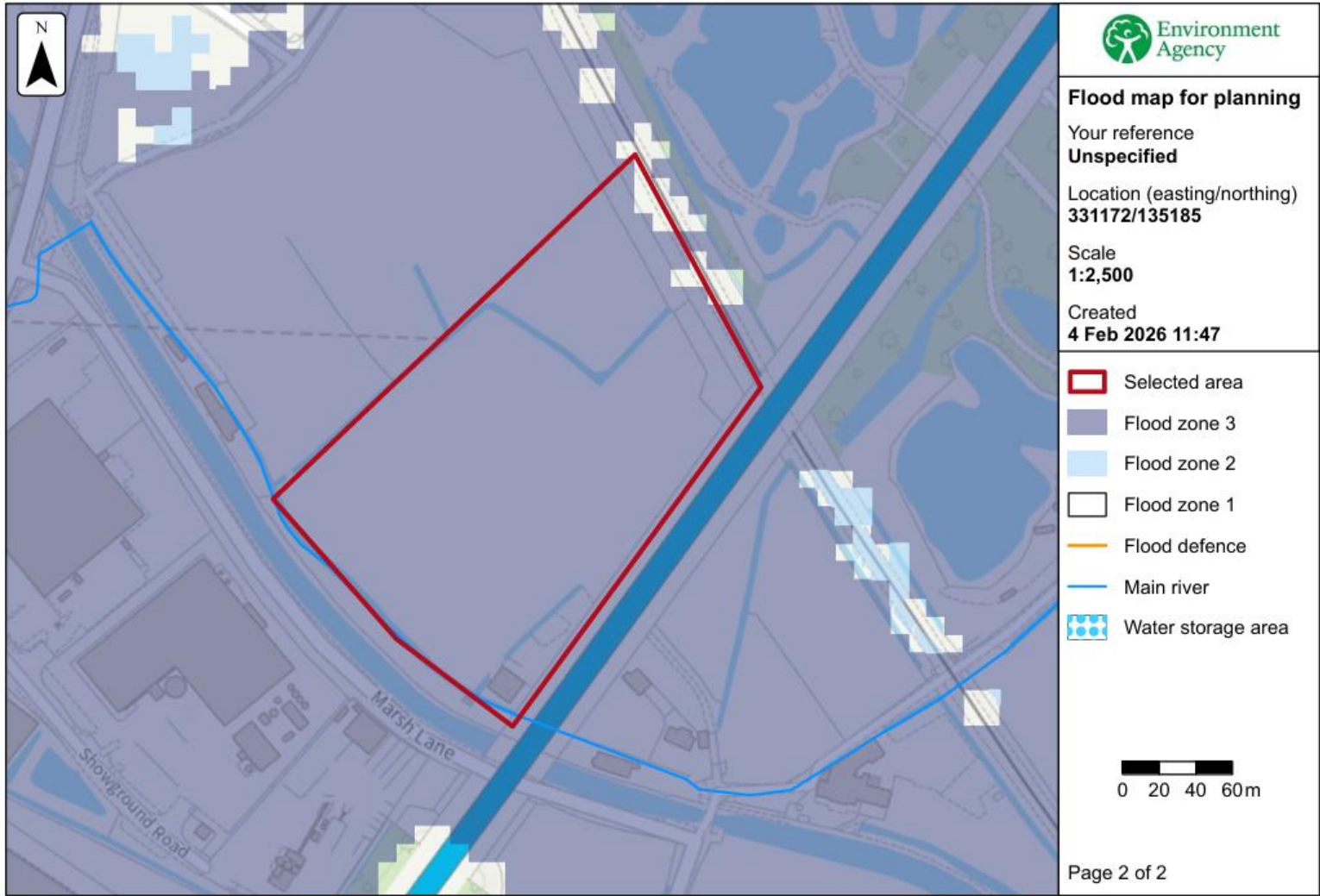
			onto the sealed concrete pad and allow the water drain to the sump with the other liquids. • Minor spills to be cleaned up immediately using spill kits. Resultant materials to be placed in container for offsite disposal to appropriate facility. • Immediate action to be taken in event of any major spills. Spillage to be cleared immediately and placed in containers for offsite disposal at an appropriate facility. EA to be informed. • There will be no point source emissions to land arising from the proposed facilities. • The anionic flocculant is stored in powder form in 20kg bags and is added to an automatic mixing and dosing system to make up a small batch of liquid solution which is then dosed into the thickener, also the flocculent will be stored within the water treatment plant on the sealed drainage system. As a result, there is no secondary containment required for a bulk 1,000 litre IBC of premixed solution common on other wash plants. • Spill kits will be strategically located around site. These are subject to regular checks in the planned preventative maintenance system. • Staff will be trained in how to deal with a spill. • Minor spills to be cleaned up immediately using spill kits. Resultant materials to be placed in container for offsite disposal to appropriate facility. • Immediate action to be taken in event of any major spills. Spillage to be cleared immediately and placed in containers for offsite disposal at an appropriate facility. EA to be informed. • The wash plant and mobile plant for loading requires oils, grease and fuel to operate. None of these potentially polluting liquids are stored within the permitted area. • Road sweepers will be made available to clean roads within the site and outside this being, the main pathway surface water drains to the River Parrett • Site access road is laid to concrete and mechanically swept each day.			
Noise and vibration	Local Residents Closest residents located at 60m to the NW of the site boundary at canal cottages	Airborne / ground	• 3 m in height will be required on the northern and west site boundaries with residential neighbours. • Environment Officer has confirmed there have been no noise complaints. • There will be no increase in the permitted tonnage of the site. • Vehicle deliveries will only take place during daytime hours. • On site, vehicles will be fitted with 'white noise' reversing alarms. • No activities will take place at night • Speed limits in place of 5mph to reduce noise generation on the access roads.	Low – due to the mitigation methods taken identified within the NIA and NMP	Nuisance in the form of noise and vibration	VERY LOW due to the management techniques, modern equipment, maintenance and site walls.

			• Concreted access roads to be kept in good order to prevent potholes that may give rise to noise incidents. • Where possible vehicles will be reloaded with recycled materials when leaving the site meaning less vehicle movements and reduced empty vehicle bodies which can produce noise. • Stockpiles of waste will always be lower than the bay walls, therefore loading and unloading will be behind the bund. • A preventative maintenance system is implemented, which covers all plant and equipment, including the wash plant. This will ensure no deterioration of plant or equipment that would give rise to increases in noise generation. • All equipment has been designed to ensure that any noise does not present an issue to the employees at the site under the Control of Noise at Work Regulations. • All exhausts are fitted with silencers. • All vehicles and equipment will be switched off when not in use and not allowed to idle. • The site operates a complaints investigation procedure which involves efficient mitigation if a complaint is found to be substantiated. All complaints are recorded and reviewed regularly. • The distance between stockpiles of recycled materials and vehicles to be loaded is kept to minimum to reduce vehicle movement. • Sensitive receptors have been identified. • Wash plant conveyors are adjustable to reduce the drop height of washed aggregates. Reduced drop height will reduce noise. • Training will be provided for all staff operating the site. This training will include noise mitigation measures. • In the event of an increase in noise complaints a noise impact assessment would be carried out.			
Odour	Local Residents	Airborne	• Soils and inert wastes are not commonly odorous. • To prevent excessively odorous waste from arriving on site, the site has stringent waste acceptance procedures waste will be rejected by site should it be deemed malodorous. • Inspections will happen daily to inspect the site for odours. Any odorous waste will be prepared for removal off site immediately. • Sumps will be regularly cleaned and the site will emptied good housekeeping measures. • Any complaints will be actioned in accordance with the site complaints procedure and recorded in the site diary.	Low: due to the activities being managed by odour management techniques	Nuisance	VERY LOW due to the proposed risk management technique
Dust	Local Residents Local Residents Closest residents located at 60m to the NW of	Airborne	• All loaded incoming and exporting vehicles will be covered. • Road sweepers will be made available to clean roads within the site and outside. • Water Bowsers will be deployed in dry weather to dampen down. • Screens and crushers will have dust suppression installed.	Low: due extensive dust suppression equipment and methods being employed	Nuisance	VERY LOW due to the proposed risk management techniques

	the site boundary at canal cottages		- Washed aggregates contain significantly less dust resulting in less dust being blown from stockpiles. - Any complaints will be actioned in accordance with the site complaints procedure and recorded in the site diary. - Rainbird system allows the entire site to be dampened down quickly and efficiently. - The site has its own weather station that provides wind information as well as a wind sock as a visual guide to the local wind conditions. - Operations likely to generate dust will not be carried out in high winds. - All operations will be in line with the Dust Management Plan. - The entrance road after the wheel wash is made of concrete and can easily be cleansed. - This road will be swept throughout the day by one of the company's own mechanical road sweepers.			
Litter	Local Residents Closest residents located at 60m to the NW of the site boundary at canal cottages	Airborne & migration	- All incoming and exporting waste vehicles will be covered. - Feedstock containing litter would be deemed unsuitable and rejected. - The site shall be inspected daily by the site manager and any litter or accumulated debris shall be dealt with immediately. - Any complaints will be actioned in accordance with the site complaints procedure and recorded in the site diary - Litter will be picked on a weekly basis.	Low: due to feedstock being assessed for litter	Nuisance	VERY LOW
Pest	Local Resident Closest residents located at 60m to the NW of the site boundary at canal cottages	Airborne and migration	- The waste types do not attract pests. - Should pests be identified, reasonable measures will be taken to use commercially available products and services to control pests.	VERY Low risk of pets on site is possible	Nuisance	VERY LOW due to proposed risk management techniques
Vandalism	Operator	The site could be subject to intentional vandalism and damage by intruders / trespassers who could cause damage or harm to the site or cause fires.	- The site has a CCTV system. - The site entrances are secured by lockable gates. - Site is secure and the entire site is bounded by fencing. - Unauthorised access is prohibited onsite. - The site perimeter is inspected daily by operations staff to identify deterioration and damage and the need for repair. - Fencing is maintained and repaired to ensure its continued integrity. If damage is sustained, repair will be made within the same working day. If this is not possible, suitable measures will be taken to prevent unauthorised access to the site and permanent repairs will be affected as soon as is practicable. - All visitors to the site are required to register in the visitor's book and sign out again on exit, thereby minimising the risk of unauthorised visitors on the site.	Low: the occurrence of vandalism taking place on site is highly unlikely	Nuisance, damage or fire	VERY LOW due to the proposed risk management techniques
Fire	Operator / Residential	Windborne	- The site will not accept flammable wastes. - Wastes processed on the site are not combustible.	VERY Low: the occurrence of a fire taking place	Fire	VERY LOW

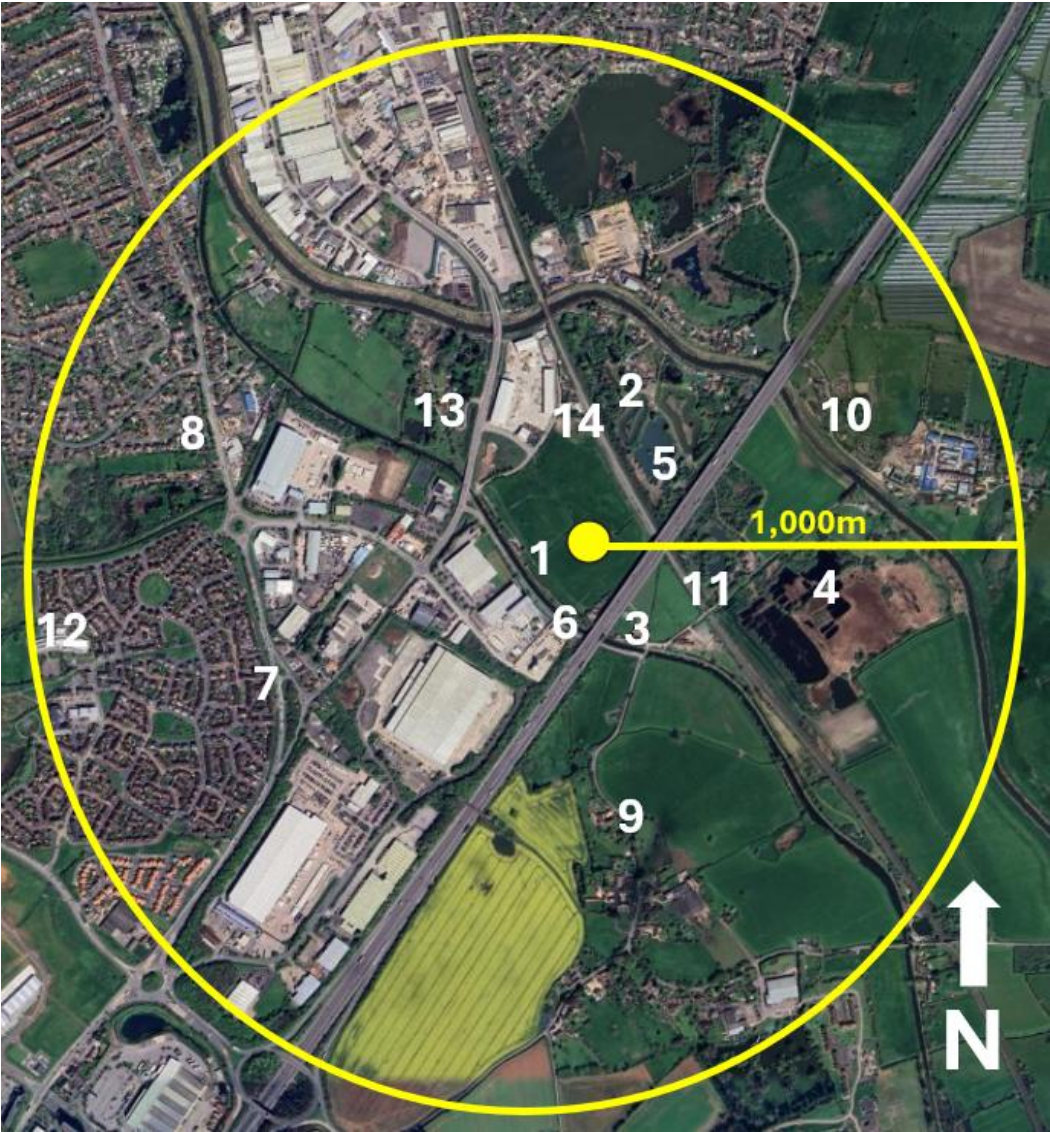
	Properties		A planned preventative maintenance system is in operation for all plant and equipment. This will reduce the likelihood of fire starting at this source.			Due to lack of combustible waste
Incompatible Feedstock	Operator / Residential Properties	If incorrect waste is accepted on site it could result in adverse emissions/ breaking of equipment	- All wastes accepted onto site have been subject to 'pre-acceptance' in accordance with the sites Environmental Management System. - Waste acceptance procedures are implemented, which control all incoming wastes. - Any non-conforming waste will be quarantined and rejected from site in accordance with the sites Environmental Management System and waste acceptance procedures.	Low: off-site receptor impacts	Nuisance /Adverse Emissions	VERY LOW due to the proposed risk management techniques
Flooding	Operator	Surface and coastal waters	- There are no plans for secondary containment as the sealed drainage system acts as containment for any run-off. This includes surface water and rainwater as the washing process is a water negative process due to evaporation and moisture within the washed materials and filter cakes. All collected water is pumped to the water treatment system for the washing process. - The site sites within Flood zone 3 - Planning has been applied for to raise the level of the land so that the site will not be prone to flooding.	Low: off-site receptor impacts	Flooding	VERY LOW due to the proposed processes and management techniques as described within the summary EMS

Environment Agency Flood map for Planning



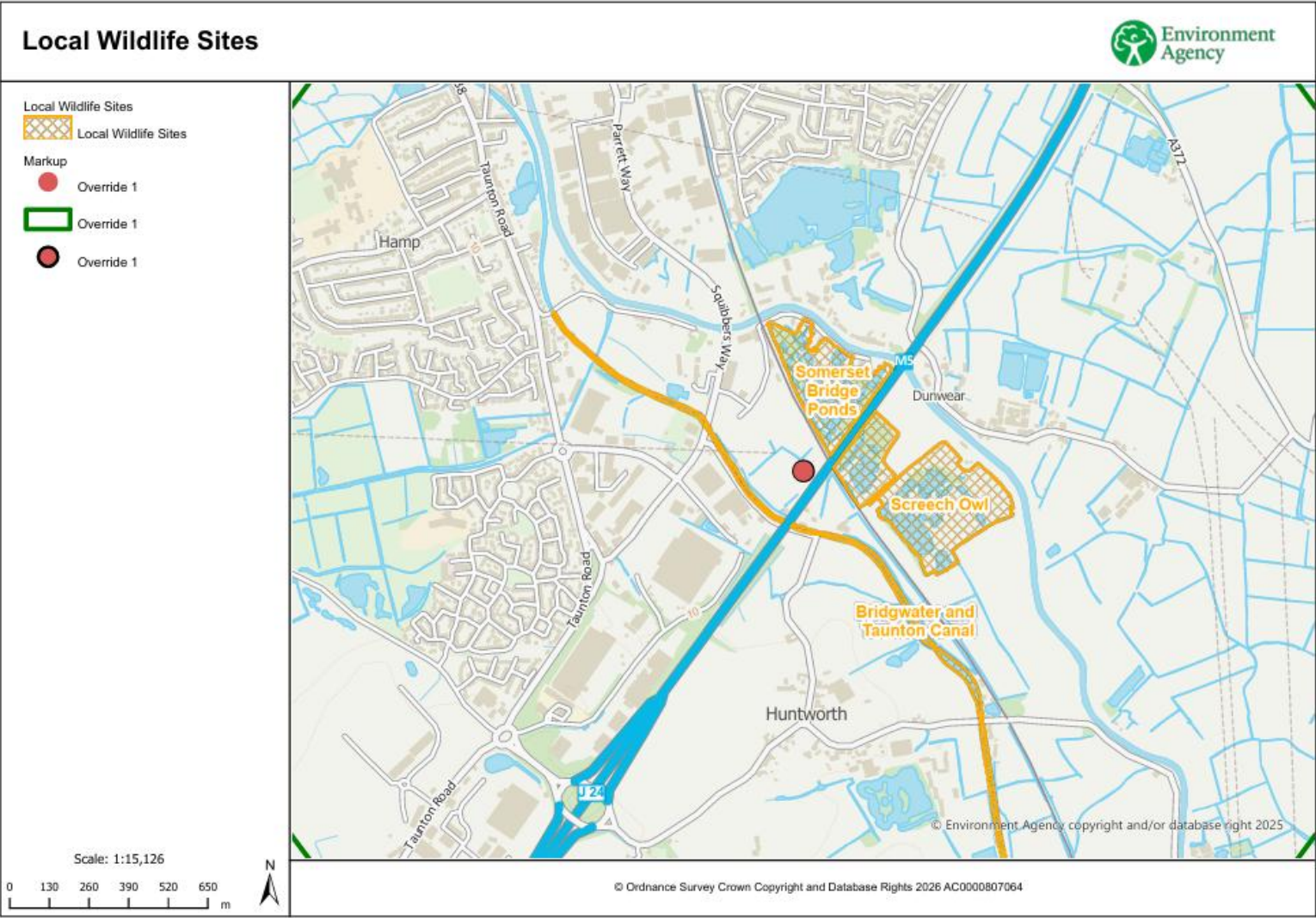
Sensitive Receptors

Ref	Receptor	Description	Direction from site boundary (m)	Approximate distance from Site Boundary (m)
1	Dwellings	Dwellings private road	NW	60
2	Dwellings	Dwellings private road	N	310
3	Dwellings	Dwellings private road	SE	105
4	Local Wildlife Site	Screech Owl Ponds	NE	212
5	Local Wildlife Site	Somerset Bridge Ponds	N	100
6	Local Wildlife Site	Bridgewater and Taunton Canal	S	10
7	Dwellings	Marsh Lane	SW	580
8	Dwellings	Rhyne Bridge	NW	650
9	Dwellings	Hunsworth Lane	SE	335
10	Dwellings	River Lane	NE	635
11	Fishery	Willow Fisheries	E	85
12	School	Somerset Bridge Primary	W	965
13	Dwellings	Old Basin	NW	350
14	Dwellings	Somerset Bridge	NNW	295



Local Wildlife Sites

Hazard	Receptor	Reason for designation	Pathway to site	Risk Management Techniques	Probability of Exposure to site	Possible Consequences	Overall Risk (following mitigation)
Site activity of crushing, screening and washing waste colliery spoil	Screech Owl Ponds Somerset Bridge Ponds Bridgewater and Taunton Canal	Screech Owl Ponds in Somerset managed by Bridgewater AA offer a unique fishing experience with shallow ponds surrounded by reeds. With limited space for fishing in the main ponds, a 1.5-acre pond provides full access. Clear waters house various fish like tench, bream, roach, rudd, and occasionally carp, making it a peaceful and rewarding fishing destination. Ponds designated as a Local Wildlife Site containing a variety of aquatic life. Canal designated as a Local Wildlife Site containing a variety of aquatic life.	Dust arising from the site would be airborne.	Dust – Smothering plants (a) enclosures or hoods shall be installed on feed hoppers and conveyor outlet points to minimise dust; (b) point-source water misting systems or water sprays shall be installed over the feed hoppers and outlet points; (c) drop heights from equipment and conveyors shall be minimised or hoods installed on the outlet points to reduce dust; (d) a combination of fixed and mobile dust suppression units shall be used to control point sources of dust; (e) wind breaks shall be used to minimise wind whip and dust from stockpiles and the treatment area; (f) plant shall be inspected daily and managed to ensure it is operating to minimise the generation of dust; (g) plant and the areas around it and including access roads shall be cleaned to prevent dust generation. (h) Dust netting will be in place along the boundary adjacent to the Local Wildlife site (j) fixed water sprinklers will be in place to prevent dust leaving the site (k) The site will operate an approved Dust Management Plan Surface water The site is laid to hardstanding meaning there are no impermeable surfaces to generate run-off that may enter the watercourse. Disturbance The operation has been permitted since January 2021 with no deterioration of the Local Wildlife site Predation None of the waste streams accepted at the site will attract vermin or birds	Very Low:	Habitat at risk from any source and by any pathway. The risk of harm to protected sites include (but are not limited to) the following: -contaminated surface water run off -smothering -disturbance -predation -Dust	VERY LOW due to the proposed site mitigation and barriers to migration.

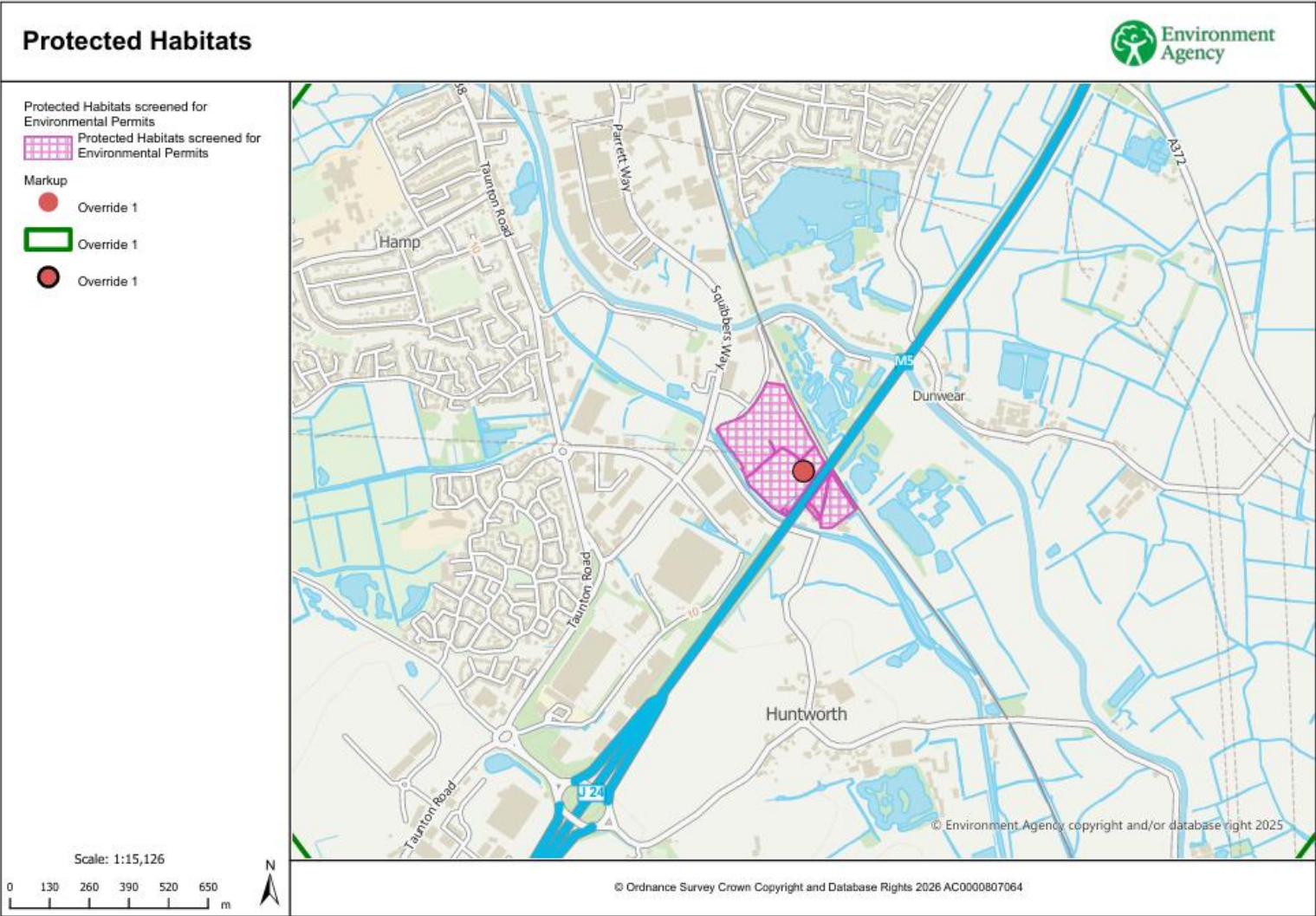




Protected Habitats

Hazard	Receptor	Reason for designation	Pathway to site	Risk Management Techniques	Probability of Exposure to site	Possible Consequences	Overall Risk (following mitigation)
Site activity of crushing, screening and washing waste colliery spoil	Coastal and Floodplain Grazing Marsh Deciduous woodland	The site will be built on the area designated as Coastal and Floodplain Grazing Marsh. This matter will be dealt with as a planning matter and no waste management activities will take place until planning is granted to mitigate the highlighted habitat. Habitat at risk of damage from emissions from the site.	Dust arising from the site would be airborne.	Dust – Smothering plants (a) enclosures or hoods shall be installed on feed hoppers and conveyor outlet points to minimise dust; (b) point-source water misting systems or water sprays shall be installed over the feed hoppers and outlet points; (c) drop heights from equipment and conveyors shall be minimised or hoods installed on the outlet points to reduce dust; (d) a combination of fixed and mobile dust suppression units shall be used to control point sources of dust; (e) wind breaks shall be used to minimise wind whip and dust from stockpiles and the treatment area; (f) plant shall be inspected daily and managed to ensure it is operating to minimise the generation of dust; (g) plant and the areas around it and including access roads shall be cleaned to prevent dust generation. (h) Dust netting will be in place along the boundary adjacent to the Local Wildlife site (j) fixed water sprinklers will be in place to prevent dust leaving the site (k) The site will operate an approved Dust Management Plan Surface water The site is laid to hardstanding meaning there are no impermeable surfaces to generate run-off that may enter the watercourse. Disturbance The operation has been permitted since January 2021 with no deterioration of the Local Wildlife site Predation None of the waste streams accepted at the site will attract vermin or birds	Very Low:	Habitat at risk from any source and by any pathway. The risk of harm to protected sites include (but are not limited to) the following: -contaminated surface water run off -smothering -disturbance -predation -Dust	VERY LOW due to the proposed site mitigation and barriers to migration.

Protected Habitats



Protected Species

Hazard	Receptor	Reason for designation	Pathway to site	Risk Management Techniques	Probability of Exposure to site	Possible Consequences	Overall Risk (following mitigation)
Site activity of crushing, screening and washing waste colliery spoil	Migratory fish species within the River Parrett European Eel <i>Anguilla Anguilla</i>	Migratory fish species protected under Protected under the European Eel Regulation (European Commission) No 1100/2007 and the Eels (England and Wales) Regulations 2009	Dust arising from the site would be airborne. Surface water runoff	Dust – Smothering plants (a) enclosures or hoods shall be installed on feed hoppers and conveyor outlet points to minimise dust; (b) point-source water misting systems or water sprays shall be installed over the feed hoppers and outlet points; (c) drop heights from equipment and conveyors shall be minimised or hoods installed on the outlet points to reduce dust; (d) a combination of fixed and mobile dust suppression units shall be used to control point sources of dust; (e) wind breaks shall be used to minimise wind whip and dust from stockpiles and the treatment area; (f) plant shall be inspected daily and managed to ensure it is operating to minimise the generation of dust; (g) plant and the areas around it and including access roads shall be cleaned to prevent dust generation. (h) Dust netting will be in place along the boundary adjacent to the Local Wildlife site (j) fixed water sprinklers will be in place to prevent dust leaving the site (k) The site will operate an approved Dust Management Plan Surface water The site is laid to concrete as part of a sealed drainage system. All surface water is gathered and stored within sumps. No surface water will leave the site.	Very Low:	Habitat at risk from any source and by any pathway. The risk of harm to protected sites include (but are not limited to) the following: -contaminated surface water run off -Dust – impacting on water quality.	VERY LOW due to the proposed site mitigation