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Report No 11575/18A

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SUPPORTING INFORMATION
for
PERMIT VARIATION APPLICATION
HAPTON VALLEY TRANSFER STATION
EPR/DB330HQ

Prepared for

ENVIROFUEL (SRF) LIMITED
Accrington Road,
Burnley,
Lancashire,
BB11 5QG

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1. INTRODUCTION

1.1 The Arley Consulting Company Limited (TACCL) has been commissioned by Envirofuels (SRF) Limited to prepare a permit variation application for the materials recycling facility and transfer station at Hapton Valley Estate, Burnley.

1.2 The information contained in this document is required to answer specific questions in application forms C2 and C3 as follows:

Section 2: BAT Assessment
Section 3: Raw Materials
Section 4: Resource Efficiency and Climate Change
Section 5: Assessment of Stack Sampling Location

2. BAT ASSESSMENT

Process	BAT Description/Requirement	BAT Compliance	Reference Document
SRF production	Waste is sorted and shredded to produce a more homogenous combustible material which does not contain wet putrescible materials or heavy inert materials. SRF can be in the form of soft fluff (loose SRF), bales or hard pellets.	Yes: waste will be shredded and screened to produce loose, baled and pelletised product	Best Available Techniques (BAT) Reference Document for Waste Treatment. Final Draft October 2017: Section 3.3 Mechanical treatment of waste with calorific value
Drying	The drying process reduces the moisture content of the fuel and thereby improves the calorific value to better meet the standardised classification and specification requirements (EN 15359, CEN TC 343).	Yes: process aids compliance with the SRF specification	Best Available Techniques (BAT) Reference Document for Waste Treatment. Final Draft October 2017: Section 3.3 Mechanical treatment of waste with calorific value
Pelletising	SRF can be pelletised before it is sent for combustion. This denser product reduces energy requirement for transport and is easier to store	Yes	Best Available Techniques (BAT) Reference Document for Waste Treatment. Final Draft October 2017: Section 3.3 Mechanical treatment of waste with calorific value

Table 1: BAT Assessment (continued overleaf)

Process	BAT Description/Requirement	BAT Compliance	Reference Document
Control of emissions: dust abatement	'Emissions to air from mechanical treatment of waste with calorific value are likely to be dust'. BAT for reduction of dust emissions is by use of fabric filter. Fabric filter can be in the form of a sheet, cartridge or bag.	Yes: cartridge filter proposed is a fabric filter	Best Available Techniques (BAT) Reference Document for Waste Treatment. Final Draft October 2017: Section 3.3 Mechanical treatment of waste with calorific value Best Available Techniques (BAT) Reference Document for Common Waste Water and Waste Gas Treatment/Management Systems in the Chemical Sector. IED 2010/75/EU (IPPC). 2016 – section 3.5.1.4.6 fabric filter description
Control of emissions: odour abatement	'Emissions of odour or organic compounds may also occur when the waste input contains organic matter'.	Odour modelling has shown that odour can be adequately controlled by containment and dispersion without the requirement for abatement.	JRC Reference Report on Monitoring Emissions to Air and Water from IED Installations. IED 2010/75/EU (IPPC). Revised Final Draft – Section 4.6 Odour
Control of emissions: VOC abatement	BAT 45 for physico-chemical treatment of waste with calorific value lists appropriate techniques for abatement of VOCs adsorption, cryogenic condensation, thermal oxidation, wet scrubbing after application of BAT14d (collection and extraction)	The buildings will be contained and air extracted to a point source emission. Activated carbon adsorption will be used to remove VOCs. This will be implemented on extracted air in-line after dust filtration, before air is released via the stack.	EU Decision 2018/1147 of 10/8/18 establishing best available techniques for waste treatment under EU Directive 2010/75/EU

Table 1 continued: BAT Assessment

3. RAW MATERIALS

Product/Use	Chemical Nature	Utilisation rate	Fate	Environmental Impact	Practical Alternatives
Engine oil (site machinery)	Mineral oil	2600 litres/year	100% to air: small percentage burnt in the engine, remainder collected as recovered fuel oil and burnt as fuel.	Low impact: Combustion products mainly carbon dioxide and water	None
Hydraulic oil (site machinery)	Mineral oil	2600 litres/year	100% to air: small percentage burnt in the engine, remainder collected as recovered fuel oil and burnt as fuel.	Low impact: Combustion products mainly carbon dioxide and water	None
Fuel Oil – to run 2 generators and vehicles	Diesel	613,000 litres/year	100% to air: burnt mainly to carbon dioxide and water with some remaining hydrocarbons and carbon monoxide.	Medium impact: exhaust gases and particulates contribute to localised air pollution and more widely to global warming.	None currently but enquiries are underway to improve the electricity supply to the site so that the plant can be operated through mains supply
Antifreeze (site machinery)	Ethylene glycol	50 litres/year	100% to air: gradually breakdown in solution and evaporate	Low impact: biodegradation results in carbon dioxide and water	None

Table 2: Raw Materials (continued overleaf)

Product/Use	Chemical Nature	Utilisation rate	Fate	Environmental Impact	Practical Alternatives
Electricity (conveyors, lighting, site office, welfare facilities)	n/a	459,024 kW/hr per year	n/a	Use of energy contributing to global warming	None
Water (boiler feed)	Water	-	Recycled	None: returned to water cycle. Steam created is condensed and fed back into the boiler	None
Woodchip (boiler feed)	Wood	4368 tonnes/year	95% to air: burnt mainly to carbon dioxide and water with some remaining hydrocarbons and carbon monoxide. 5 % ash	Low impact: Combustion products mainly carbon dioxide and water. Ash is recovered off site.	Use of biomass to fuel boiler considered renewable energy, less environmental impact than using fossil fuels

Table 2 continued: Raw Materials

Notes:

1. The electricity supply to the site is not sufficient to run the whole site operations and is only used to run the conveyors, for lighting and to supply the office and welfare facility. Plant is operated by a diesel generator.

2. Values stated in Table 2 include the proposed operations and based on existing usage.

4. RESOURCE EFFICIENCY AND CLIMATE CHANGE

4.1 In answer to question 6a on form C3, measures for improving energy efficiency are listed below:

- Machinery is switched off when not in use to limit the use of fuel
- Lights are switched off when buildings vacated at the end of the working day to save electricity
- Computers are shut down at the end of the working day
- Material is processed in batches or campaigns – plant is not run all day with sporadic inputs, only when enough material has accumulated so that machinery is used efficiently
- No engine idling – engines are shut down whilst waiting to load/unload

4.2 Question 6b on form C3 requires a breakdown of changes to energy used and created. The energy used is detailed in section 3 'Raw Materials'. No energy is produced on site. Energy usage will not change in the near future from that detailed in section 3. If a better electricity connection can be established the energy usage will increase as all plant will use mains electricity but this will be offset by a reduction in fuel usage for the generators.

4.3 A climate change levy agreement has not been entered into. Specific measures for improving energy efficiency are listed in paragraph 4.1 above.

4.4 Raw material usage is explained and justified in section 3.

4.5 No waste is produced by site operations other than boiler ash. This is sent off site for recovery.

5. ASSESSMENT OF STACK SAMPLING LOCATION

5.1 The variation includes two proposed stacks to effectively disperse emissions from the drying plant. These are listed as emission points to atmosphere.

5.2 The stacks have not yet been constructed and a planning application is being prepared to this end. As such there are no finalised drawings of the as built sampling locations. The stacks will be constructed with sampling ports following BS EN 15259 and M1 guidance, with the following minimum requirements:

- They should be positioned in a section of parallel walled, ideally circular, vertical stack, with an upward flow;
- They should be **at least** 5 HD from the stack exit. HD is the hydraulic diameter defined as 4 times the sampling plane area *(πr2)* divided by the length of the sample plane perimeter;
- They should be **at least** 2 HD upstream and 5 HD downstream of any bend or obstruction;
- l If monitoring in a horizontal duct is unavoidable, the duct should be square or rectangular (unless it is less than or equal to 0.35 m in diameter, in which case circular ducts are acceptable);
- MCERTS-accredited monitoring contractors must be able to gain access to all the required sample points, in order to undertake periodic monitoring using their own equipment;
- Ports should be a BS 10 flange with a minimum 125 mm internal diameter or, if the duct is less than 0.7 m in diameter, be an appropriately standardised port (e.g. 2" BSP);
- Ports should be located in accordance with section 6 and appendix A of BS EN 15259;
- No part of the port should project into the flow of the gas stream. The pipe stub outside the duct should be kept to a minimum;
- A space adjacent the ports should provide sufficient working area, support and clearance for a sample team to work safely with their equipment. This is normally considered to include a **minimum** area of 5 m2; clearance of at least 2 m, or the probe length + 1.5 m; whichever is longer.

- If the platform is at height, it needs to have a suitable lifting point fitted to allow equipment to be lifted safely, without the need to lean on handrails. Alternatively, access to the platform can be made via stairs or a lift, if this is suitable and practical for moving equipment;

- Access ladders to elevated platforms should have gates or other suitable self-closing facilities at the platform, to prevent falls from height.

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