



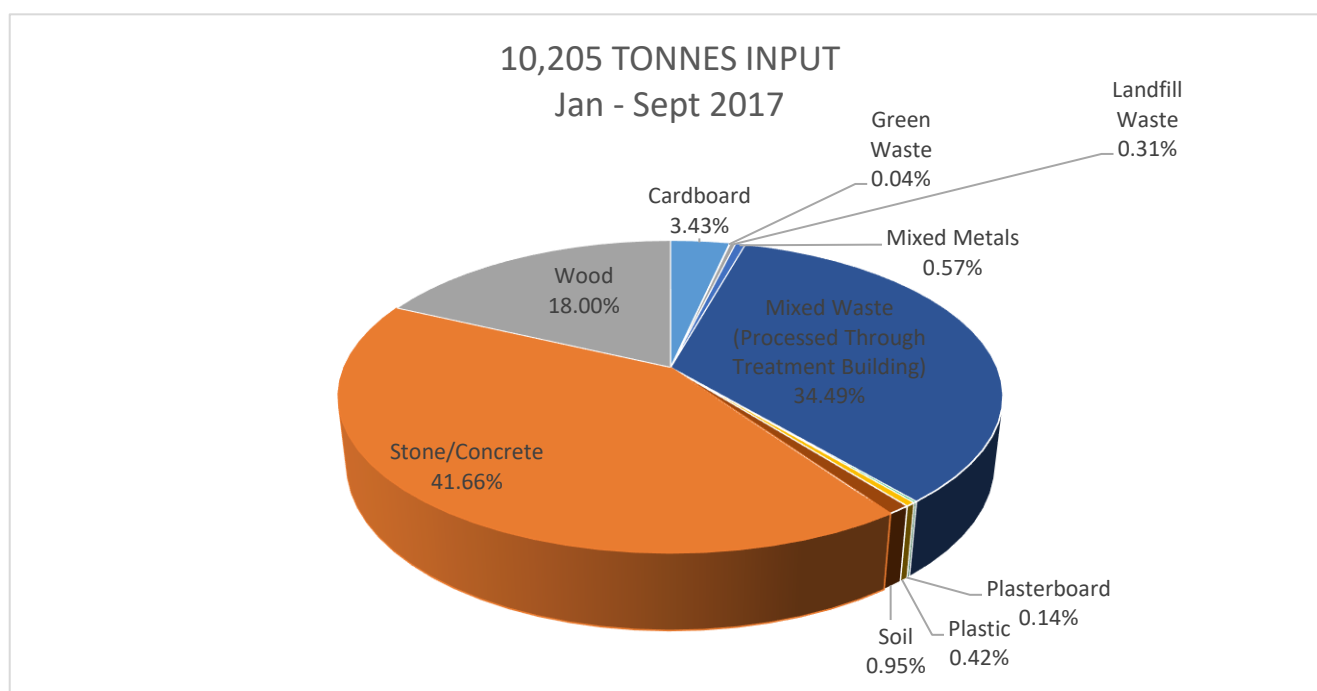
FIRE PREVENTION & MITIGATION PLAN

PONTCYNON TRANSFER STATION
PONTCYNON INDUSTRIAL ESTATE
ABERCYNON
MOUNTAIN ASH
CF45 4EP

October 2017

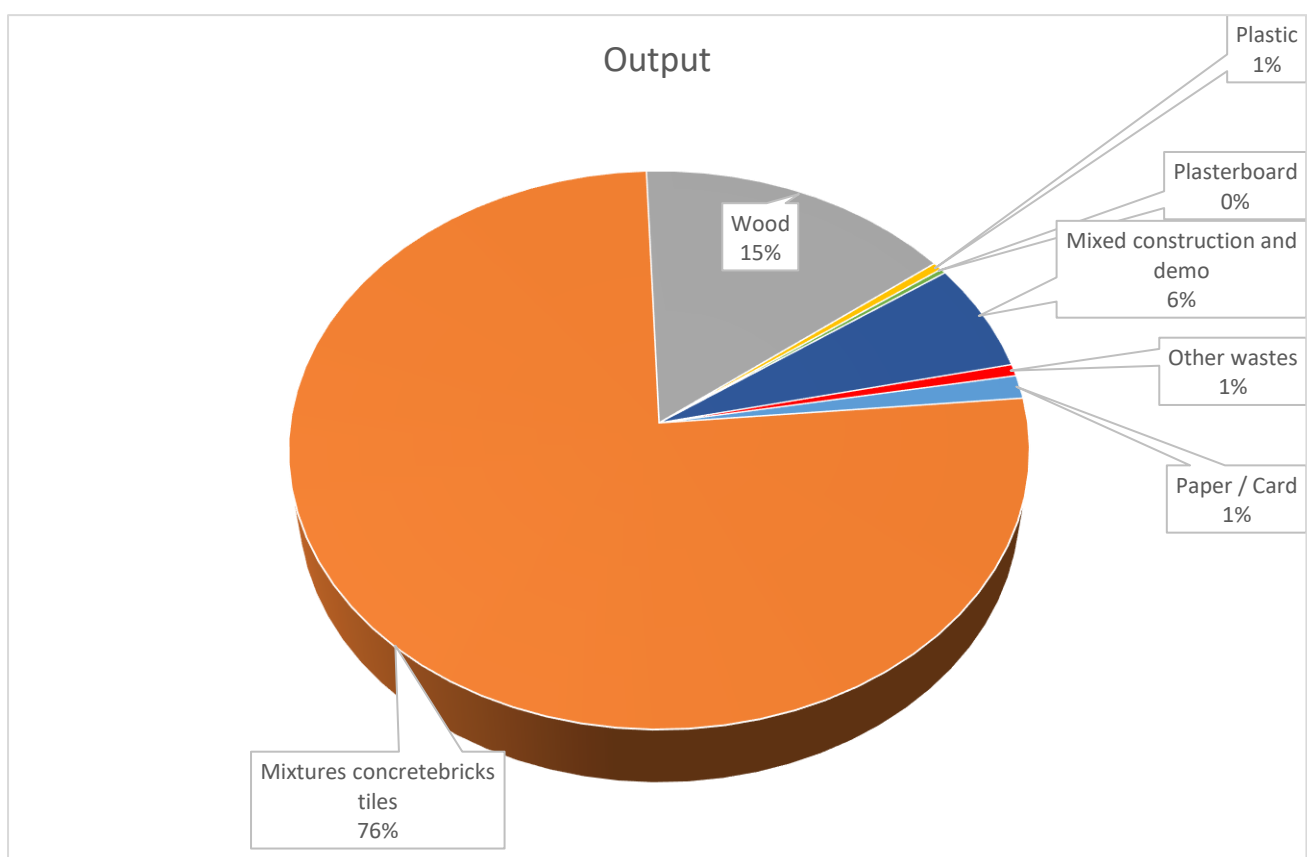
1. Greens Recycling Operations at Pontcynon

- 1.1. Greens recycling have operated the Pontcynon Wastes Transfer and Treatment facility since 2013.
- 1.2. The facility deals with mainly industrial and commercial wastes and some household wastes brought to site by Greens recycling's own haulage fleet.
- 1.3. The site has an indoor waste sorting facility, skip storage, construction waste pre-sorting area and a recycled aggregates production facility.
- 1.4. The facility, is permitted by Natural Resources Wales, to deal with up to 75,000 tonnes of waste per annum, however current facility throughput is more in the region of 20~25,000 tonnes per annum.
- 1.5. Natural Resources Wales, in response to numerous fire incidents at wastes transfer facilities has produced recent guidance for operators to assess their operations with regard to fire prevention and impact reduction should waste stockpiles be set alight.
- 1.6. This guidance has been derived from the waste industry's own WISH guidance which is based on real fire data and experience based around the storage of combustible waste material stockpiles.
- 1.7. The chart below shows a recent breakdown of the materials received at Pontcynon Transfer station.



- 1.8. The chart shows the benefits of Greens Recycling strategy of promoting better wastes management in the business community by offering incentives for customers to segregate their waste at source. This means that many materials come into the facility requiring little or no treatment and only approximately one third of the total wastes received require further significant sorting.

- 1.9. The greatest percentage of the incoming wastes are stone, concrete and brick which Greens recycle on site to produce recycled aggregates for the construction market.
- 1.10. The remaining 20% of source segregated material (wood, paper/cardboard etc.) get bulked up for larger scale transport to appropriate processors and do not need to go through the waste treatment building. These combustible materials are bulked up and stored in appropriate steel containers in the allocated positions in the yard (see appendix B)
- 1.11. For the purposes of this FPMP however it was necessary to review the risks associated with the incoming waste materials which are not source segregated and which therefore need separation treatment in the treatment building. The graph below provides a comprehensive breakdown of the materials that leave Greens Facility as products or segregated wastes destined for further processing / re-manufacture. The comparison of the input graph and the output graph allows us to determine the levels of combustible materials encountered within the Mixed Waste received into the treatment shed.
- 1.12. Determining the level of combustibility of the mixed waste is important as in terms of the FPMP as storing combustible wastes in a building carries higher fire risks.
- 1.13. The graph below shows an increase of hardcore materials (stone / concrete / brick etc.) from 42% (incoming) to 76% (outgoing) clearly showing that significant amounts of the mixed wastes are in fact stone/ concrete/ brick etc.



- 1.14. Analysis of the actual tonnages (for the analysis period Jan – Oct 2017) gives the percentage of these aggregate forming materials as 91.3% of the mixed waste input fraction. Therefore, the worst case scenario is that just 8.7% of these mixed materials could potentially be combustible, however this is unlikely to be the case as approximately 50% of this proportion is actually fines material rejected from the trommel screen which are mainly made up of soils and small glass particles and this fraction is highly unlikely to be combustible.
- 1.15. To ensure this fire risk reduction is maintained, the mixed waste undergoes a manual primary pre-treatment sort (in the pre-treatment area (see appendix B) prior to batch storage in the treatment shed. This ensures all the larger combustible artefacts such as wood and plastics are removed and stored in the appropriate external steel containers in the yard.
- 1.16. The fire risk for the mixed waste in the building therefore does not accord with the risks assessed for the stockpiled materials covered by the WISH guidance for segregated materials storage.
- 1.17. Given the above analysis, Green's fire risk assessment contends that the treatment shed mixed waste stockpile, at a ratio of approximately 5% combustible materials evenly disseminated through a matrix of 95% non-combustible hardcore renders the stockpile non-combustible in nature as there is not enough fuel to give rise to any sustainable burn.

2. Pontcynon Transfer Facility Operation :-

2.1. Waste Management :

- 2.1.1. Pontcynon transfer facility receives approximately 50 tonnes of waste per day via the company's own fleet of skip and rolloff vehicles. The majority of the waste as highlighted above is source separated by customers at their own facilities and these loads are bulked up into various single stream metal containers (wood, plastic, glass, uPVC, metals etc.) at separate locations in the yard (see appendix B).
- 2.1.2. Approximately 35% of waste is received as mixed waste and this material is tipped up in the pre-treatment bay in front of the treatment shed for the removal of the larger recyclable artefacts. From here it is stock piled into the treatment building for batch processing through the trommel and picking and sorting equipment.
- 2.1.3. The stockpile is processed approximately every 6 weeks / 1500 tonnes.
- 2.1.4. The overall majority of the wastes received are in the form of concrete and masonry products suitable after processing for re-sale into the recycled aggregates market via the application of the WRAP end of waste protocol. Aggregates are crushed and screened on the lower yard area.

- 2.1.5. Once the materials have processed through the treatment shed, the non-aggregate recyclates are added to the appropriate bulked up loads in their respective yard containers and when a sufficient quantity has been amassed they are sent to commercial re-processors for re-manufacture / recycling. The fines and rejects from the pre-treatment and treatment lines are sent to landfill.

3. Recyclate Storage, Fire Potential & Minimisation Techniques :

3.1. Upper yard Area :

- 3.1.1. The incoming and outgoing materials are of a non-combustible nature, with only the mobile plant posing any potential fire risk, plant is normally covered by the proper use of the operations safe systems of work (re-fuelling, operation, maintenance etc.) and suitably located fire extinguishers.
- 3.1.2. The aggregate stockpiles are a constituent part of the site FPMP fire-fighting resource, in that these completely non-combustible materials can be utilised to smother fires occurring in any other areas of the site (where it is safe to do so).
- 3.1.3. Aggregates can be loaded into a high capacity forklift container or excavator / loading shovel bucket and used to pour onto any recyclate container or on to uncontained areas when fire may occur.
- 3.1.4. This form of fire-fighting can be underway in just a few minutes loading and travel time.

3.2. Lower Yard Area

- 3.2.1. The lower yard area (excluding the treatment building area) hosts the storage of the recovered recycled products. These products are rated as combustible and as a precaution the following storage rules will apply.
- 3.2.2. Wood : Maximum of 2 no. 40m³ steel open rolloff containers full / being filled at any one time. Containers will be parked parallel and adjacent sides kept a minimum of 1 metre apart to prevent fire spread by radiant heat. All wood containers will be kept immediately accessible by service vehicles or plant in order to allow their immediate removal to another location or a smothering with aggregate operation.
- 3.2.3. Rejects Skip : A single 40m³ steel rolloff container shall be used for the storage of non-recyclable materials destined for landfill. As this material can be ignited relatively easily, burn rapidly and have a higher calorific value compared to other recyclates, this container shall be stored away from sensitive areas (fuel bunker, accommodation areas or areas with potential ignition sources).

- 3.2.4. Paper & Cardboard: A single 40m³ steel rolloff container is used to house recovered paper and cardboard prior to onward export to pulping mills. Bulk Paper and Card will be dealt with in a similar vein to the wood storage, having a maximum of 2 rolloff containers full or being filled at any one time, with full access for plant and vehicles at all times and kept a minimum of 1 metre apart on adjacent sides. These bins will be kept away from other high calorific value materials.
- 3.2.5. Ferrous and non-ferrous metals: Again these will be containerised in 30m³ steel rolloff containers. These products are not combustible in nature and can be located near to the weighbridge office accommodation.
- 3.2.6. UPVC construction materials: Up to two max. 50m³ rolloff containers of UPVC materials will be stored at least 1m apart near the site entrance storage area of the lower yard. UPVC is extremely difficult to ignite, requiring temperatures in excess of 390°C which is 150°C higher than that of wood. In addition to this these materials are unlikely to sustain a burn in air without receiving additional external heat energy from an external source. Aggregate materials are quickly at hand to smother any fires in the lower yard storage bins.
- 3.2.7. Green Wastes : Sometimes green waste arrives at the site and is separated and stored into a steel skip or rolloff container stored near the site entrance. This material tends to have a high moisture content making ignition difficult. Despite this lower risk, the material is combustible and, if left long enough can generate its own heat and spontaneously combust. No green waste load OR PART LOAD will be stored on site for longer than 4 weeks.

3.3. Treatment Building

- 3.3.1. Whilst it has been assessed that the stockpiled mixed wastes are of a non-combustible nature, the treatment building has been constructed and is managed to allow swift access / egress in the case of fire and restricting the footprint of the stockpile to ensure a 3 metre margin is maintained from the process line equipment to allow movement of personnel and plant.
- 3.3.2. The opposite side of the building from the process line supports part of the waste stockpile via a steel and concrete retaining wall. This wall provides a fire break from the rest of the building and defines a corridor to the rear of the building past a small workshop and maintenance area where the rear fire escape is located.



- 3.3.4. No hot work is undertaken in the treatment building and there are no flammable gasses stored.
- 3.3.5. Any small / localised outbreak of fire can be dealt with, where safe to do so, by the available fire-fighting equipment (extinguishers / fire hose) in the building.

3.4. Site Drainage Containment:

- 3.4.1. The majority of the upper and lower yard areas will ultimately drain toward the site entrance. This area is hydraulically contained by the site entrance aco-drain. This drain will captures any surface water flow from any fire-fighting operation and divert it to a sealed underground large capacity drainage tank (accessible via manhole cover) situated approximately half way along the lower yard frontage to the industrial estate's service road and in close proximity to the fire hydrant. This underground tank can be serviced via tanker lorry for suitable off-site disposal to a treatment works.
- 3.4.2. The building has its own 'sealed' drainage system with a central tank and interceptors (ultimately draining to sewer in the service road of the industrial estate, whereby any contaminated water is retained on site when necessary and taken for off-site disposal if necessary. This system allows for any contaminated water which may arise form fire-fighting.

4. Actions If Fire Occurs: SEE ANNEX A & SITE POSTERS

- 4.1.1. The site management has established designated fire marshals who will deal with any fire according to a dynamic risk assessment of the situation at the time.
- 4.1.2. In addition all staff will have been trained in basic fire precautions, fire drill and the appropriate use and location of fire-fighting equipment.
- 4.1.3. Any outbreak of fire will raise an alarm to evacuate the affected area.
- 4.1.4. If it is assessed by the fire marshal that the fire can be safely contained using the correct type of fire extinguisher / fire hose or the utilisation of site plant to fetch aggregate to pour on and smother a fire then this attempt will be made.
- 4.1.5. In the event that the initial attempt does not extinguish the fire then the emergency services will be contacted and the whole site will be evacuated.
- 4.1.6. The designated fire marshals for each area will make exit checks for remaining personnel and bring the site attendance / visitors book to ensure all personnel are accounted for at the assembly point.
- 4.1.7. If possible this FPMP plan will also be brought to the assembly point by the fire marshal to aid the emergency services

5. Combustion Products and Emissions In the Event of A Fire :

- 5.1.1. Any significant fires arising on site will produce smoke, airborne particulates and ash. Most of the materials will not present any particular risks of toxicity over that expected from burning wood or paper.
- 5.1.2. The rejects container (up to 50m³) which is normally destined for landfill offers a higher risk in terms of smoke and particulates as it is not possible to define its exact content and it would be necessary to take a conservative view in terms of precautions to be taken whilst in the proximity of a fire situation occurring in this container.
- 5.1.3. The uPVC containers are highly unlikely to sustain any burn, however, if they were to do so then the potential for toxic gas emission must be taken into account when dealing with such a situation.
- 5.1.4. The major gaseous products of the combustion of PVC are carbon monoxide, carbon dioxide, hydrogen chloride and water. Chlorine gas is never produced when PVC burns, and while the possibility of producing phosgene from burning PVC has been suggested, following reports of minimal quantities produced in laboratory experiments, it has never been detected in large scale fire tests and it is not considered a significant product of PVC combustion.
- 5.1.5. The presence of hydrogen chloride in fire gases will be very obvious to people nearby from the earliest stages of the fire, because it will cause irritation of the mucous membranes at concentrations much lower than those likely to cause a threat to health. Thus it will provide a warning of the fire not available from carbon monoxide alone. At higher concentrations, hydrogen chloride could cause damage to the lungs, but it is not more toxic to animal life than carbon monoxide, which is a major constituent of all fire gases.
- 5.1.6. Hydrogen chloride is considerably less toxic than gases such as acrolein and hydrogen cyanide, which can be formed by the combustion of other common materials such as wood, leather or wool. The United Nations Organisation classifies materials on the basis of their toxicity into three categories or increasing severity: HARMFUL, TOXIC AND HIGHLY TOXIC. Hydrogen chloride is placed in the HARMFUL category along with carbon monoxide. Similar conclusions are drawn by the US Foundation for Applied Combustion Toxicology in their 1986 Code of Practice.
- 5.1.7. Looking at the combustion products of PVC as a whole, research suggests that they are not significantly more toxic than those from other building materials.
- 5.1.8. The sensitive receptors plan (appendix....) has an attached wind rose for reference to those sensitive receptors within 1km of the site. From this it can be seen that prevailing winds are generally in a south westerly direction covering the Ynysboeth residential area.

6. Contact Details of Sensitive Receptors Within 1km of Our Facility

- **YGG Abercynon School** -School

Greenfield Terrace
Glancynon
Abercynon
Mountain Ash CF45 4TH

01443 740239

yggabercynon.cymru

- **Deeping Saint Nicholas Primary School** - Primary School

Main Road
Deeping St Nicholas, Abercynon
Spalding
PE11 3DG

01775 630280

deepingstnicholasparishchurch.org

- **Ynysboeth Community Primary School** - School

18 Avondale St
Abercynon
Mountain Ash
CF45 4YU

01443 749040

ynysboethprimary.co.uk

- **Abercynon Rugby Football Club** - Rugby Club

The Clubhouse
Y Parc, Abercynon
Mountain Ash
CF45 4RU

07717 710046

Open until 20:00

abercynon.rfc.wales

- **Abercynon Sports Centre**

Parc, Abercynon, Mountain Ash
CF45 4UY

Hours: 06:30am–9pm

Phone: [01443 740141](tel:01443740141)

END

APPENDIX A



Fire Action

IF YOU DISCOVER A FIRE

Raise the Alarm
Shout - Fire! Fire! Fire!



Only attempt to fight the fire, if you have raised the alarm and you judge it safe and practicable to do so

IF YOU HEAR THE FIRE ALARM:



Leave buildings by the nearest exit – and report to the fire assembly point. Plant Operators: Stop work, ensure plant equipment is not near to the fire, and listen for instructions on radio



**Do not take risks.
Do not return to buildings on fire for any reason.
Do not fight fires unless the alarm has been raised**



Outside Entrance Gate

APPENDIX B



APPENDIX C

