

PERMIT APPLICATION: EPR/PP3496EU/V007

ASSESSMENT AGAINST BAT CONCLUSIONS

November 2020

Report for:
Seneca Environmental Solutions
Limited
Unit 2 Hannah Close
Neasden
NW10 0XU

1.0 OVERVIEW

The sites existing installation activities are approved under EPR/PP3496EU/V006 Activity A1 which permits: 'Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day involving pre-treatment of waste for incineration or co-incineration. This activity is defined as an installation under Section 5.4 A(1)(b)(ii), Schedule 1 of the Environmental Permitting Regulations. The limits on the activities are: *A combined total of no more than 399,000 tonnes of non-hazardous waste per year for activities A1 and A2. Non-hazardous waste with putrescible content and/or waste with a potential for odour shall not exceed 150,000 tonnes per year. Waste used for refuse derived fuel (RDF) shall be processed and baled within 24 hours of acceptance onto the site and shall be removed within 48 hours of acceptance onto the site or as otherwise agreed in writing with the Environment Agency. The residual organic fines generated by the processing shall also be removed within this period. Treatment operations shall be limited to physical treatment including screening, crushing, baling and shredding for the purpose of recovery.*

Following a review of operations, Seneca are seeking to provide commercial flexibility to their operation by pre-treating non-hazardous wastes to permit transfer to a non-R1 compliant incinerator. This activity is determined as disposal and consequently section 5.4 A(1)(a)(iii) applies. Albeit there are no amendments to the activity this additional installation reference is addition to section 5.4 A(1)(b)(ii). Having the two codes will permit the facility to manufacture the fuel for both R1 compliant and non-compliant facilities.

This assessment examines the design and management controls that ensures the facility complies with Best Available Techniques (BAT) as determined under the published Decision 2018/1147 'establishing BAT conclusions waste treatment, under Directive 2010/75/EU of the European Parliament and the Council'.

2.0 BAT ASSESSMENT COMPLIANCE REVIEW

The principles of BAT have been incorporated into the design and operation of the hazardous treatment and storage processes. The principal of minimising process residues while maximizing product added-value and 'end of waste' criteria are key to BAT compliance. Significant investment in technological measures for managing and operating the process plant will meet the BAT guidance. All pre-acceptance, acceptance, storage, treatment, quarantine and monitoring will be in accordance with the UKAS certified BS EN 14001 Environmental Management Systems, supported by the following technical reports:

- Working Plan
- Fugitive Emissions Plan;
- Odour Management Plan;
- Fire Prevention Plan; and
- Accident Prevention & Management Plan including the Spill Response Plan.

3.0 BAT CONCLUSION REVIEW

3.1 Table 1 assesses activities A1 against the BAT 2018 Conclusions (as set out in . Where the assessment covers both activities, it assesses them together and not individually.

Table 1 BAT Assessment		
BAT	General Considerations	Activity A1 processing of non-hazardous waste for disposal via incineration
1	Commitment for improvement through implementation of EMS	The site operates under an accredited and certified environment management system. The management system is compliant to BS14001 that incorporates all of the required features I to XV.
2	In order to improve the overall environmental performance of the plant, BAT is to use all of the techniques given below.	
a)	Implement waste characterisation	Working Plan has robust measures in place to ensure data is collated on the processes producing the waste; suitably characterising it; and determining suitability the need and type of treatment required.
b) & c)	Waste acceptance procedures and tracking systems	<p>The Working Plan and operational procedures incorporate systems for documenting the waste types and its characteristics. This fully details the treatment type required. The Waste Acceptance Form details acceptability and also forms the basis of a decision as to whether it goes for pre-shredding, metals segregation, picking or for bag splitting/shredding and blending. This is documented by waste steam.</p> <p>On the weighbridge the vehicle payload is weighed, the load linked back to source/WAF approval. The driver is advised on receipt at the site in which zone they are to place the waste. They are met within the enclosure and directed for point of placement.</p> <p>Waste deliveries are logged electronically by waste type and can be linked to processing line/area. Tickets are maintained and filed by producer and date and can be interrogated in the event loads are identified as non-conforming.</p> <p>The processing in the enclosure occurs on a batch system basis. Typically, the first waste received is treated first. This prevents waste ageing and odorous emissions. This is documented in the management procedures.</p> <p>The waste can be tracked by day of delivery through the process to container and dispatch. This assists in determining compliance.</p>
d)	Set up and implement an output quality management system	The Working Plan and operational procedures set out the steps that ensure the waste treatment achieved the necessary outcome in terms of quality. Each receiving site has exacting limits on the fuels performance. Testing is completed in a systematic manner to demonstrate the quality being achieved. The manufacturing process enables reviews if quality deteriorates and the material falls out of specification.
e)	Ensure waste segregation	The Material Recovery Facility operates different activities depending upon waste streams. The waste acceptance process and site management ensure the waste transferred to the relevant treatment area within the enclosure.
f)	Ensure waste compatibility prior to mixing or blending of waste	The working plan and operational procedures introduce a factory processing regime including inspection of feedstocks and checks on the waste to ensure the materials being imported meet anticipated quality, unacceptable waste removed and processing is undertaken in a bespoke manner.

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g)	Sorting incoming solid waste to prevent unwanted material entering the waste treatment processes.	As per f, the factory processing and checks completed ensures that the waste inputs are suitable processed.
3	In order to facilitate the reduction of emissions to water and air, BAT is to establish and to maintain an inventory of waste water and waste gas streams.	The Working Plan and Operational Procedures detail the processes the waste stream goes through. Emission rates of different feed stock & baled wastes have been evaluated throughout Seneca's 10 year operation and documented. Emissions to air are diffuse and currently no point sources.
4	In order to minimise environmental risk with the storage of waste, BAT is to use all of the techniques a to d.	The site has been carefully designed with identified processing areas. Feed stocks are identified by type to facilitate processing efficiencies in terms of operation. The site has optimised, safe and adequate storage (within limits of the FPP). The site does not currently receive hazardous wastes (limited to asbestos), however prior to starting the bulking up of ACM the site team sets aside and demarcate an area. This has restricted access. The bulking up occurs direct into sealed containers.
5	To reduce environmental risk associated with handling of waste, BAT is to set up and implement safe handling and transfer procedures.	The Working Plan and operational procedures provide clear responsibility regarding the safe management and treatment of the wastes. The BS EN 14001 / 18001 certified management systems ensure competency, design requirements ensure safe management and mitigation systems are deployed.
6 & 7	For relevant emissions to water as identified in BAT3, BAT is to monitor process parameters.	There are no emissions to water.
8	BAT is to monitor channelled emissions to air.	Whilst there are no current channelled emissions to air, the site has an accepted solution. This solution includes negative air abatement, dust filtration and, as necessary, the incorporation of a GAC adsorption filter. The emissions are via stack and a CEMS is proposed. Provision for this system is set out in Pre-Operational Measures 1 and 2 and within the application supported permit variation V005.
9	BAT is to monitor diffuse emissions of organic compounds to air from the regeneration of spent solvents, the decontamination of equipment containing POPs with solvents, and the physio-chemical treatment of solvents for recovery of their calorific value.	This is not applicable to the installation activities. Odour Monitoring of diffuse emissions are undertaken within the plan using appropriate methods.
10	BAT is to periodically monitor odour emissions.	The Odour Monitoring Plan defines the monitoring that will be undertaken. There are routine odour sniff tests. This is supplemented by periodic quantitative odour assessments, evaluating internal and external odour intensity and hedonic tone.
11	BAT is to monitor the annual consumption of water, energy and raw materials.	The Working Plan sets out the annual monitoring and reporting.
12	BAT is to prevent, and where not practicable, to reduce odour emissions.	The Odour Management Plan sets out the processes implemented at the site and complies with BAT requirements.

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13	In order to prevent / reduce odour emissions BAT will include: <ul style="list-style-type: none"> • Minimising residence times; • Using chemical treatment • Optimising aerobic treatment 	The Odour Management Plan sets out the commitments to process to minimise odour emissions including residency times on site. In addition, prioritise the processing or rejection of any batch received which is particularly malodorous.
14	In order to prevent / reduce diffuse emission sources BAT is to use an appropriate combination of pre-defined techniques.	The Odour Management Plan details the minimisation measures being implemented. The works are fully enclosed within an enclosure and systems have been implemented to minimise odour escape. The site uses chemical treatment, particularly effective at night to reduce odour intensity. The site has robust maintenance systems in place preventing unnecessary emissions.
15	BAT controls relating to flaring	Not applicable to this installation.
16	BAT controls relating to flaring	Not applicable to this installation.
17 & 18	BAT relating to noise and vibration controls	Noise and vibration controls, complaints procedures and escalation measures are detailed in the Working Plan and operational procedures. The operation is underpinned by a BS4142 compliant assessment (at planning). Routine monitoring is completed to demonstrate compliance. The processes are fully enclosed and acoustically screened.
19	BAT for optimisation of water consumption, reducing volume of water generated.	<p>The site processes have no large scale demands on water. Reviews of water consumption and rainwater harvesting requirements are undertaken. Steps to minimise water are assessed annually and measures implemented.</p> <p>All waste processing is fully internalised and avoids effluent generation. The entire site has good quality impermeable surfacing. All processing areas are on impermeable sealed drainage.</p> <p>The site has robust drainage including attenuation and on site storage capacity in the event of fire suppression.</p>
20	BAT to reduce emissions to water	The site has no effluent discharges to ground, sewer or controlled water.
21	BAT to prevent / minimise emissions from accidents and incidents	The Accident Prevention & Management Plan, Fire Prevention Plan and Spill Response Plan accommodates techniques set out in a) to c) and is considered compliant.
22	BAT for Material Efficiency	Material consumption and alternatives is considered. This includes plastic wrapping on RDF and the metal twine around the bales. Lean manufacturing techniques were made to minimise twine and LDPE wrapping. Use of alternative products made of waste were not identified but are considered.
23	BAT for Energy Efficiency	This is periodically reviewed against tonnes processed. The energy includes fuels and electricity consumed. The efficiency of the plant is assessed.
24	BAT for re-use of packaging	<p>The type of waste RDF bale wrap used has been continuously reviewed since operations began. As per BAT 22 measures have been implemented to reduce wastage.</p> <p>Greater efficiency of operation has reduced demand of the wrap per bale over time and the percentage split loads. This reduces demands on the plastics.</p>

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BAT	Conclusions for mechanical treatment	Relevant to the shredding and bulking up the wastes
25	In order to reduce emissions to air of dust, and particulate bound metals, PCDD/F and dioxin like compounds, BAT is to apply BAT 14d and to use one or a combination of techniques.	<p>The operation occurs in an enclosure. External dust levels are monitored by MCERTS Osiris particulate meters.</p> <p>During the internal shredding of waste, misting systems are deployed over and into the shredders to suppress particulates. Dampening systems use a fine mist minimising water consumption. The combination of enclosure and misting system renders the diffuse emissions limited.</p> <p>Provision for dust cyclone/bagged filters is within the proposed air management system.</p>
26	To improve overall environmental performance and prevent emissions due to accidents, BAT requires inspection procedures, segregation of dangerous wastes and treatment of containers.	<p>Measures are incorporated into the Working Plan and operating procedures to remove hazardous compounds from feed stock, including cannisters and lithium batteries, prior to waste treatment.</p> <p>In addition to inspection and management, stockpiled wastes are monitored by thermal cameras in a real time environment to determine presence of dangerous wastes generating fire risk.</p>
27	BAT relating to deflagrations	Not applicable.
28	BAT relating to shredding activities	The shredder is managed to ensure consistent through flow of waste. It is maintained and trained operators use the equipment to avoid plant malfunction caused by poor operational techniques.
29	BAT relating to release of organic emission to air.	Not applicable.
30	BAT to avoid explosions when treating WEEE	Not applicable.
31	BAT to reduce emissions to air of organic substances	In 2014, due to predicted low internal odour concentrations the requirement of a GAC filter or biostack to adsorb odour emissions prior to release and dispersion was not required. When the channelled emission is implemented the incorporation of a GAC is considered necessary. This is to be set out and agreed in pre-operational condition PO1.
32	BAT emissions to reduce/avoid mercury emissions	Not applicable.
33 - 39	Biological Treatment & Anaerobic Treatment	Not applicable.
BAT	Physico-chemical treatment of solid or pasty waste	Not applicable.
40	BAT on monitoring waste input.	Not applicable.
41	BAT on Emissions to Air.	Not applicable.
BAT	Conclusions on re-refining oil.	BAT Items 42 to 44 are not applicable
BAT	Conclusions on physico-chemical treatment of waste with calorific value.	BAT Item 45 is not applicable

Table 1 BAT Assessment		
BAT	General Considerations	Activity A1 processing of non-hazardous waste for disposal via incineration
BAT	Conclusions for the regeneration of spent solvents.	BAT Items 46 to 47 are not applicable.
BAT	Conclusions for thermal treatment of spent activated carbon, waste catalysts and excavated contaminated soils.	BAT Items 48 to 49 are not applicable.
BAT 50	Conclusions for water washing of excavated contaminated soils.	Not applicable.
BAT 51	Conclusions for decontamination of equipment containing PCB.	BAT Item 51 is not applicable to this application.
BAT 52-53	Conclusions for treatment of water based liquid waste	BAT Items 52 to 53 are not applicable.

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