APPLICATION FOR AN ENVIRONMENTAL PERMIT UNDER THE ENVIRONMENTAL PERMITTING (ENGLAND AND WALES) REGULATIONS 2016 (AS AMENDED)

ENVIRONMENTAL PERMITTING TECHNICAL REQUIREMENTS

MR VICTOR KESERU –
TRADING AS ENVIK WASTE RECYCLING SERVICES

WESTSIDE, CAMBRIAN INDUSTRIAL ESTATE
COEDCAE LANE, PONTYCLUN, CF72 9EX

ECL Ref: ENVK.01.01/EPTR
Date: September 2025
Version: Issue 5

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

ACRONYMS / TERMS USED IN THIS REPORT

ASCR	Application Site Condition Report
BAT	Best Available Techniques
BREF	Best Available Techniques Reference Document
CIWM	Chartered Institute of Waste Management
DSEAR	Dangerous Substances and Explosive Atmospheres Regulations 2002
EA	Environment Agency
ECL	Environmental Compliance Limited
EMS	Environmental Management System
Envik Waste	Mr Victor Keseru trading as Envik Waste
EP Regulations	Environmental Permitting (England and Wales) Regulations 2016 as amended
EP	Environmental Permit
EPTR	Environmental Permitting Technical Requirements
ERA	Environmental Risk Assessment
IED	Industrial Emissions Directives
LEL	Lower Explosion Limit
LPG	Liquified Petroleum Gas
NGR	National Grid Reference
NRW	Natural Resources Wales
OS	Ordnance Survey
PPMR	Planned Preventative Maintenance Regime
SGN	Sector Guidance Note
The Facility	Envik Waste Gas Cylinder Storage Facility
WAMITAB	Waste Management Industry Training and Advisory Board

1. INTRODUCTION

1.1. Overview

1.1.1. Environmental Compliance Limited ("ECL") has been commissioned by Mr Victor Keseru trading as Envik Waste Recycling Services ("Envik Waste") to prepare an Environmental Permitting Technical Requirements ("EPTR") document to form part of the bespoke waste operation Environmental Permit ("EP") application for their proposed gas cylinder storage Facility, hereafter referred to as "the Facility" or "the Site".

1.1.2. This version of the EPTR (Issue 5, September 2025) has been amended with regard to the Schedule 5 notice, reference PAN-026369 Schedule 5 Re-Issue, ("the Schedule 5") which was issued by Natural Resources Wales ("NRW") on the 3rd September 2025.

1.1.3. It is noted that changes to the text between Issues 3 and 4 (resultant from the previous Schedule 5 response Ref PAN-026369 Schedule 5 Notice for Further Information dated 10 June 2025) have also been updated.

1.2. Facility Location

1.2.1. The Facility is located at Westside, Cambrian Industrial Estate, Coedcae Lane, Pontyclun, CF72 9EX. The Facility occupies an approximate area of 280m^2 and is centred on National Grid Reference ("NGR") 302691, 182150.

1.2.2. The Site Location Plan (Drawing Reference ENVK.01.01-01) details the Environmental Permit boundary (outlined in green) and is provided with this application submission.

1.2.3. The indicative site location (red circle) and its surroundings is provided in Figure 1.

Figure 1: Indicative Site Setting

2. PROPOSED ACTIVITIES

2.1. Bespoke Waste Operation Activities

2.1.1. The proposed activities at the Facility fall under Schedule 9, Part 1 (waste operations) of the Environmental Permitting (England and Wales) Regulations 2016 as amended ("EP Regulations").

2.1.2. The proposed waste codes to be accepted at the Facility are detailed in Table 1.

Table 1: Proposed Waste Codes to be Accepted

Code	Description
15	**WASTE PACKAGING, ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED**
15 01	**Packaging (including separately collected municipal packaging waste)**
15 01 04	Metallic Packaging
15 01 10*	Packaging containing residues of or contaminated by hazardous substances
16	**WASTES NOT OTHERWISE SPECIFIED IN THE LIST**
16 05	**Gases in pressure containers and discarded chemicals**
16 05 04*	Gases in pressure containers (including halons) containing hazardous substances
16 05 05	Gases in pressure containers other than those mentioned in 16 05 04

2.1.3. Only those canisters containing propane, butane and proprietary propane/butane mixtures will be accepted on Site. No foams will be accepted.

2.1.4. The waste management operation to be carried out at the site as specified in Annex I of the Waste Framework Directive 2008 is detailed below:

2.1.5. R3: Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes);

- **R4:** Recycling/reclamation of metals and metal compounds;
- **R13**: Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced); and
- **D15**: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced).

2.1.6. As stated above, ENVIK propose to only accept propane, butane and proprietary propane/butane mixtures on Site. ENVIK recognise that any canisters which are full or partially fully will comprise hazardous waste.

2.1.7. The wastes which it is proposed will be accepted as non-hazardous will be those canisters which are shown as empty on the pressure gauge and in addition have previously been cracked, pierced or otherwise emptied (prior to being accepted on Site) and therefore contain only negligible traces of gas.

2.1.8. Wastes will only be accepted as non-hazardous if they have been classified as such by the waste producer in accordance with the Waste Duty of Care.

2.1.9. Due to the small scale nature of the proposed waste operations, Envik Waste is proposing to treat a maximum of 500 tonnes of non-hazardous waste and 12 tonnes of hazardous waste per annum.

2.1.10. It is proposed that Envik Waste shall store a maximum of 50 tonnes of non-hazardous waste at the Facility and 1 tonne of hazardous waste at any one time.

2.1.11. Envik Waste shall treat a maximum of 5 tonnes per day of non-hazardous waste and maximum of 1 tonne per day of hazardous waste. Treatment will be limited to empty waste cylinders/canisters.

2.1.12. Any cylinders accepted which are the legal property of a company, for example BOC or Flogas, remain the property of that company and will be removed from site and returned to the registered company.

3. MANAGEMENT TECHNIQUES

3.1. Technical Competence

3.1.1. Under the EP Regulations, the activities at the Facility are classified as a relevant waste operation, and, accordingly, a Technically Competent Manager will be required. Mr Jack Keseru will fulfil this role. He is registered and working towards obtaining the Chartered Institute of Waste Management ("CIWM") Waste Management Industry Training and Advisory Board ("WAMITAB") Operator Competence Scheme (with Brightwater Education Limited, CIWM learner number 139256) for the appropriate awards for the site activities:

- **HROC4A** WAMITAB Level 4 High Risk Operator Competence for Managing Transfer of Hazardous Waste;
- **HROC6** Level 4 High Risk Operator Competence for Managing Physical and Chemical Treatment of Hazardous Waste (this will be completed by adding the appropriate units after he has completed HROC4a).

3.2. Overview of Environmental Management System

3.2.1. Envik Waste will operate their own Environmental Management System ("EMS") at the Facility which will address environmental aspects of the proposed activities. The EMS will be written in accordance with the EA's online guidance 'Develop a management system: environmental permits' which is adopted by NRW. The EMS will be available within 1 month of the issue of the permit.

3.2.2. Victor Keseru has overall responsibility including environmental matters at the Facility.

3.2.3. Envik Waste will establish a documented EMS which:

- ensures compliance with all relevant legislation;
- ensures compliance with the Facility's Environmental Permit;
- identifies, assesses and minimises the risks of pollution arising from the Facility's activities;
- comprises a range of written procedures that cover all aspects of the Facility's activities;
- includes a planned preventative maintenance regime ("PPMR") detailing the maintenance, servicing and testing requirements of all infrastructure and equipment on site;
- includes a site layout plan which is updated as required
- identifies, sets, monitors and reviews environmental objectives and key performance indicators; and
- includes a requirement to report annually on environmental performance, objectives, targets and future planned improvements

3.3. Details of the Environmental Management System

Plan

3.3.1. The planning element of the EMS will include:

- identification of environmental impacts and aspects associated with the Facility's activities, and assessing their significance; including an assessment of the potential environmental risks posed by the work of contractors;
- identification and evaluation of relevant legal and other relevant requirements;
- identification of environmental objectives and targets that will be focussed on reducing the impact of the identified significant environmental aspects;
- identification and training on the COSHH assessments for all substances that will be stored and/or used on
- details on how the treatment process, including the waste pre-acceptance criteria and waste acceptance criteria and the pre and post treatment storage will be designed with regards to the COSHH assessments including procedures to ensure that propane will not be stored within the designated butane tank;
- a series of risk assessments to cover a range of issues, including site operations, maintenance, accidents, training and records; and
- details of how Envik Waste ensure that any relevant standards, guidance and codes of practice are met on an ongoing basis; and
- a Site Closure Plan to demonstrate how the Facility can be decommissioned in its current state to avoid any pollution risk and return the site of operation to a satisfactory state.

3.3.2. The outcomes of the above are:

- a comprehensive understanding of the potential and actual impacts of the permitted activities on the surrounding environment and people's health;
- the correct appropriate measures selected to manage environmental risks and prevent or minimise their effects so as not to cause pollution;
- a series of documented procedures covering all aspects of the Facility's activities; and
- a series of documented environmental objectives and targets, together with an action plan/development programme to ensure that these are met.

Implementation and Operation (Do)

3.3.3. This element will include:

- ensuring that EMS roles and responsibilities are clearly defined and documented, and that site staff are made aware of these;
- ensuring that the Facility is operated by suitably competent staff who have received the necessary training in all aspects of the plant's operation, including where contractors are used, ensuring that they are suitably competent; in this regard:
  - the skills and competencies necessary for key posts are documented; these key posts include contractors, those responsible for liaising with contractors and those purchasing equipment and materials,
  - training requirements are identified by means of a documented training

needs analysis,
- documented training records are kept and updated as required,
- training specifically addressee's environmental awareness and environmental permit requirements, and
- the requirement for ongoing/refresher training is identified;

- ensuring that there are site layout plans - including drainage plans - and that they are revised as required to reflect any changes at the Facility. The Site layout plan reference, ENVK.01.01-02 (Issue 2), is submitted with this application.
- ensuring that there are documented procedures covering internal and external communications;
- ensuring that there are procedures in place for staff and contractors to have access to the Facility's permit and management system requirements; with regard to contractors, ensuring that suitable instructions are provided with regard to protecting the environment whilst working on site;
- ensuring that there are procedures in place for allowing external parties, such as the general public, to view the permit, EMS and associated documents
- the establishment of a documented PPMR to ensure that all plant and site infrastructure are kept in suitable condition and operating effectively; this PPMR programme details what maintenance, tests and inspections need to be done and when, and will include the inspection, testing and maintenance of the treatment plant and associated containers, tanks, pipework and connections, surfacing and bunding/containment systems;
- The PPMR also:
  - details the measures required to ensure continuing compliance with the permit conditions during maintenance/shutdown;
  - identifies known or predictable malfunctions associated with the operations and the procedures, spare parts, tools and expertise required to deal with them,
  - includes a record of spare parts held, or details on where they can be sourced from, together with an assessment of how long they would take to obtain,
  - includes a defined procedure for identifying, reviewing and prioritising items of plant for which a preventative regime is appropriate,
  - includes equipment or plant whose failure could directly or indirectly lead to an impact on the environment or human health and 'non-productive' items,
  - ensure the necessary spare parts, tools, and competent staff are available prior to commencing maintenance;
- ensuring that there are documented procedures covering document control;
- ensuring that there are suitable documented record-keeping arrangements in place;
- ensuring that there are documented operational procedures and work instructions covering all aspects of the Facility's operation;
- ensuring that there are documented procedures that incorporate environmental issues into the control of process/equipment change, capital approval and purchasing policy;
- ensuring that there are documented procedures to address non-conformities/non-compliances and the associated corrective and preventative action; these will detail the means by which any such non-conformities/non-compliances are reported to management and the means by which they are reported to NRW.
- ensuring that there is a documented procedure for dealing with complaints; this

includes requirements to ensure that:

- an appropriate person deals with the complaint,
- the complaint is properly recorded,
- the complaint is properly investigated,
- any action necessary to deal with the cause of the complaint is recorded,
- the impact of the activity causing the problem is minimised,
- steps are taken to ensure that the problem is not repeated,
- details of any justified complaints are reported to senior management,
- that the complainant (or NRW, as appropriate) is responded to in writing,
- if the complaint came via NRW, a suitable documented response is provided to NRW,
- if the complaint has come from a neighbour or a member of the public, a suitable documented response is provided to the complainant, and, if the complaint is substantiated, a report is provided to NRW, and
- the EMS is amended accordingly to reflect any changes;

- ensuring that there are documented procedures covering emergency preparedness and response; these will cover such incidents as major plant failures, significant spillages of potentially polluting substances, loss of mains electrical power, fire, flooding, extreme weather events etc.; these will be incorporated into an Accident Management Plan; Envik Waste ensure that suitable measures are in place to communicate the Plan to all employees, management and contractors who work at the site; the Plan details:
  - The likelihood of each identified incident occurring,
  - The potential consequences of each identified incident,
  - The measures in place to minimise the impact of any potential incident,
  - the arrangements for response to an emergency, including defining specific responsibilities,
  - the measures for dealing with the consequences of an incident,
  - communicating with NRW and other relevant regulatory bodies,
  - communicating with the Facility's neighbours and the local community,
  - the measures for investigating incidents (and near-misses), including identifying suitable corrective action and following up implementation of that action,
  - the measures for recording incidents (and near-misses),
  - the measures for reporting incidents (and near misses) to Senior Management, and
  - the measures for reporting incidents to NRW;
- ensuring that there are documented procedures for carrying out internal audits; these describe how to schedule, conduct, report and manage internal audits;
- ensuring that there is a documented contingency plan in place that:
  - ensures compliance is maintained with all permit conditions and operating procedures during maintenance/shutdown at the Facility or elsewhere,
  - ensures that permitted storage limits are not exceeded and appropriate measures for waste storage and handling continue to be applied, and
  - includes ceasing the acceptance of waste unless a clearly defined method of recovery or disposal has been determined and sufficient permitted storage
- ensuring that a Climate Change Risk Assessment is undertaken and included in the EMS and is reviewed annually.

3.3.4. The outcome of the above is evidence that day-to-day activities are taking place in accordance with the requirements of the EMS and the Facility's Permit, specifically:

- that control measures and procedures are an integral part of the business operation;
- that the EMS is easy for staff to access, understand and use;
- that staff are suitably trained and competent to carry out procedures and control measures; and
- that the requirements of the EMS are effectively communicated to management, staff and contractors
- that the Permit, EMS and associated documents are readily available to external parties.

Check

3.3.5. This element includes:

- ensuring that all regulatory requirements in relation to monitoring and measurement are complied with, specifically:
  - the requirements relating to inspection and testing required under Environmental Permit and the associated procedures / work instructions,
  - the requirements relating to inspection and testing required under the applicable health and safety legislation and the associated procedures,
  - the requirements relating to the control of all inspection, measuring and test equipment relating to environmental requirements
- on-going evaluation of compliance with environmental legal requirements, policy requirements and objectives and targets. Evaluation includes annual review of the legal register, regular site inspections and internal audit procedures;
- ensuring that non-conformities are recorded, investigated and appropriate corrective action is taken by the due date;
- ensuring that the necessary compliance is maintained including reporting and record-keeping required under the Environmental Permit;
- ensuring that internal audits are carried out in accordance with the documented procedures and that any audit actions are followed up; and
- ensuring that the results of all audits are made available to Senior Management.

3.3.6. The outcomes of the above will be:

- that checks are carried out to ensure that the EMS is being implemented as intended; and
- the necessary preventative and corrective actions are undertaken to minimise non-compliances.

Review

3.3.7. This element will include:

- an annual management review of the EMS to ensure that it is appropriate, fully implemented and current;
- a management review of the EMS when:
  - there are changes on site (in activities and/or plant/equipment),
  - if there is an accident, complaint or breach of permit conditions.

- an annual review of both individual and organisational training needs;
- ensuring that all changes to the EMS are properly recorded;
- an assessment of whether the Operator's objectives, and any targets, have been met and reported;
- a review of the Operator's objectives and targets, and, where appropriate, any revisions to these so as to effect continual improvement.

3.3.8. The outcomes of the above will be:

- the EMS is kept up to date, and
- the EMS is continually improved.

4. OPERATING TECHNIQUES

4.1. Technical Standards

4.1.1. **European Legislation** - The following European Legislation will be used to inform the application:

- the Industrial Emissions Directive ("IED") is intended to be a single legislative instrument for permitting, compliance and enforcement of environmental legislation across all member states. The requirement of the IED will therefore be considered relevant at this time; and
- the Best Available Techniques ("BAT") Reference Document ("BREF") for Waste Treatment (October 2018) will be given consideration as although not directly applicable as it covers installations, it provides BAT associated with a number of waste treatments including recovery and disposal of waste.

4.1.2. **National Legislation** – NRW implement the requirements of the IED via the EP Regulations and have provided a number of guidance documents to assist in the preparation of Environmental Permit applications and the ongoing management of permitted sites. The guidance documents used in the preparation of this application are as follows:

- NRW's 'How to comply with your environmental permit' (Version 8, October 2014); and
- Environment Agency ("EA") online permitting guidance (adopted by NRW), such as 'Develop a management system: environmental permits' and 'Risk assessments for your environmental permit' and 'Control and monitor emissions for your environmental permit';
- Guidance for applicants H5: Site condition report – guidance and templates (Version 5.0, October 2014);
- EA Sector Guidance Note ("SGN") IPPC S5.06 '*Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste*' (Issue 5, Date 2013). No equivalent NRW guidance is available at the time of writing; and
- EA's Addendum to SGN IPPC S5.06 'Guidance for the storage and treatment of aerosol canisters and similar packaged wastes' (Version 1.0, November 11). No equivalent NRW guidance is available at the time of writing.

4.2. Proposed Waste Activities

Overview

4.2.1. Due to the small scale nature of the proposed waste operations, Envik Waste is proposing to treat a maximum of 500 tonnes of non-hazardous waste and 12 tonnes of hazardous waste per annum. The waste types which will comprise hazardous and non-hazardous waste are discussed in Section 2.1 of this document.

4.2.2. Only those canisters containing, or having contained, propane, butane or a proprietary mix of propane and butane will be accepted into the Facility. Foams will not be accepted and cannot be treated.

Waste Codes to be Accepted at the Facility

4.2.3. The proposed waste codes to be accepted at the Facility are detailed in Table 1 of Section 2.1.

COSHH Risk Assessments

4.2.4. COSHH Risk Assessments for all substances which will be stored or used on site, including the contents of the acceptable waste canisters (propane, butane and propane/butane mix) will be easily accessible to Site staff at all times.

4.2.5. The treatment process, including the waste pre-acceptance criteria and waste acceptance criteria (provided in detail below) and the pre and post treatment storage has been designed by a Gas Safe registered engineer- registration number 665340- having regard to the COSHH assessment for those substances to be accepted (propane and butane).

4.2.6. Staff will be trained on the COSHH assessments as part of the routine training procedures which are incorporated into the EMS. Procedures for the routine review and update (as required) of the COSHH assessments will be included in the EMS.

4.2.7. COSHH assessments for propane and butane are provided at Appendix I.

Waste Pre-Acceptance Arrangements

4.2.8. Envik Waste will put in place a fully documented waste pre-acceptance procedure, which is detailed below. The purpose of the waste pre-acceptance procedure will be to ensure that wastes are subject to appropriate technical appraisal prior to acceptance at the site. In turn, this will ensure that unsuitable wastes (such as foams) are not accepted. These checks will be carried out before any decision is made to accept a waste delivery.

4.2.9. When a waste enquiry is received the following information is requested from the waste producer:

- details of the waste producer, including address and contact details;
- the type of process producing the waste and the specific process from which the waste derives;
- quantity of waste;
- form of waste (e.g. does it comprise foam), properties and classification and description;
- contents of the gas cylinders and canisters including named product and propellant;
- COSHH assessments;
- whether the canisters are fully discharged, partially discharged or unused;
- construction material; and
- hazards associated with the waste.

4.2.10. For mixed loads of gas cylinders and canisters, the following information will be obtained from the customer/waste supplier as a minimum:

- quantity of waste; and
- construction material.

4.2.11. If not obtained from the customer, the content and hazardous properties and acceptability for on-site storage for transfer and treatment will be confirmed by Envik Waste as a priority once the load arrives on site.

4.2.12. Pre-acceptance checks and subsequent assessments will be conducted.

4.2.13. Following characterisation of the waste and confirmation of a match against the waste description, a technical assessment of the waste will be undertaken with regard to its suitability for acceptance at the Facility. Waste will only be accepted with a clear defined recycling/recovery route being determined in advance and costed.

4.2.14. An assessment of the waste producer's paperwork is undertaken. A record of the assessment will be kept, its conclusions, and any actions taken. The technical capability of the Facility shall be pre-determined in terms of nature and quantities of gas cylinders and canisters that can be handled and the condition in which they must arrive.

4.2.15. Where the waste producer's paperwork is partially incomplete or inadequate, requests for the required information (or another audit report) will be requested prior to accepting the waste.

4.2.16. Should the Technical Assessment be undertaken by a third party, Envik Waste will:

- ensure that all details of the content of any audit tools or methodologies and assessment criteria used by that party are provided to Envik Waste;
- ensure that the methodology used by the third party meets Envik Waste's own procedures in relation to pre-acceptance;
- keep a summary report from the third party which will demonstrate that pre-acceptance and assessment has been conducted on waste from the relevant producer with regard to the Facility which contains the following and that will be updated should any information contained within it change:
  - confirmation of the producer types, waste types, etc.
  - confirm a composite waste classification, description, composition, and properties for each waste stream destined for the Facility, derived from each of the pre-acceptance audits and with reference to the permitted wastes for the site,
  - confirmation of any issues that have been identified and what action has been taken with regard to the producers and wastes affected;
- annually audit a random and representative cross-section of the other party's pre-acceptance checks to ensure both the quality of pre-acceptance checks, subsequent assessments, waste classification and descriptions;
- keep records of all audits and electronic records of the pre-acceptance report and assessment.

4.2.17. All records relating to pre-acceptance at the site will be kept for a minimum of five years at the Site Office. Electronic copies will be held on site to ensure direct access to those records for cross-reference and verification at the waste acceptance stage.

Waste Acceptance Arrangements

4.2.18. Envik Waste will put in place a fully documented incoming waste acceptance procedure at the Facility, the primary purpose of which is to confirm that the characteristics of the incoming waste matches the information provided at the pre-acceptance stage. The procedure will be as detailed below.

4.2.19. Waste acceptance paperwork will ensure the following information will be recorded:

- date of arrival on-site;
- time;
- original producers' details (or unique identifier);
- unique reference number and hazard classification;
- type of waste accepted including physical and chemical composition, packaging material, propellant, handling requirements and compatibility issues; and
- quantity of waste accepted (based upon weight and/or no. as appropriate).

4.2.20. Waste will only be accepted when there is sufficient capacity within the Facility and a clear, defined method of recycling/recovery has been determined. This is to prevent accumulation of waste at the Facility.

4.2.21. All documents are checked by the Site Manager (who is adequately trained) prior to the waste being accepted. Any discrepancies will be resolved before the waste is accepted.

4.2.22. Each delivery is visually checked to ensure:

- the waste has been classified, labelled and transported correctly;
- waste is as expected, complies with the waste acceptance criteria and is consistent with paperwork and Environmental Permit;
- check condition of containers to identify any which are damaged or unsuitable;
- inspect the load to identify leaking canisters and potentially explosive accumulation of gas;
- check labelling of containers to ensure it accurately identifies and describes the waste.

4.2.23. Non-conforming waste is described as any waste that:

- the Facility is not authorised to accept;
- is not recorded on the accompanying waste documentation;
- would not be expected, for any other reason, to be present e.g. does not correspond to the pre-acceptance information.

4.2.24. Waste delivered to the Facility must be accompanied by a written description of the waste describing its composition and information specifying the original waste producer.

4.2.25. Prior to arrival at the Facility, checks will be carried out at the supplier site to identify any non-conforming waste to ensure this is not collected and subsequently accepted at the Facility.

4.2.26. In the unlikely event that any waste is identified at the Facility itself which does not meet the criteria outlined, it will be removed to the non-conforming quarantine area and the waste tracking system updated accordingly and quantity of waste recorded. As waste initial visual acceptance checks are undertaken at the supplier site by Envik Waste personnel who

transport the waste to the Facility as the registered waste carrier (and ADR carrier), this is not considered to be a likely occurrence. Nevertheless, the non-conforming waste will be held in the quarantine area for a maximum of 5 days and removed offsite to an appropriately permitted facility/installation.

4.2.27. The waste supplier / producer will be contacted without delay to inform them of the non-conforming waste and identify measures that can be implemented to prevent recurrence.

4.2.28. If a load is found to contain leaking canisters or canisters in poor condition, these wastes shall be immediately removed from the waste reception area (avoiding use of powered vehicles) and stored in the well-ventilated quarantine area and away from sources of ignition prior to treatment and safe transport offsite.

4.2.29. Back-up copies of electronic records will be maintained.

Waste Handling and Storage

4.2.30. A Site Layout Plan (Drawing Reference ENVK.01.01-02 Issue 2) has been submitted with this Environmental Permit application and details the location of the waste treatment and storage areas (pre and post treatment).

4.2.31. It is proposed that Envik Waste shall store a maximum of 50 tonnes of non-hazardous waste at the Facility and 1 tonne of hazardous waste at any one time- The definition of the wastes which will be hazardous and non hazardous is given in Section 2.1 of this document.

4.2.32. As part of the EMS, waste handling and transfer procedures will be implemented. This will include ensuring prevention of accidental damage of canisters due to crushing, falling or impact.

4.2.33. No waste shall be stored on site longer than 3 months. The average storage time for non hazardous waste is 8 weeks. Hazardous waste will be stored for an average of 3 days prior to treatment. Post treatment, any hazardous waste will be removed from site weekly, provided there is sufficient available, and will not remain on site for more than 1 month under normal circumstances.

4.2.34. In exceptional circumstances, such as plant failure, no hazardous or non-hazardous waste will be stored for more than 3 months. Waste will be removed from site to a suitably permitted facility should the site be forced to close for more than 3 months.

4.2.35. The waste storage areas have been chosen based on safe storage operation and to achieve adequate storage capacity. The site has also been designed to ensure all waste storage areas are accessible at all times and that there is a minimal distance from the covered areas to open air.

4.2.36. All incoming waste to the Facility is unloaded into the reception area. The waste is then moved to the appropriate designated waste storage area as directed by the Site Manager to ensure correct waste segregation and based on waste compatibility, including the propellant type; propane, butane or a mixture of propane and butane.

4.2.38. All waste will be removed from the reception area before the end of the working day. The average time that hazardous and non-hazardous waste will reside in the reception area is one hour.

4.2.39. The reception area consists of well-ventilated containers fitted with secure lids to store the incoming waste The containers will be of a sufficient size to ensure they are not overfilled. and will be of a design which is able to retain free liquid. In addition, the containers will benefit from being stored on drip trays which afford additional containment. The reception area consists of impermeable surfacing and only solid waste is accepted at the Facility.

4.2.40. Waste will be segregated into the different designated storage areas shown on Drawing EPTR.01.01-02 Issue 2 (provided with this application) to ensure there will be no mixing of waste types.

4.2.41. In order to prevent the risk of a thermite spark, where practical to do so, aluminium canisters will not be stored in direct contact with steel canisters which are rusty or in poor condition. Steel canisters in poor condition will be removed to the quarantine area (see 4.2.23)

4.2.42. Cardboard and combustible packing will be removed from the storage areas and no other flammable waste will be stored in the storage area.

4.2.43. Waste destined for onsite treatment will be stored separately to cylinders belonging to companies which are only destined for storage and transfer off-site.

4.2.44. Hazardous waste will be stored in separate designated areas from non-hazardous waste.

4.2.45. Each designated area will be clearly marked with signage to display hazard properties of the wastes. COSHH assessments will be available on Site at a location known to all staff.

4.2.46. Each waste type (prior to treatment/removal from site) will be stored in secure, well-ventilated containers with secure lids. The Lids on the containers will remain securely closed at all times when not being filled, emptied or internally inspected.

4.2.47. The containers will be of a design which is able to retain free liquid. In addition, the containers will benefit from being stored on drip trays which afford additional containment.

4.2.48. Containers will be of a sufficient size to ensure they are not overfilled.

4.2.49. All waste containers will be stored under cover in in a well vented location to ensure they are not subject to extreme temperatures or direct sunlight and that rainwater cannot collect in the containers.

4.2.50. Envik Waste will implement a daily visual inspection of all gas cylinders and canisters stored on site. This is to identify any leaking containers. These will be dealt with as described in Section 4.2.

4.2.52. Physical protection measures (barriers) will be in place to protect the storage areas from vehicles. These will be inspected daily and repaired promptly if any issues are identified. Mobile plant is also stored away from storage and treatment areas and have also been selected to prevent introduction of ignition sources. For example, Envik utilise a diesel power forklift truck on site.

4.2.53. Storage areas will be away from sources of ignition and smoking is prohibited on site. An appropriate fire extinguisher system will also be in place. Due to treatment being undertaken, a DSEAR assessment will also be undertaken by a suitably qualified person.

Waste Treatment

4.2.54. Envik Waste shall treat no more than 5 tonnes per day of non-hazardous waste and 1 tonne per day of hazardous waste. Wastes accepted onto site will only contain (or have contained) propane, butane or a proprietary mix of propane and butane. Propane and butane are compatible and frequently provided as a mixture for use in many applications in homes and industry.

4.2.55. The treatment process has been designed so that the residual gases contained in the canisters will be extracted and collected efficiently and safely, as an integral part of the treatment process, enabling them to be recovered/reused at an appropriately permitted facility, whilst managing potentially flammable substances and preventing explosive atmospheres.

4.2.56. Waste treatment at the Facility will be limited to physical treatment of hazardous and non-hazardous waste comprising piercing under suction in an enclosed fit for purpose system, collecting and recompressing gases and piping any residual liquids to one of two, specially designed, compressed-gas storage tanks- one designated for propane and propane/butane mixtures and one for butane only. There are no point source emissions to air or water from the process.

4.2.57. The treatment process, including the waste pre acceptance and waste acceptance criteria and the pre and post treatment storage has been designed by a qualified Gas Safe registered engineer- registration number 665340- having regard to the COSHH assessment for those substances to be accepted (propane and butane). Particular attention has been paid to procedures to ensure that propane will not be stored within the designated butane tank

4.2.58. Although compatible, there are important considerations for storage of propane/butane mixes. Storing liquid butane and propane together in a propane tank is safe as propane tanks are built to withstand the higher pressure required for propane. This is a common industry practice for creating liquefied petroleum gas (“LPG”) blends. However, propane must not be stored in a tank which has been designed for the storage of butane as butane tanks are not strong enough to hold the higher pressure exerted by propane and can rupture or leak.

4.2.59. A schematic diagram showing the waste treatment process is provided in Appendix II. The treatment process can be summarised as follows:

- the gas cylinder is placed into an adjustable, rubber-lined clamp which has been designed to adjust to, and secure, all of the sizes and designs of canisters proposed to be accepted;
- the clamp is closed, piercing the canister with a spike mounted on a rubber bung which seals the system. The bung is connected into the out pipe at all times ensuring the system remains sealed and there can be no fugitive emissions;
- the valve to the required storage tank (propane or butane) is opened (a non return valve is in place to prevent any liquid within the storage tank from exiting) and the gas transfer and recovery compressor ("the compressor") turned on;
- the compressor draws any residual vapour and liquid into an expansion tank and then into the destination storage tank, recompressing any vapour into liquid form;
- the compressor is turned off and the canister removed to the allocated waste storage area prior to removal offsite to an appropriately permitted facility.

4.2.60. Fail safe measures will be in place when the treatment equipment is installed to prevent any propane from entering the butane tank. These include:

- waste pre- acceptance and acceptance procedures to ensure that the compatibility of collected gases is assessed and confirmed before treating canisters and that all canisters are sorted and segregated into clearly labelled storage areas;
- prior to the treatment of each canister commencing, the valve to the appropriate storage tank will be opened (the pipe is fitted with a non-return valve to prevent the contents exiting the tank) and the correct setting selected on the gas transfer compressor to ensure the canister contents are delivered to the correct tank:
- no treatment will commence until these procedures have been undertaken and checked.
- the treatment process cannot operate until the compressor has been programmed and turned on;
- all storage areas and storage tanks are clearly labelled;
- the operating procedures will documented in the EMS and all staff trained on their use. Training is routinely updated under the EMS.

~~4.2.61. A vent flue will be attached to the piercing equipment which will be driven by air flow (vacuum) to disperse the expelled gas to atmosphere at a height of 5m above ground level. No electricity is used to ensure no ignition source is introduced. It is not anticipated that there will be any liquid residue produced as the canisters will be nominally empty. However, the equipment is contained so in the event that any liquid was present, this would be captured within the equipment and would turn to vapour and dispersed via the flue.~~

4.2.62. The proposed compressor is specifically designed for recovery of liquid and vapour from tanks and is widely used across the gas industry for this purpose. It is considered that the use of the compressor, in combination with piercing the canister, will ensure that the maximum amount of hazardous material possible will be removed resulting in both residue and contamination being absent from the treated canister. Treated canisters will therefore be classed as non-hazardous waste and assigned as packaging waste in accordance with the guidance for the storage and treatment of aerosol canisters and similar packaged waste, BS EN 13430 'Packaging: Requirements for packaging recoverable by material recycling' and WM3.

4.2.63. The compressor will be diesel powered and fitted with a spark arrestor and an emergency stop.

4.2.64. The design of the post treatment storage tanks will conform to the UK LPG Code of Practice 01, Parts 1 and 2[1] and in addition to British Standard PD 5500 Category 2[2]. They will be constructed of earthed steel designed to be compatible with the materials held, UN tested and integrally sound. The tanks are designed and constructed to prevent the release of fugitive emissions, for example the connections on the storage tanks will be fitted with male ACME fittings and the transfer hoses are fitted with isolation valves and female ACME fittings which allow the pipework from the collection vehicle to be connected to remove the contents without any emissions.

4.2.65. In accordance with the above Code of Practice, the tanks will be tested at 10 yearly intervals and refurbished every 20 years. This will be included PPMR.

4.2.66. All treatment/storage tanks will be fitted with emergency pressure relief valves to prevent excess pressure build up, in emergency situations. The emergency valves are located on the top of the tanks to direct emergency emissions away from operatives and confined spaces. The pressure relief valves vent excess pressure, preventing tank rupture and explosion

4.2.67. The pressure relief valves conform to UK LPG Code of Practice 01, Part 1.

4.2.68. The UK LPG Code of Practice 01 is titled "Bulk LPG Storage at Fixed Installations: Design, Installation and Operation of Vessels Located Above Ground." It was published by UKLPG (now Liquid Gas UK) and represents industry-agreed best practice for above-ground bulk LPG tanks . Part 1 covers every stage of an above-ground bulk storage installation, from conceptual design through to day-to-day operation. It was drafted by industry experts in consultation with the Health and Safety Executive and other stakeholders to ensure both technical rigor and practical applicability.

4.2.69. As an additional measure to prevent explosion, gas leakage detectors will be installed on the treatment equipment which use sensors to continuously monitor the concentration of the combustible gases, propane and butane, and trigger an audible and visual alarm if the lower explosion limit ("LEL") is reached.

4.2.70. Recovered gases will be removed regularly to a suitable recovery facility preventing build up on Site.

[1] https://www.liquidgasuk.org/uploads/DOC65F1825C7F50A.pdf
[2] https://knowledge.bsigroup.com/products/pd-5500-2021-a2-2022-specification-for-unfired-pressure-vessels

4.2.71. All pipework used to transfer liquids/compressed gases from the canister to the tanks will be securely sealed and made from an anti-static material and will conform with UKLPG Code of Practice 22[3].

4.2.72. In accordance with the UKLPG Code of Practice 22, the pipework is tested prior to installation, this testing being certified for 5 years. After the 5-year period, the pipework will be hydraulically tested annually. This will be included in the PPMR.

4.2.73. Pipework will be regularly inspected and replaced as required. It is noted that only minimal liquids and compressed gases will be present in the pipework as the canisters being treated are nominally empty.

4.2.74. The storage tanks and expansion tank will be checked and cleaned periodically to prevent build-up of flammable residues.

4.2.75. Canister treatment and the storage of recovered gases/liquids will be undertaken in a well-ventilated, covered area to prevent the formation of an explosive atmosphere. The gas treatment equipment and post-treatment storage tanks will be located on impermeable hardstanding and isolated from the drainage system with suitable separation from stored combustible materials, other sources of ignition and sensitive receptors.

4.2.76. It is proposed that Envik Waste shall store a maximum of 50 tonnes of non-hazardous waste at the Facility and 1 tonne of hazardous waste at any one time.

~~4.2.77.~~ Waste acceptance procedures are in place to ensure that only canisters containing propane, butane and propane/butane mixes are accepted. All other waste types, including foams, are excluded. These gases are compatible, other than during bulk storage, and as such separate tanks are in place. Full details of the measures in place to prevent incompatible storage are given in paragraph 4.2.58. ~~compatibility of collected gases/residual liquids is assessed and confirmed before treating canisters that contain different products. The tanks and pipework will be cleaned between treatments where it is assessed that cross-contamination of the collected residues may have occurred or where non compatible substances have been previously treated.~~

4.2.78. The equipment has been selected to ensure it is fit for purpose and specifically designed for the treatment of canisters and the recovery of their materials and residues.

4.2.79. The risk of explosion is considered low due to the minimal residual gas that is being expelled during the treatment activity and the safety features in place. However, a Dangerous Substances and Explosive Atmospheres Regulations 2002 (“DSEAR”) assessment will be undertaken by a suitably qualified person. The identified DSEAR zoned areas of the site will be provided with warning signs, which identify the zone classification and prohibited activities.

4.2.80. Written operating procedures will be in place and all site operatives using the equipment will be appropriately trained in the operating procedure, code of good practice and emergency procedures.

[3] https://www.liquidgasuk.org/codes/cops/code-of-practice-22

Waste Dispatch

4.2.81. Waste shall be removed offsite to an appropriate licensed facility or installation.

4.2.82. The majority of the treated canisters shall be removed as 15 01 04 (empty packaging) if both the residue and contamination are absent and the container is not made of hazardous solid material in accordance with WM3.

4.2.83. Residual gases extracted from the treated canisters will be recovered/reused at an appropriately permitted facility.

4.2.84. Any cylinders accepted which are the legal property of a company, for example BOC or Flogas, remain the property of that company and will be removed from site and returned to the registered company.

4.2.85. Removal of waste materials from the Facility will be documented in accordance with Duty of Care requirements and relevant documentation.

Records

4.2.86. A waste tracking system will be implemented which will hold all the information generated during the pre-acceptance, acceptance, storage, treatment and removal off site.

4.2.87. Records are made and kept up to date on an ongoing basis to reflect deliveries, on-site treatment and despatches. The tracking system operates as a waste inventory control system and includes:

- date of arrival on-site;
- producer details;
- all previous holders;
- a unique reference number;
- pre-acceptance and acceptance analysis results;
- intended recycling route;
- the nature and quantity of all wastes held on site (this includes all hazards);
- the physical location of the wastes in relation to the site layout plan;
- where the waste is in the designated disposal route; and
- identification of site staff who have taken any decisions regarding the acceptance or rejection of waste streams and the recovery or disposal options.

4.2.88. The reporting system can provide reports on the following:

- the total quantity of waste present on site at any one time;
- a breakdown of the waste quantities being stored pending on-site treatment,
- breakdown of waste quantities on site for storage pending onward transfer;
- the physical locations of the waste in relation to the site layout plan.
- a comparison of the quantity of waste stored on site against the total permitted to be stored; and
- a comparison of the time the waste has been stored on site.

4.2.89. All records are held in hard copy and electronically within the office building so that they are readily available. All digital Waste Transfer Note records will be held for a maximum of 4 years to satisfy Duty of Care requirements. All other documentation will be held for 6

years or until Permit surrender in accordance with the Permit. Back up copies are maintained offsite.

4.3. Proposed Infrastructure and Drainage Arrangements

4.3.1. The storage, treatment and quarantine areas, benefit from impermeable surfacing. The Facility is located within a secure compound, completely enclosed by 2m high metal palisade fencing and a lockable main entrance gate which is locked out of hours. The yard is also located within the Cambrian Industrial Estate which benefits from its own security measures, including security surveillance, security lighting and lockable front entrance gate.

4.3.2. The site is isolated from the drainage system. The incoming waste canisters will be stored in secure, lidded-containers which are able to retain free liquid and in addition benefit from being stored on drip trays which afford additional containment. The drip trays will be regularly inspected and emptied of any collected rainwater (pumped to tanker for disposal at a suitably permitted facility) as required. Post treatment storage tanks will be located within a bund with a capacity of 110% of the volume of the tanks.

4.3.3. Although impermeable surfacing and containment measures are in place, it is noted that only canisters which contain propane or butane or proprietary mixes of both propane and butane will be stored on site. These substances exist as a gas at room temperature and are only in a liquid state whilst in the canisters as they are under pressure. In the unlikely event of a leakage or spill the liquid would rapidly volatilise and there would be no accumulation on the ground which could impact groundwater or surface water.

4.3.4. The majority of canisters which will be processed on the Site will be nominally empty thus further reducing the potential for any liquid to accumulate should there be a leak or spillage.

4.3.5. The location of the closest off-site storm drain is shown on drawing EPTR.01.01-01, provided with this application.

4.3.6. Envik Waste will implement a regime of visual site condition checks which will be undertaken weekly to ensure that the infrastructure is maintained in good condition. The site condition inspection checks/ site audits will cover:

- condition and integrity of the impermeable concrete hardstanding;
- condition and integrity of storage containers and skips;
- condition and integrity of vehicles/equipment;
- condition and integrity of the treatment plant, including the compressor, and post-treatment storage tanks;
- condition and integrity of fire detection and fire-fighting equipment and spill containment provisions; and
- condition and integrity of the site buildings, fences and gates; and
- general housekeeping standards;

4.3.7. The results of these checks and details of any remedial action and maintenance that may be required in order to ensure good condition will be recorded in the site diary.

5. EMISSIONS

5.1. Emissions to Air

5.1.1. Treatment will be undertaken using bespoke equipment designed to remove all residual gases via a sealed system with no emission points. The system has been designed by a registered Gas Safe Engineer and conforms to industry standard codes of practice (see Section 4.2 above).

5.1.2. EMS procedures will include carrying out a daily programme of inspection and regular maintenance of all storage containers (See Section 4.3.). The use of enclosed/covered containers, as well as undertaking regular housekeeping, will reduce the risk of fugitive emissions to air.

5.1.3. Daily inspection of the treatment equipment including pipework and storage tanks and servicing of the compressor in line with the manufacturers recommendations will ensure the system remains fit for purpose and minimise the risk of fugitive emissions.

5.1.4. As detailed in the Environmental Risk Assessment ("ERA") submitted with this application, there is minimal potential for fugitive emissions of dust and fine particulates to air. The waste types accepted on site will not generate dust and fine particulates. All waste is stored in sealed containers under cover. There are minimal vehicle movements. The site will be inspected daily and measures taken to dampen down site surfaces during dry weather as required.

5.1.5. The potential for other sources of fugitive emissions to air from the proposed operation is considered to be very limited.

5.2. Emissions to Surface Water

5.2.1. There will be no point source emissions to surface water. There is no direct connection to surface water at the Facility.

5.3. Emissions to Sewer

5.3.1. There will be no point source emissions to sewer. There is no direct connection to sewer at the Facility.

5.4. Emissions to Land

5.4.1. There will be no point source emissions to land.

5.5. Fugitive Emissions to Surface Water, Sewer and Groundwater

5.5.1. The storage and treatment areas are impermeable hardstanding and isolated from the drainage network. The incoming waste canisters will be stored in secure, lidded-containers which are able to retain free liquid and in addition benefit from being stored on drip trays which afford additional containment. The drip trays will be regularly inspected and emptied of any collected rainwater (pumped to tanker for disposal at a suitably permitted facility) as required.

5.5.2. Post treatment storage tanks will be located within a bund with a capacity of 110% of the volume of the tanks.

5.5.3. The treatment equipment including pipework and storage tanks has been designed by a registered Gas Safe Engineer and conforms to industry standard codes of practice (see Section 4.2 above).

5.5.4. Fugitive releases to the groundwater will be prevented by the impermeable surfacing and containment systems detailed above which provide a barrier to prevent a pathway for migration to ground and groundwater.

5.5.5. Although impermeable surfacing and containment measures are in place, it is noted that only canisters which contain propane or butane or proprietary mixes of both propane and butane will be stored on site. These substances exist as a gas at room temperature and are only in a liquid state whilst in the canisters as they are under pressure. In the unlikely event of a leakage or spill the liquid would rapidly volatilise and there would be no accumulation on the ground which could impact groundwater or surface water.

5.5.6. Only 20 litres of diesel for the fork lift truck and compressor will be stored within a control of substances hazardous to health ("COSHH") cabinet within the onsite building isolated from any drainage network.

5.5.7. Plant and equipment will be subject to regular maintenance and servicing as per the Facility's PPMR. This will ensure they are in good working.

5.5.8. Regular site inspections will be undertaken which will include observing any spillages and to guarantee the continued integrity of storage containers and impermeable concrete surfacing. If remedial action is required, this will be undertaken immediately.

5.5.9. All employees will be suitably trained in all aspects of the EMS including spill response, such as the deployment of absorbent mats. Spill kits will be strategically located and contents regularly inspected and maintained.

5.6. Fugitive Emissions to Land

5.6.1. As detailed in the ERA submitted with this application, due to the waste types accepted there is minimal risk of fugitive emissions to land.

5.6.2. The waste types accepted pose a minimal risk of generating windblown litter. In addition, wastes are kept in sealed containers and under cover. There is a 2m high fence around the facility which will minimise the risk of any windblown litter leaving the premises.

5.6.3. The nature of the activities undertaken mean that there is limited risk of mud being generated. There is minimal vehicle access on the premises minimising the risk of any mud being taken onto public highways. Vehicles will be inspected before leaving site and tyres washed down if required.

5.6.4. Regular site inspections will be undertaken, which will include recording litter and mud within the facility and on the road outside the facility gate. If remedial action is required, this will be undertaken immediately.

6. GENERAL REQUIREMENTS

6.1. Emissions Management

6.1.1. The Environmental Risk Assessment ("ERA") (Document Reference ENVK.01.01/ERA Issue 4) submitted as part of this application has demonstrated that emissions of substances not controlled by emission limits (i.e., fugitive emissions) are not considered to be significant, consequently, an Emissions Management Plan is not required as part of this application.

6.2. Odour Management

6.2.1. The proposed waste types to be accepted are not considered odorous in nature. The ERA (Document Reference ENVK.01.01/ERA Issue 4) submitted as part of this application has demonstrated that odour emissions are not considered to be significant, consequently, an Odour Management Plan is not required as part of this application.

6.3. Noise Management

6.3.1. The proposed operations are not considered to be noise generating. The ERA (Document Reference ENVK.01.01/ERA Issue 4) submitted as part of this application has demonstrated that noise emissions are not considered to be significant, consequently, a Noise Management Plan is not required as part of this application.

6.4. Pest Management

6.4.1. The proposed waste types are not considered to attract pests. Consequently, a Pest Management Plan is not required as part of this application.

6.5. Dust and Fine Particulates

6.5.1. The proposed waste types will not generate dust and fine particulates. Therefore, a dust management plan is not required as part of this application.

6.6. Mud Management

6.6.1. The proposed operations will not generate mud. Consequently, a mud management plan is not required as part of this application.

6.7. Fire Management

6.7.1. Due to the nature of waste to be accepted (hazardous waste and gas cylinders/ aerosols/canisters), a Fire Prevention Plan is not required as part of this application.

6.7.2. General fire prevention and protection measures will be implemented in accordance with the Facility's ERA (Document Reference ENVK.01.01/ERA Issue 4). Of particular note, storage areas are kept away from sources of ignition and smoking is prohibited on site. An appropriate fire extinguisher system will also be in place. Due to treatment being undertaken, a DSEAR assessment will also be undertaken by a suitably qualified person.

6.8. Waste Hierarchy

6.8.1. In accordance with the requirements of regulation 12 of the Waste (England and Wales) Regulations 2011, and in-line with good environmental practice, the operations undertaken at the facility apply the Waste Hierarchy as follows:

- **Prevention** - Preparing canisters and fire extinguishers for reuse/refilling promotes reduced waste generation at the source
- **Reuse** - Gas canisters and fire extinguishers are checked on arrival to site and if suitable are transferred off site for re-use/re-filling at appropriate facilities. Any residual gas and liquids extracted from canisters during treatment is sent off site via a licensed waste carrier for reuse at a suitably licensed facility/installation.
- **Recycling** - Gas cylinders which cannot be re-used are treated on site to ensure all reasonable efforts have been made to remove the left-over contents. The resulting metal is sent of off-site to be recycled. Packaging materials are recycled at appropriately permitted facilities.
- **Other Recovery/Disposal -** Any remaining waste from the treatment process which is not suitable for recycling is disposed of at suitable waste disposal facilities. Options are regularly evaluated to ensure disposal to landfill and incineration without recovery are avoided where possible.

7. APPLICATION SITE CONDITION REPORT

7.1. An Application Site Condition Report ("ASCR") has been prepared to form part of the Environmental Permit application. The ASCR (Document Reference ENVK.01.01/ASCR Issue 3) has been submitted as part of this application.

8. MONITORING

8.1. Monitoring of Emissions to Air

8.1.1. There will be no point source emissions to air.

8.1.2. Fugitive emissions to air will be prevented by conducting all treatment of canisters in a fully enclosed, sealed system. Therefore, no monitoring of emissions to air is proposed.

8.1.3. The Site Manager will undertake daily visual and olfactory (sniff testing) monitoring to ensure no fugitive emissions to air are present and monitoring will be recorded in the site diary.

8.2. Monitoring of Groundwater

8.2.1. Fugitive releases to the groundwater will be prevented by the surfacing and containment measures in place which prevent a pathway for migration to ground or groundwater. Consequently, no monitoring of groundwater is proposed.

8.3. Monitoring of Surface Water and Foul Water

8.3.1. There will be no point source (i.e., process contribution) to water. Therefore, monitoring of water is not applicable.

8.4. Process Monitoring

8.4.1. Gas leakage detectors will be installed on the treatment equipment which use sensors to continuously monitor the concentration of the combustible gases, propane and butane, and trigger an audible and visual alarm if the LEL is reached.

8.4.2. In addition to the continuous monitoring for LEL, the treatment and post treatment storage tanks (one propane and one butane) are fitted with liquid contents gauges/ullage valves to prevent them from being over filled and pressure gauges to ensure the tanks are operating within safe pressure limits thus preventing over-pressurization and ensuring the integrity of the storage vessel.

8.4.3. The valves and gauges will be monitored, and readings documented, prior to each canister being treated and at set intervals during the working day, to ensure the process is operating safely and efficiently. A documented procedure for process monitoring and check list for recording readings will be included in the EMS.

8.4.4. All staff members will be trained on the process monitoring by the qualified gas engineer who designed and will install the equipment.

9. RESOURCE EFFICIENCY

9.1. Overview

9.1.1. As part of the EMS, Envik Waste will monitor consumption of raw materials as well as the annual generation of waste, with a frequency of at least once per year.

9.2. Energy Efficiency

9.2.1. The storage activities do not consume electricity and the treatment equipment shall not use electricity to prevent introducing an ignition source. Consequently, monitoring of energy consumption and implementation energy efficiency measures are not applicable.

9.3. Raw Material Justification

9.3.1. The primary raw material is the waste source itself i.e. gas cylinders, canisters, aerosols.

9.3.2. 20 litres of diesel for the fork lift truck and compressor will be stored within a control of substances hazardous to health ("COSHH") cabinet within the onsite building isolated from any drainage network.

9.3.3. Envik Waste's vehicles used for waste collections are serviced and maintained every 10 weeks.

9.4. Waste Minimisation

9.4.1. The proposed activities to be undertaken are based on the application of the waste hierarchy and in particular, waste prevention and recycling.

9.4.2. For each waste stream, the following will be monitored and recorded as part of the Waste Tracking System;

- the physical and chemical composition of waste;
- its hazard characteristics; and
- handling precautions and substances with which it cannot be mixed.

9.4.3. Using the information recorded as part of the waste tracking system, a waste minimisation audit will be undertaken 12 months after the Environmental Permit has been issued. This will allow Envik Waste to set a baseline against which improvement targets can be set.

10. COMPLIANCE WITH BAT CONCLUSIONS

10.1. Overview

10.1.1. It is considered that the techniques that will be in use at the proposed Facility will constitute BAT and will be appropriate and proportionate for the scale of the activities at the Facility and the risks that are posed to the environment by these activities.

10.1.2. The BAT Requirements for the proposed Facility have been taken the *BREF for Waste Treatment* (October 2018) and the EA's IPPC S5.06 '*Recovery and disposal of hazardous and non-hazardous waste'* (Issue 5, May 2013).

10.1.3. The additional guidance detailed in the EA's Addendum to SGN IPPC S5.06 'Guidance for the storage and treatment of aerosol canisters and similar packaged wastes' (Version 1.0, November 11) has also been considered.

10.1.4. A demonstration of compliance with applicable BAT is provided in Tables 2, 3 and 4.

Table 2: Waste Treatment BREF- General BAT Conclusions

BAT Ref No.	BAT Requirement	Section of Application Document
Overall Environmental Performance		
1	In order to improve the overall environmental performance, BAT is to implement and adhere to an EMS that incorporates all of the following features: I. commitment of the management, including senior management; II. definition, by the management, of an environmental policy that includes the continuous improvement of the environmental performance of the Facility; III. planning and establishing the necessary procedures, objectives and targets, in conjunction with financial planning and investment; IV. implementation of procedures; V. checking performance and taking corrective action; VI. review, by senior management, of the EMS and its continuing suitability, adequacy and effectiveness; VII. following the development of cleaner technologies; VIII. consideration for the environmental impacts from the eventual decommissioning of the plant at the stage of designing a new plant, and throughout its operating life; IX. application of sectoral benchmarking on a regular basis; X. waste stream management (see BAT 2); XI. an inventory of waste water and waste gas streams (see BAT 3); n/a XII. residues management plan – n/a; XIII. accident management plan; XIV. odour management plan - n/a; and XV. noise and vibration management plan – n/a.	Section 3 - Management Techniques
2	In order to improve the overall environmental performance of the plant, BAT is to use all of the techniques given below: a) set up and implement waste characterisation and pre-acceptance procedures; b) set up and implement waste acceptance procedures; c) set up and implement a waste tracking system and inventory; d) set up and implement an output quality management system; e) ensure waste segregation; f) ensure waste compatibility prior to mixing or blending of waste; and g) sort incoming solid waste.	Section 4.2– Proposed Waste Activities

Table 2: Waste Treatment BREF- General BAT Conclusions (Cont.)

BAT Ref No.	BAT Requirement	Section of Application Document
Overall Environmental Performance		
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 as part of the environmental management system.	Section 5 – Emissions and Section 8 - Monitoring
4	In order to reduce the environmental risk associated with the storage of waste, BAT is to use all of the techniques given below. a) optimised storage location; b) adequate storage capacity; c) safe storage operation; and d) separate area for storage and handling of packaged hazardous waste	Section 4.2. – Proposed Waste Activities
5	In order to reduce the environmental risk associated with the handling and transfer of waste, BAT is to set up and implement handling and transfer procedures.	
Monitoring		
8	BAT is to monitor channelled emissions to air with at least the frequency given below, and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.	Section 5 – Emissions and Section 8 - Monitoring g
10	BAT is to periodically monitor odour emissions.	ERA – ENVK.01.01/ERA
11	BAT is to monitor annual consumption of water, energy and raw materials as well as the annual generation of residues and waste water, with a frequency of at least once per year.	Section 9 – Resource Efficiency
Emissions to Air		
12	In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to set up, implement and regularly review an odour management plan, as part of the EMS.	Section 6.2. – Odour Management & ERA – ENVK.01.01/ERA
13	In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to use one or a combination of the techniques listed.	
14	In order to prevent, or where that is not practicable, to reduce diffuse emissions to air, in particular of dust, organic compounds and odour, BAT is to use an appropriate combination of the techniques listed.	Section 5 – Emissions

Table 2: Waste Treatment BREF- General BAT Conclusions (Cont.)

BAT Ref No.	BAT Requirement	Section of EPTR Document
Noise and Vibrations		
17	In order to prevent or, where that is not practicable, to reduce noise and vibration emissions, BAT is to set up, implement and regularly review a noise and vibration management plan, as part of the EMS, that includes all of the following elements: I. a protocol containing appropriate actions and timelines; II. a protocol for conducting noise and vibration monitoring; III. a protocol for response to identified noise and vibration events, e.g. complaints; and IV. a noise and vibration reduction programme designed to identify the source(s), to measure/estimate noise and vibration exposure, to characterise the contributions of the sources and to implement prevention and/or reduction measures.	Section 6.3. – Noise Management & ERA – ENVK.01.01/ERA
18	In order to prevent, or where that is not practicable, to reduce noise and vibration emissions, BAT is to use one or a combination of the techniques given below. (a) appropriate location of equipment and buildings; (b) operational measures; (c) low noise equipment; (d) noise and vibration control equipment; and (e) noise attenuation.	
Emissions from Accidents and Incidents		
21	In order to prevent or limit the environmental consequences of accidents and incidents, BAT is to use all of the techniques given below, as part of the accident management plan. (a) protection measures; (b) management of incidental/accidental emissions; and (c) incident/accident registration and assessment system.	Section 3 - Management Techniques
Energy Efficiency		
23	In order to use energy efficiently, BAT is to use both the techniques given below. (a) energy efficiency plan; and energy balance record	Section 9.2 – Energy Efficiency Measures

Table 3: IPPC S5.06 Guidance Document - BAT Requirements

Ref No.	BAT Requirement	Section of EPTR Document
IPPCS5.06, 2.1 In Process Controls - Section 2.1.1, Pre-Acceptance Procedures to Assess Waste		
1	From the waste disposal enquiry, the Operator should obtain information in writing relating to: • The type of process producing the waste; • The specific process from which the waste derives; • The quantity of waste; • Chemical analysis of the waste (individual constituents and as a minimum their percentage compositions); • The form the waste takes (solid, liquid, sludge etc.); • Hazards associated with the waste; and • Sample storage and preservation techniques.	Section 4.2. – Proposed Waste Activities
4	Wastes should not be accepted at the Facility without a clear method or defined treatment and disposal route being determined in advance and costed before the waste is accepted at the Facility.	
14	Following characterisation of the waste, a technical assessment should be made of its suitability for treatment or storage to ensure Permit conditions are being met.	
15	There must be a clear distinction between sales and technical staff roles and responsibilities. If non-technical sales staff are involved in waste disposal enquiries, then a final technical assessment prior to approval should be made. It is this final technical checking that should be used to avoid build-up of accumulation of waste.	Section 3- Management Techniques (3.3.3)
16	All records relating to pre-acceptance should be maintained at the Facility for cross-reference and verification at the waste acceptance stage. These records should be kept for a minimum of 3 years.	Section 4.2. – Proposed Waste Activities

Table 3: IPPC S5.06 Guidance Document - BAT Requirements (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
IPPCS5.06, Section 2.1.2, Acceptance Procedure When Waste Arrives At The Facility		
Load Arrival		
1	On arrival loads should: • be weighed, unless alternative reliable volumetric systems linked to specific gravity data are available; • not be accepted into site unless sufficient storage capacity exists and site is adequately manned to receive waste; • have all documents checked and approved, and any discrepancies resolved before the waste is accepted; and • have any labelling that does not relate to the contents of the drum removed before acceptance on site.	Section 4.2. – Proposed Waste Activities
2	Hazardous wastes should only be received under the supervision of a suitably qualified person (HNC qualified chemist or higher).	
Load Inspection		
3	Visual inspection. Where possible, confirmatory checks should be undertaken before offloading where safety is not compromised. Inspection must in any event be carried out immediately upon offloading at the Facility.	Section 4.2. – Proposed Waste Activities
4	Check every container to confirm quantities against accompanying paperwork. All containers should be clearly labelled and should be equipped with well-fitting lids, caps and valves secure and in pace. Any damaged, corroded or unlabelled drums should be put into a quarantine area and dealt with appropriately. Following inspection, the waste should then be unloaded into a dedicated sampling/reception area.	
5	At this stage, the waste tracking system unique reference number should be applied to each container. Each container should be also labelled with the date of arrival on-site and primary hazard code.	
6	Where containers are bulked, the earliest date of arrival of the bulked wastes should be transposed from the original container onto the bulk container.	
7	The inspection, unloading and sampling areas should be marked on a plan and have suitably sealed drainage systems.	
Sampling – Checking - Testing of Wastes - Storage		
8	Other than pure product chemicals and laboratory smalls, no wastes should be accepted at the Facility without sampling, checking and testing being carried out. Reliance solely on the written information supplied is not acceptable, and physical verification and analytical confirmation are required. All wastes, whether for on-site treatment or simply storage, must be sampled and undergo verification and compliance testing.	Section 4.2. – Proposed Waste Activities

Table 3: IPPC S5.06 Guidance Document - BAT Requirements (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
Sampling – Checking - Testing of Wastes - Storage		
9	The Operator should ensure that waste delivered to the Facility is accompanied by a written description of the waste describing: • the physical and chemical composition; • hazard characteristics and handling precautions; • compatibility issues; and • information specifying the original waste producer and process.	Section 4.2. – Proposed Waste Activities
10	On-site verification and compliance testing should take place to confirm: • the identity of the waste; • the description of the waste • consistency with pre-acceptance information and proposed treatment method; and • compliance with permit.	
11	The Operator should have clear and unambiguous criteria for the rejection of waste, together with a written procedure for tracking and reporting such non-conformance. This should include notification to the customer/waste producer and the Regulator. Written/computerised records should form part of the waste tracking system information.	
12	Documentation provided by the driver, written results of acceptance analysis, details of offloading point or off-site transfer location should be added to the tracking system documentation.	
13	A record of sampling regime for each load and justification for the selection of this option should be maintained at the Facility.	
14	Wastes must not be deposited within a reception area without adequate space.	
15	Wastes in containers should be unloaded into a dedicated reception area pending acceptance sampling. Such storage should be for a maximum period of 5 days. During this period there should be no bulking up or mixing of drums or decanting the contents into bulk storage. Wastes should be stored within this reception area according to compatibility in line with HSE Guidance Note. – n/a Appropriate storage must be achieved immediately upon offloading.	
16	Should the inspection or analysis indicate that the wastes fail to meet the acceptance criteria (including damaged or unlabelled drums), and then such loads should be stored in a dedicated quarantine area and dealt with appropriately. Such storage should be more a maximum of five working days. Written procedures should be in place for dealing with wastes held in quarantine, together with a maximum storage volume.	

Table 3: IPPC S5.06 Guidance Document - BAT Requirements (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
17	If the cause of failure to meet acceptance criteria is due to incompatibility, wastes should be segregated immediately to remove the hazard.	Section 4.2. – Proposed Waste Activities and Section 4.3. Proposed Infrastructure and Drainage Arrangements
20	The Facility should have a designated sampling point or reception area. These should be in close but safe proximity to the laboratory/checking facility and the sampling point should be visible (or covered by CCTV), if sampling is not directly supervised by, for example, laboratory staff.	
21	The offloading, sampling point/reception and quarantine areas should have impervious surface with self-contained drainage, to prevent any spillage entering the storage systems or escaping off-site. Attention should be given to ensuring that incompatible substances do not come into contact resulting from spills from sampling, for example, within a sump serving the sampling point. Absorbents should be made available.	
34	The operator should have clear and unambiguous criteria for the rejection of wastes, together with a written procedure for tracking and reporting such non-conformance. This should include notification to the customer/waste producer and NRW. Written/computerised records should form part of the waste tracking system information. The operator should also have a clear and unambiguous policy for the subsequent storage and disposal of such rejected waste. This policy should achieve the following: • identifies the hazards posed by the rejected wastes; • labels rejected wastes with all information necessary to allow proper storage and segregation arrangements to be put in place; and • segregates and stores rejected wastes safely pending removal.	
Records		
35	The waste tracking system should hold all the information generated during pre-acceptance, acceptance, storage, treatment and removal off-site. Records should be made and kept up to date on on-going basis to reflect deliveries, on-site treatment and despatches. The tracking system should operate as a waste inventory/stock control system and include requirements listed.	Section 4.2. – Proposed Waste Activities
36	All records relating to pre-acceptance checks should be maintained and kept readily available at the Facility for cross-reference and verification at the waste acceptance stage.	

Table 3: IPPC S5.06 Guidance Document - BAT Requirements (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
37	The system adopted should be capable of reporting on all of the following: • total quantity of waste present on-site at any one time, in appropriate units; • breakdown of waste quantities being stored pending on-site treatment, classified by treatment route; • indication of where the waste is located on site relative to the site plan; • comparison of the quantity on site against total permitted; • comparison of time the waste has been on-site against permitted limit. These records should be held in a designated area, as agreed with the Agency, well removed from hazardous activities to ensure their accessibility during any emergency.	Section 4.2. – Proposed Waste Activities
38	Back-up copies of computer records should be maintained off-site.	
General		
39	Wastes should not be accepted at the Facility without a clear defined method of recovery or disposal being determined and costed and ensuring there is sufficient capacity being available. These checks should be performed before the waste acceptance stage is reached.	Section 4.2. – Proposed Waste Activities
40	The Operator should ensure that the Facility personnel who may be involved in the sampling, checking and analysis procedures are adequately trained, and that the training is updated on a regular basis.	Section 3.1. – Technical Competence
44	There must be a clear distinction between sales and technical staff roles and responsibilities. If non-technical sales staff are involved in waste enquiries then a final technical assessment prior to approval should be made. It is this final technical checking that should be used to avoid build-up of accumulations of wastes and to ensure that sufficient capacity exists.	

Table 3: IPPC S5.06 Guidance Document - BAT Requirements (Cont.)

BAT Ref No.	BAT Requirement	Section of EPTR Document
IPPCS5.06, Section 2.1.3, Waste Storage		
Offloading/Discharge of Waste		
1	The Operator should have in place a system to ensure that the correct discharge point or storage area is used. The options for this include: • ticket systems; • supervision by site staff and if relevant CCTV; • keys; and • colour-coded points/hoses or fittings of a specific size.	Section 4.2. – Proposed Waste Activities
2	Offloading and quarantine points should have an impervious surface with self-contained drainage, to prevent any spillages entering the storage systems or escaping off-site.	Section 4.2. – Proposed Waste Activities & Section 4.3. – Proposed Infrastructure and Drainage Arrangements
Record Keeping		
5	The Operator should have an internal tracking system which should satisfy the objectives and minimum standards given.	Section 4.2. – Proposed Waste Activities
General Storage Requirements		
6	Storage areas are often the most visible aspects of the Facility. Storage areas should be located away from watercourses and sensitive perimeters, for example, those which may be adjacent to public rights of way, housing or schools, and within the security-protected area of the Facility to prevent vandalism.	Section 4.2. – Proposed Waste Activities & ENVK.01.01-02 Issue 2 Site Layout Plan
7	Storage areas should be located to eliminate or minimise the double handling of wastes within the Facility.	
8	Storage areas should be clearly marked and signed with regard to the quantity and hazardous characteristics of the wastes stored therein.	
9	The total maximum storage capacity of the site should be clearly and unambiguously stated in writing, accompanied with details of the method used to calculate the volumes held against this maximum and set out in the site plan. The stated maximum capacity of storage areas should not be exceeded and the site plan updated to reflect any changes before they are implemented.	

Table 3: IPPC S5.06 Guidance Document - BAT Requirements (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
10	All containers should be clearly labelled with the date of arrival, relevant hazard code(s), chemical identity and composition of the waste and a unique reference number or code enabling identification through stock control and cross-reference to pre-acceptance and acceptance records.	Section 4.2. – Proposed Waste Activities
11	Storage area drainage infrastructure should ensure that all contaminated run-off is contained, that drainage from incompatible wastes cannot come into contact with each other and that fire cannot spread between storage/treatment areas via the drainage system.	Section 4.3. – Proposed Infrastructure and Drainage Arrangements & Section 5.6. – Fugitive Emissions to Surface Water, Sewer and Groundwater
12	Procedures must be in place for the regular inspection and maintenance of storage areas, including drums, vessels, pavements and bunds. Inspections should pay particular attention to signs of damage, deterioration and leakage. Records should be kept detailing action taken. Faults must be repaired as soon as practicable. If containment capacity or capability of bund, sump or pavement is compromised, (unless effecting a repair is more expedient and working with wastes in close proximity does not compromise safety), then waste must be immediately removed until the repair is completed.	
13	There should be daily inspection of the condition of containers and pallets and written records should be kept of these inspections. If a container is found to be damaged, leaking or in a state of deterioration, it should immediately be over-drummed or the contents transferred to another container or processed.	
15	There should be vehicular, for example, forklift, and pedestrian access at all times to the whole of the storage area.	
17	Activities that create a clear fire risk should not be carried out within the storage area, even if it is not formally classified as hazardous. Examples include grinding, welding or brazing of metalwork, smoking, parking of normal road vehicles except while unloading, charging of the batteries of fork lift trucks.	Section 6.5. – Fire Management
Turnover		
18	Storage within the reception area should be for a maximum of five working days. Following receipt, wastes should be treated or removed off-site as soon as possible. The total storage time will depend upon the characteristics of a particular site and the waste types being stored.	Section 4.2. – Proposed Waste Activities

Table 3: IPPC S5.06 Guidance Document - BAT Requirements (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
Storage of Drummed Waste and other Containerised Wastes such as IBCs		
19	Storage under cover for drummed waste has the advantage of reducing the amount of potentially contaminated water that may be produced in the event of any spillage and extending the useful life of the container. It is preferable that wastes are stored under cover. This should also apply to any container that is held in storage pending sampling and emptied containers. Covered areas must have adequate provision for ventilation by means of wall or roof vents or construction of the area, for example, open barn. Any such warehousing should meet the requirements of HSG71.	Section 4.2. – Proposed Waste Activities
21	Containers should be stored with well-fitting lids, caps and valves, secured and in place	
22	Storage areas for containers holding substances that are known to be sensitive to heat and light or reactive with water or moisture should be under cover and protected from water, heat and direct sunlight.	
23	Storage areas for containers holding flammable or highly flammable wastes should meet the requirements of HSG 51, HSG71 and HSG76.	
Aged Stock		
24	It is important to avoid accumulations of waste, which may in turn lead to deterioration in the container resulting in spillage or, in extreme cases, the deformation of the container to such an extent that it cannot be moved.	Section 4.2. – Proposed Waste Activities
Segregation		
25	In addition to the requirements of this document, the segregation of wastes should meet the requirements of HSG71 and be justified by risk assessment.	Section 4.2. – Proposed Waste Activities
Storage of Aerosols		
27	Storage of aerosols should take place under cover in closed containers or cages. Aerosols should not be stored in open containers.	Section 4.2. – Proposed Waste Activities

Table 3: IPPC S5.06 Guidance Document - BAT Requirements (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
Compatibility Testing		
31	In order to prevent any adverse or unexpected reactions and releases before transfer involving the following activities, testing should take place prior to transfer: • tanker discharge to bulk storage; • tank-to-tank transfer; • transfer from container to bulk tank; • bulking into drums/IBCs; and • bulking of solid waste into drums or skips.	Section 4.2. – Proposed Waste Activities
32	Any evolved gases and cause of odour should be identified. If any adverse reaction is observed, an alternative discharge or disposal route should be found.	
Other Storage Requirements		
63	Waste or raw materials in non-waterproof packaging should be kept under cover.	Section 4.2. – Proposed Waste Activities
Container Movement		
64	Drums and other mobile containers should only be moved between different locations (or loaded for removal off-site) in accordance with written procedures. The waste tracking system should be amended to record these changes.	Section 4.2. – Proposed Waste Activities
IPPCS5.06, Section 2.1.4. Treatment – General Principles		
1	Provide adequate process descriptions of the activities and the abatement and control equipment for all of the activities such that the Regulator can understand the process in sufficient detail to assess the operator's proposals and in particular to be able to assess opportunities for further improvements.	Section 4.2. – Proposed Waste Activities
2	Provide an assessment of the efficiency of the treatment process	

Table 3: IPPC S5.06 Guidance Document - BAT Requirements (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
IPPCS5.06, Section 2.2.4, Fugitive Emissions to Air		
1	Dust - The following general techniques should be employed where appropriate: • covering of skips and vessels • avoidance of outdoor or uncovered stockpiles (where possible) • where dust creation is unavoidable, use of sprays, binders, stockpile management techniques, windbreaks and so on • regular wheel and road cleaning (avoiding transfer of pollution to water and wind blow) • closed conveyors, pneumatic or screw conveying (noting the higher energy needs), minimising drops. Filters on the conveyors to clean the transport air prior to release • regular housekeeping • enclosed silos (for storage of bulk powder materials) vented to fabric filters. The recycling of collected material should be considered under Section 2.6; and • enclosed containers or sealed bags used for smaller quantities of fine materials.	Section 5.5. – Fugitive Emissions to Air
2	VOCs - Vent systems should be chosen to minimise breathing emissions (for example pressure/ vacuum valves) and, where relevant, should be fitted with knock-out pots and appropriate abatement equipment	Section 4.2. – Proposed Waste Activities

Table 3: IPPC S5.06 Guidance Document - BAT Requirements (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
IPPCS5.06, Section 2.2.4, Fugitive Emissions to Air		
4	A leak detection and repair (LDAR) programme should be established for installations handling solvents and similar volatile materials. In addition: Drum storage (see Section 2.1.3 on page 32) should be regularly inspected.	Section 5.5. – Fugitive Emissions to Air
IPPCS5.06, Section 2.2.5, Fugitive Emissions to Surface Water, Sewer and Groundwater		
3	For surfacing: • design appropriate surfacing and containment or drainage facilities for all operational areas, taking into consideration collection capacities, surface thicknesses, strength/reinforcement; falls, materials of construction, permeability, resistance to chemical attack, and inspection and maintenance procedures; • have an inspection and maintenance programme for impervious surfaces and containment facilities; and • unless the risk is negligible, have improvement plans in place where operational areas have not been equipped with: o an impervious surface o spill containment kerbs o sealed construction joints o connection to a sealed drainage system.	Section 4.3. – Proposed Infrastructure and Drainage Arrangements & Section 5.6. – Fugitive Emissions to Surface Water, Foul and Groundwater
IPPCS5.06, Section 2.2.6, Odour		
1	The requirements for odour control will be installation-specific and depend on the sources and nature of the potential odour	Section 6.2 – Odour Management
6	The objective is to prevent emissions of odorous releases that are offensive and detectable beyond the site boundary. This may be judged by the likelihood of complaints. However, the lack of complaint should not necessarily imply the absence of an odour problem.	
IPPCS5.06, Section 2.3., Management		
1	Effective operational and maintenance systems should be employed on all aspects of the process whose failure could impact on the environment, in particular there should be: • documented procedures to control operations that may have an adverse impact on the environment; • a defined procedure for identifying, reviewing and prioritising items of plant for which a preventative maintenance regime is appropriate; • documented procedures for monitoring emissions or impacts; • a preventative maintenance programme covering all plant, whose failure could lead to impact on the environment, including regular inspection of major 'non-productive' items such as tanks, pipework, retaining walls, bunds ducts and filters.	Section 3 – Management Techniques and 4.3.4

Ref No.	BAT Requirement	Section of EPTR Document
2	The maintenance system should include auditing of performance against requirements arising from the above and reporting the result of audits to top management.	

Table 3: IPPC S5.06 Guidance Document - BAT Requirements (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
IPPCS5.06, Section 2.3., Management		
Competence and Training		
3	Training systems, covering the following items, should be in place for all relevant staff which cover: • awareness of the regulatory implications of the Permit for the activity and their work activities; • awareness of all potential environmental effects from operation under normal and abnormal circumstances • awareness of the need to report deviation from the Permit; and • prevention of accidental emissions and action to be taken when accidental emissions occur.	Section 3 - Management Techniques
4	The skills and competencies necessary for key posts should be documented and records of training needs and training received for these posts maintained.	
5	The key posts should include contractors and those purchasing equipment and materials;	
6	The potential environmental risks posed by the work of contractors should be assessed and instructions provided to contractors about protecting the environment while working on site.	
7	Where industry standards or codes of practice for training exist (e.g. WAMITAB) they should be complied with.	
Accidents/Non-Conformances		
8	There should be an accident plan which: • identifies the likelihood and consequence of accidents; and • identifies actions to prevent accidents and mitigate any consequences.	Section 3 - Management Techniques
9	There should be written procedures for handling, investigating, communicating and reporting actual or potential non-compliance with operating procedures or emission limits	
10	There should be written procedures for handling, investigating, communicating and reporting environmental complaints and implementation of appropriate actions.	
11	There should be written procedures for investigating incidents, (and near misses) including identifying suitable corrective action and following up.	

Table 3: IPPC S5.06 Guidance Document - BAT Requirements (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
IPPCS5.06, Section 2.3., Management (Cont.)		
Organisation		
13	The company should adopt an environmental policy and programme which: • includes a commitment to continual improvement and prevention of pollution; • includes a commitment to comply with relevant legislation and other requirements to which the organisation subscribes; and • identifies, sets, monitors and reviews environmental objectives and key performance indicators independently of the Permit.	Section 3 – Management Techniques
14	The company should have demonstrable procedures (e.g. written procedures) which incorporate environmental considerations into the following areas: • the control of processes and engineering change on the Facility; • design, construction and review of new facilities and other capital projects (including provision of decommissioning) • capital approval; and • purchasing policy.	
15	The company should conduct audits, at least annually, to check that all activities are being carried out in conformity with the above requirements. Preferably, these should be independent.	
16	The company should report annually on environmental performance, objectives and targets, and future planned improvements. Preferably, these should be published environmental statements.	
17	The company should operate a formal Environmental Management System. Preferably, this should be registered or certified EMS/ISO 140001 system (issued and audited by an accredited certification body).	
18	The company should have a clear and logical system for keeping records of, amongst others: • policies; • roles and responsibilities; • targets; • procedures; • results of audits; • results of reviews.	

Table 3: IPPC S5.06 Guidance Document - BAT Requirements (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
IPPCS5.06, Section 2.4., Raw Materials		
1	The Operator should maintain a list of raw materials and their properties as noted above.	Section 9.3 – Raw Material Justification
2	The Operator should have procedures for the regular review of new developments in raw materials and for the implementation of any suitable ones with an improved environmental profile.	
3	The Operator should have quality-assurance procedures for controlling the impurity content of raw materials.	
4	The Operator should complete any longer-term studies needed into the less polluting options and should make any material substitutions identified.	
IPPCS5.06, Section 2.6., Waste Recovery or Disposal		
1	Waste production should be avoided wherever possible. Any waste that is produced should be recovered, unless it is technically or economically impractical to do so.	Section 9.4 – Waste Minimisation
2	Where waste must be disposed of, the Operator should provide a detailed assessment identifying the best environmental options for waste disposal – unless the Regulator agrees that this is unnecessary.	
IPPCS5.06, Section 2.7., Energy		
Basic Energy Requirements (1)		
1	The Operator should provide the energy consumption information, shown in the table on page 86 of IPPC S5.06 Sector Guidance Note, in terms of delivered energy and also, in the case of electricity, converted to primary energy consumption.	Section 9.2 – Energy Efficiency Measures
2	The Operator should provide the following Specific Energy Consumption (SEC) information. Define and calculate the SEC of the activity (or activities) based on primary energy consumption for the products or raw material inputs that most closely match the main purpose or production capacity of the Facility. Provide a comparison of SEC against any relevant benchmarks available for the sector.	
3	The Operator should provide associated environmental emissions. This is dealt with in the Operator's response to the emissions inventory using the H1 software tool.	
Basic Energy Requirements (2)		
1	Operating, maintenance and housekeeping measures should be in place in the following areas, where relevant: • operation of motors and drives; • lubrication to avoid high-friction losses; • boiler operation and maintenance e.g. optimising excess air; and • other maintenance relevant to the activities within the Facility.	Section 9.2 – Energy Efficiency Measures

Table 3: IPPC S5.06 Guidance Document - BAT Requirements (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
Basic Energy Requirements (2)		
2	Basic low cost physical techniques should be in place to avoid gross inefficiencies. These should include insulation, containment methods (such as seals and self-closing doors) and avoidance of unnecessary discharge of heated water or air (fitting simple control systems such as timers and sensors).	Section 9.2 – Energy Efficiency Measures
4	Energy management techniques should be in place, in particular, the need for monitoring of energy flows and targeting of areas for reductions.	
5	An energy efficiency plan should be provided that: • Identifies all techniques relevant to the Facility, estimates of CO_2 savings that would be achieved by each measure over its lifetime and in the case that the activities are not covered by CCA or DPA, provides information on the equivalent annual costs of implementation of the technique, the costs per tonne CO_2 saved and the priority for implementation.	
IPPCS5.06, Section 2.8., Accidents		
1	A formal structured accident management plan ("AMP") should be in place.	Section 3 – Management Techniques and ENVK.01.01/ERA (Issue 3)
2	The AMP should include: **A – Identification of hazards** to the environment posed by the Facility using a methodology akin to a Hazop study. Areas to consider include, but should not be limited to, the following: • arrangements for the receipt, and checking of incoming wastes, including rejection and quarantine; • arrangements for the storage, segregation and separation of differing waste types; • procedures for the internal transfers, including "bulking up" of waste materials; • transfer of substances (e.g. filling or emptying vessels); • overfilling of vessels; • emissions from plant or equipment (e.g. leaking from joints, over-pressurisation of vessels, blocked drains); • failure of containment (e.g. physical failure or overfilling of bunds or drainage sumps); • failure to contain fire waters;	

Table 3: IPPC S5.06 Guidance Document - BAT Requirements (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
IPPCS5.06, Section 2.8, Accidents (Cont.)		
2	• wrong connections made in drains or other systems; • incompatible substances allowed to come into contact; • unexpected reactions or runaway reactions; • failure of main services (e.g. power, steam, cooling water); • operator error; and • vandalism.	Section 3 – Management Techniques and ENVK.01.01/ERA (Issue 3)
3	**B – assessment of the risks.** The hazards having been identified, the process of assessing the risks should address six basic questions: 1. How likely is the particular event to occur? 2. What substances are released and how much of each? 3. Where do the released substances end up? 4. What are the consequences? 5. What are the overall risks? 6. What can prevent or reduce the risk?	
4	The depth and type of assessment will depend on the characteristics of the Facility and its location. The main factors to take into account include the scale and nature of hazards, the risks to receptors, the nature of the Facility and complexity of activities and the relative difficulty in deciding and justifying the adequacy of the risk-control technique.	

Ref No.	BAT Requirement	Section of EPTR Document
	C - Identification of the techniques necessary to reduce the risks. The listed techniques are relevant to most installations: • there should be an up to date inventory of substances, present or likely to be present, which could have environmental consequences if they escape. • up to date site plan showing the precise location of wastes having specific hazard characteristics with clear identification of the perimeters of the various designated storage areas and their maximum storage capacity; • procedures for checking and handling raw materials and wastes to ensure compatibility with other substances; • storage arrangements for raw materials, products and wastes should be designed and operated to minimise risks to the environment; • automatic process controls backed up by manual supervision to minimise the frequency of emergency situations and to maintain control; • physical protection should be in place where appropriate; • appropriate secondary containment; • techniques and procedures should be in place to prevent overfilling of tanks;	

Table 3: IPPC S5.06 Guidance Document - BAT Requirements (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
IPPCS5.06, Section 2.8, Accidents		

Ref No.	BAT Requirement	Section of EPTR Document
5	• security systems to prevent unauthorised access; • formal systems for logging and recording all incidents etc.; • procedures for responding to and learning from incidents etc.; • roles and responsibilities to personnel involved in incident management; • guidance available on how each accident scenarios might be best managed; • procedures should be in place to avoid incidents occurring as a result of poor communication during maintenance periods; • safe shutdown should be in place; • communication channels with emergency services and other relevant authorities should be established and available for use in the event of an incident. Procedures should be in place to include assessment of harm. • appropriate control technique should be in place to limit the consequences of an accident, such as fire walls etc. • personnel training requirements should be identified and training provided; • the systems for the prevention of fugitive emissions are generally relevant (Section 2.2.4 and Section 2.2.5); • duplicate or standby plant should be provided where necessary, with maintenance and testing to the same standards as the main plant; • spill contingency procedures should be in place to minimise accidental release and then to prevent their entry into water; • process waters, potentially contaminated site drainage waters, emergency firewater, chemically-contaminated waters and spillages should be contained and, where necessary, routed to the effluent system and treated before emission to controlled waters or sewer. Sufficient storage should be provided to ensure that this can be achieved. Any emergency firewater collection system should take account of the additional firewater flows and fire-fighting foams, and emergency storage lagoons may be needed to prevent contaminated firewater reaching controlled waters;	Section 3 – Management Techniques

Table 3: IPPC S5.06 Guidance Document - BAT Requirements (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
IPPCS5.06, Section 2.8, Accidents		
5	• unloading/movement of drums and containers: o typically drums and containers are delivered on wooden pallets and the pallets are unloaded by forklift. The drums are usually secured together often by shrink-wrap. All pal- lets should be sound and undamaged and forklift drivers should be trained in the handling of palletised goods. o any damaged pallets should be replaced on arrival and not transferred into storage. Transfer of damaged pallets may lead to other pallets being stored on top, resulting in further damage and possible collapse of the stack o adequate space should be provided within drum storage areas and drivers should be adequately trained to minimise forklift truck damage to the integrity of drums.	Section 3 – Management Techniques
IPPCS5.06, Section 2.9, Noise		
1	The Operator should employ basic good practice measures for the control of noise, including adequate maintenance of any parts of plant or equipment whose deterioration may give rise to increases in noise (for example, bearings, air handling plant, the building fabric, and specific noise attenuation kit associated with plant or machinery).	Section 6.3. – Noise Management & ERA - ENVK.01.01/ERA (Issue 3)
2	The Operator should employ such other noise control techniques necessary to ensure that the noise from the Facility does not give rise to reasonable cause for annoyance, in the view of the Regulator. In particular, the Operator should justify where Rating Levels (LAeq, T) from the Facility exceed the numerical value of the Background Sound Level (LA90, T).	
3	Further justification will be required should the resulting field rating level (LAR,TR) exceed 50 dB by day and a facade rating level exceed 45 dB by night, with day being defined as 07:00 to 23:00 and night 23:00 to 07:00.	
4	In some circumstances “creeping background” (i.e. creeping ambient) may be an issue. Where this has been identified in pre-application discussions or in previous discussions with the local authority, the Operator should employ such noise control techniques as are considered appropriate to minimise problems to an acceptable level with the BAT criteria.	
5	Noise surveys, measurements, investigations (e.g. on sound power levels of individual items of plant) or modelling may be necessary for either new or for existing installations, depending upon the potential for noise problems. Where appropriate, the Operator should have a noise management plan as part of its management system.	

Table 3: IPPC S5.06 Guidance Document - BAT Requirements (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
IPPCS5.06, Section 2.10 Monitoring		
1	Monitoring should generally be undertaken during all phases of operation (i.e. commissioning, start up, normal operation and shutting down) unless the Regulator agrees that it is inappropriate.	Section 6.3. – Noise Management & ERA - ENVK.01.01/ERA (Issue 3)
Monitoring and Reporting of Air Emissions		
6	Where appropriate, periodic visual and olfactory assessment of releases should be undertaken to ensure that all final releases to air should be essentially colourless, free from persistent trailing mist or fume and free from droplets.	Section 8 .1– Monitoring of Emissions to Air
Monitoring and Reporting of Waste Emissions		
10	For waste emissions, the following should be monitored and recorded: • the physical and chemical composition of waste; • its hazard characteristics; and • handling precautions and substances with which it cannot be mixed.	Section 4.2. – Proposed Waste Activities
Environmental Monitoring (beyond the Facility)		
1	The Operator should consider the need for environmental monitoring to assess the effects of emissions to controlled water, groundwater, air or land, or emissions of noise or odour.	Section 6 – General Requirements & Section 8 – Monitoring
Monitoring of Emissions to Air		
5	Daily visual monitoring to air for smoke, dust, litter, plumes and daily olfactory odour monitoring	Section 8.1. – Monitoring of Emissions to Air and ERA – ENVK.01.01/ERA

Table 3: IPPC S5.06 Guidance Document - BAT Requirements (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
IPPCS5.06, Section 2.11 Closure		
1	Operations during the life of the IPPC Permit should not lead to any deterioration of the site if the requirements of the other sections of this and the specific-sector notes are adhered to. Should any instances arise which have, or might have, impacted on the state of the site, the Operator should record them along with any further investigation or ameliorating work carried out. This will ensure that there is a coherent record of the state of the site throughout the period of the IPPC Permit. This is as important for the protection of the Operator as it is for the protection of the environment. Any changes to this record should be submitted to the Regulator.	Section 3 – Management Techniques
2	Care should be taken at the design stage to minimise risks during decommissioning. For existing installations, where potential problems are identified, a programme of improvements should be put in place to a timescale agreed with the Regulator.	
3	A site closure plan should be maintained to demonstrate that, in its current state, the Facility can be decommissioned to avoid any pollution risk and return the site of operation to a satisfactory state. The plan should be kept updated as material changes occur.	

Table 4: IPPC S5.06 Addendum- Storage and Treatment of Aerosol Canisters and Similar Packaged Wastes

Ref No.	BAT Requirement	Section of EPTR Document
Section 3 – Waste Pre-acceptance and acceptance		
3.1.1.	Written procedures should be in place for ensuring that adequate information (including samples where necessary) is obtained from waste producers to allow the Operator to determine the suitability of a waste for onsite storage and treatment before arrangements are made for its acceptance.	Section 4.2. – Proposed Waste Activities
3.1.2.	The technical capability of a facility should be pre-determined in terms of the nature and quantities of canisters that can be handled and the condition in which they must arrive.	
3.1.3	A system should be in place to inform customers and site operatives of the type of canister(s) that the facility is permitted to accept for storage and/or treatment, specifically considering the chemical content, compatibility and quantity of residual materials.	
3.1.4.	For bulk loads of waste canisters received from canister manufacturers and retailers, the Operator should obtain the following information in writing from the customer: o quantity of waste being delivered o the contents of canisters, including named product and propellant ° o whether the canisters are fully discharged, partially discharged or unused ° o hazard properties posed by contents of canisters (i.e. from MSDS) ° o construction material of canisters (e.g. steel, aluminium or mixed)	
3.1.5.	For mixed loads of canisters, the Operator should obtain the following information in writing from the customer as a minimum: ° o quantity of waste being delivered ° o construction material of canisters (e.g. steel, aluminium or mixed) If not obtained from the customer, the condition, content and hazard properties posed by the contents of the canister should be determined and acceptability for on-site storage for treatment or transfer confirmed by the Operator as a priority once the load has arrived onsite	
3.1.6.	Using the information received from the customer (as detailed in 3.1.4), a technical assessment must be made of the waste's suitability for storage and treatment to ensure that Permit conditions are met.	

Table 4: IPPC S5.06 Addendum- Storage and Treatment of Aerosol Canisters and Similar Packaged Wastes (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
Section 3 – Waste Pre-acceptance and acceptance		
3.1. Appropriate Measures for Waste Pre acceptance		
3.1.7.	The Operator should instruct the customer on requirements regarding the type and condition of containers and packaging that canisters will be accepted in. Requirements for the on-site storage of canisters are detailed in Section 4 of this guidance. Requirements for the transport of canisters are detailed in the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations (CDG) and The European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR).	Section 4.2. – Proposed Waste Activities
3.1.8.	Wastes should not be accepted at the facility without a clear method of treatment (if treated on site) or a defined disposal route (if stored on site pending transfer) being determined in advance and costed.	
3.1.9.	There must be a clear distinction between sales and technical staff roles and responsibilities. If non-technical sales staff are involved in waste disposal enquiries, then a final technical assessment prior to approval should be made to confirm that the waste is suitable for storage and treatment on site and to avoid build-up of accumulations of wastes.	
3.1.10.	All records relating to pre-acceptance should be maintained at the facility for cross-reference and verification at the waste acceptance stage. These records should be kept for a minimum of 3 years.	
3.2 Appropriate Measures for Waste Acceptance		
3.2.1.	The Operator should have clear and unambiguous criteria for the acceptance and rejection of waste, along with written procedures for the reception, inspection, acceptance, non-conformance, and rejection of waste received at the facility. Procedures for the non-conformance and rejection of waste canisters should be in accordance with indicative BAT requirement 34 of Section 2.1.2 of SGN 5.06 and should take into account the requirements of CDR for the carriage of waste dangerous goods.	Section 4.2. – Proposed Waste Activities
3.2.2.	Upon arrival at the facility, the quantity of waste canisters received should be confirmed (based upon weight and/or number as appropriate) and accompanying documentation checked to ensure that the load is as expected and that the site has sufficient storage capacity to take it.	
3.2.3.	Following completion of the initial checks, the waste should be directed to a designated waste reception area where it can be unloaded for visual inspection. The reception area should be well ventilated and covered, and have an impervious surface and a sealed drainage system	
3.2.4.	The waste should not be directed to the reception area and offloaded without further assessment if, upon arrival, the accompanying documents are found to be inconsistent with the waste expected or, based upon the documents, there are concerns regarding the nature or quantity of the waste.	
3.2.5.	Wastes should not be directed to the reception area if it does not have adequate space for its safe and secure storage.	

Table 4: IPPC S5.06 Addendum- Storage and Treatment of Aerosol Canisters and Similar Packaged Wastes (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
3.2.6.	If waste canisters are received in containers that are not secure for on-site storage and well ventilated, based upon an appropriate risk assessment (e.g. taking into account the nature and quantity of the waste, the design and condition of the containers and available site storage provisions), the canisters should either be prioritised for subsequent acceptance checks and transferred to a secure well ventilated container or held in a secure caged storage area as soon as they are accepted on to the site, or rejected in accordance with the facility's waste rejection procedures.	Section 4.2. – Proposed Waste Activities
3.2.7.	Once offloaded in the waste reception area, the waste should be subject to the following detailed visual checks: ° o Check the waste to ensure that it is as expected, complies with the site's waste acceptance criteria and is consistent with accompanying paper work and the site's Permit. ° o Check the condition of the containers in which the canisters have been packaged, in order to identify any that are damaged or unsuitable for handling and storage. o Inspect the load to identify leaking canisters and potentially explosive accumulations of gas, for example by visual inspection and/or using a suitable portable flammable gas detector. ° o Check the labelling of the containers in which the canisters have been packaged to ensure that it accurately identifies and describes the waste, removing any labels that do not relate to the waste. o The Operator should label each container that holds waste canisters with a unique reference number from the site's waste tracking system, the date of arrival and relevant hazard classification(s).	
3.2.8.	Unidentified wastes received at the facility (i.e. canisters without legible labels and with unknown content) should not be accepted unless information is obtained confirming that the waste canisters can be safely stored and, where relevant, treated on-site (i.e. based upon the content of the canisters and the hazard properties posed).	
3.2.9.	Following visual inspection, should the load fail the acceptance criteria, for example if it contains waste that the facility is not permitted to accept, these wastes should be immediately moved to a dedicated quarantine area and dealt with in an appropriate and timely manner. Unless the facility is permitted for the storage and subsequent transfer of the waste, the maximum storage time for waste that has failed the acceptance criteria should be no greater than 5 working days.	
3.2.10.	Should the load be found to contain leaking canisters, these wastes should be immediately removed from the waste reception area, stored in a well ventilated area (e.g. to the open air or an area provided with adequate local exhaust ventilation) and away from any sources of ignition so gases can be safely dispersed and prioritised for treatment if suitable equipment is available on site. Where suitable equipment is not available, the aerosols should not be transported unless they are repackaged for transfer using UN approved salvage packaging provided with appropriate measures to prevent the dangerous build up of pressure, or until the leaking has ceased or slowed sufficiently to present no threat of a flammable atmosphere being generated during transport.	

Table 4: IPPC S5.06 Addendum- Storage and Treatment of Aerosol Canisters and Similar Packaged Wastes (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
3.2.11	Once a load has passed the acceptance checks detailed above it should be moved promptly to a designated storage area. Requirements for the on-site storage of canisters are detailed in Section 4.	Section 4.2. – Proposed Waste Activities
3.2.12.	Records of all the information generated during waste pre-acceptance, acceptance, storage, treatment and/or removal off-site should be made and held in accordance with indicative BAT requirements 35 to 38 (inclusive) of Section 2.1.2 of SGN 5.06.	
Section 4 – Appropriate measures for waste storage and handling		
Section 4.1. Appropriate measures for storage		
4.1.1.	Storage of canisters must take place under cover in secure well ventilated containers or within caged storage areas (see 3.2.6 for definition of a secure and well ventilated container), in a well vented location which is not subject to extreme temperatures or direct sunlight.	Section 4.2. – Proposed Waste Activities
4.1.2.	Canisters received and held in insecure or flammable containers/packaging (e.g. in cardboard boxes, shrink-wrapped on pallets) must be stored in cages or transferred to secure ventilated containers to prevent the risk of them spreading fires by 'missiling' or 'ejection'	
4.1.3.	Canisters held in containers that are not able to collect and hold liquids released from the canisters should be provided with suitable containment measures (e.g. drip trays) or transferred to secure containers that are able to retain free liquid.	
4.1.4.	During storage, lids on containers holding canisters should remain securely closed at all times when not being filled, emptied or internally inspected and the doors/hatches of cages should remain closed and locked when not being used – n/a.	
4.1.5.	Containers used to store canisters should not be over-filled. Over filling can result in canisters being actuated and discharging their contents, either under the weight of the canisters above them, when the container lid is closed or when containers are stacked.	
4.1.6.	Cages used for storage should be robust, fire-resistant and of an appropriate mesh size (based upon the size of the canisters to be stored) to constrain the canisters and prevent any ejection. Where the cage is not constructed with a mesh roof, the mesh wall panels should extend into the roof space of the storage area to ensure that the structure is completely enclosed	
4.1.7.	Containers and tanks holding materials collected from the treatment process should be compatible with the materials held, fully earthed, UN tested and integrally sound, and designed and constructed to prevent the release of fugitive emissions to air (including odour) and ground, whilst allowing for emergency venting where necessary. Containers that can not be enclosed (e.g. skips containing recovered metal which are open to allow for ventilation and drying), should be stored in well ventilated covered storage areas to prevent the collection (and potential contamination) of rainwater and the corrosion/deterioration of the materials held	
4.1.8.	Flammable liquids should not be collected or held in plastic drums or nonconductive plastic IBCs. Containers used to collect and hold flammable liquids from the treatment process should preferably be constructed from steel, or at least anti-static plastic, and designed so that they can be sealed for handling/storage purposes. Anti-static plastic containers and IBCs should only be used to collect and hold flammable liquids if they are held within a self-contained bund and segregated from other dangerous substances (e.g. other flammable materials, oxidisers or corrosive materials).	

Table 4: IPPC S5.06 Addendum- Storage and Treatment of Aerosol Canisters and Similar Packaged Wastes (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
4.1.9.	Segregated storage and the use of appropriate separation distances and/or suitable engineering measures between containers holding incompatible substances is necessary to prevent incidents and as a means of preventing escalation should an incident occur (see HSG 51 for guidance on separation of flammable materials).	Section 4.2. – Proposed Waste Activities
4.1.10.	Canisters should always be segregated from other flammable wastes and potential sources of ignition, preferably in a separate building, or by the use of a fire-resistant enclosure or fire wall.	
4.1.11.	No combustible material should be held within the storage area, other than the canister's packaging, containers and wooden pallets on which they stand.	
4.1.12.	Storage areas should be provided with signs, which clearly display the hazard properties of the wastes that can be stored in them.	
4.1.13	Where safe to do so (i.e. taking into account the potential risk of flammable atmosphere formation), storage areas should be provided with a bunded/kerbed impervious surface and sealed drainage systems.	
4.1.14	Packaging (cardboard etc) removed from the waste should be removed and stored under cover to avoid degradation and enhance its re-use/recovery.	
4.1.15.	Areas of the site where explosive atmospheres could occur (e.g. aerosol storage, sorting and processing areas) should be assessed and, where appropriate, classified into hazardous zones, in accordance with the requirements of DSEAR. Zoned areas of the site should be provided with warning signs, which identify the zone classification and prohibited activities (e.g. smoking, the use of naked flames or other heat sources and hot work (e.g. shrink wrapping guns, gas and oil heaters), and the use of electrical equipment (e.g. mobile phones, cameras, battery charging) and only equipment suitable for operation in the identified hazardous zones should be used. For further guidance on hazardous area classification see the DSEAR Approved Code of Practice (ACoP) and Guidance Series Documents and HSG71.	
4.1.16.	Canisters often contain gases that are denser than air, such as propane and butane, which can accumulate in low lying areas and form a potentially explosive atmosphere. In order to prevent the potential accumulation of these flammable gases, canisters should not be stored in or adjacent to basements, sumps or similar sunken areas. The design of the site drainage system and other containment measures (e.g. site bunding and kerbing) should also take account of this risk (e.g. where possible, avoid locating open drains or drainage channels in close proximity to stored canisters).	
4.1.17.	Appropriate precautions should be taken in the storage and handling of canisters to prevent accidental damage due to crushing, falling or impact.	
4.1.18.	Powered vehicles must not be used to move damaged stock (i.e. canisters that are leaking or suspected of leaking), unless they are specially adapted for use in flammable atmospheres.	
4.1.19	The route to the open air from the storage area should be as short and direct as possible, avoiding areas where gas may collect and sources of ignition.	

Table 4: IPPC S5.06 Addendum- Storage and Treatment of Aerosol Canisters and Similar Packaged Wastes (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
4.1.20.	In order to prevent the risk of a thermite spark during storage and handling activities, wherever possible and practical to do so, aluminium canisters should be stored separately from steel canisters that are rusty or in poor condition and should not be stored in direct contact with unprotected or rusty steel containers.	Section 4.2. – Proposed Waste Activities and 5.1- Emissions to air
4.1.21	The canister reception and storage areas should be provided with appropriate fire detection and fire extinguisher systems. Fire fighting precautions should be chosen based upon the quantity and nature of the content of the canisters stored on site and agreed in consultation with the Fire Service or the Health and Safety Executive.	
4.1.22	The Operator should implement written inspection procedures to assess the condition of all waste containers (e.g. tanks, drums, IBCs and skips), pipework, bunding / kerbing and surfacing, and to carryout prompt remedial action where required or take unsuitable equipment out of use.	
4.1.23	Canisters should be regularly inspected on a frequent basis, for example by visual inspection and/or using a suitable flammable gas detector. Leaking canisters should be immediately removed from the storage area to the open air or an area provided with adequate local exhaust ventilation and away from any sources of ignition so gases can be safely dispersed. The canisters should be prioritised for treatment (if suitable equipment is available on site) or, if necessary, repackaged for transfer using UN approved salvage packaging.	
4.1.24	Canisters affected by rusting or damage from impact should be identified and prioritised for treatment.	
4.1.25	An auditable waste booking and tracking system should be in place in order to avoid the accumulation and storage of aged stock. Canisters should not be held on site for a period longer than 3 months, prior to treatment or transfer.	
Section 5 – Design and Operation of Waste Treatment Processes		
Section 5.2. – Appropriate Measures for the Design and Operation of the Treatment Process		
5.2.1.	The treatment process should be fit for purpose and specifically designed for the treatment of canisters and the recovery of their materials and residues whilst managing potentially flammable substances and preventing explosive atmospheres.	Section 4.2. – Proposed Waste Activities
5.2.2.	The treatment process should be designed and operated (e.g. in terms of waste feed rate, duration of treatment cycle and gas/liquid extraction) to ensure that the residual contents of the canisters are fully discharged and removed in a safe and efficient manner.	
5.2.3.	The treatment plant should be located in a designated covered area or ventilated building, provided with impervious surfaces and sealed drainage systems, and located with suitable separation from stored combustible materials, other sources of ignition and sensitive receptors. The treatment area should be designed in order to avoid the potential accumulation of flammable gases that are heavier than air, for example in sumps or similar sunken areas	

Table 4: IPPC S5.06 Addendum- Storage and Treatment of Aerosol Canisters and Similar Packaged Wastes (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
5.2.4.	The treatment process should be carried out in an enclosed and sealed system provided with means to contain or control an explosion. The plant should be strong enough to contain an explosion (typically up to 10 bar overpressure) or should have explosion relief directed to a safe space or explosion suppression fitted	Section 4.2. – Proposed Waste Activities
5.2.5.	The Operator should ensure that all canisters have been checked and sorted (having regards to relevant COSHH implications11) before being fed into the treatment process to ensure untreatable wastes (e.g. foams) are excluded.	
5.2.7.	In order to maintain the operating efficiency of the treatment system and prevent the accumulation of waste in the treatment area (i.e. of waste that requires sorting, is ready for treatment or has been removed from the treatment stream) the Operator should keep the waste sorting process distinct and separate from the treatment process itself.	
5.2.8.	To prevent damage to canisters and spillage/fugitive release of recovered residues and materials, the facility should be designed to minimise double handling for treatment and subsequent storage.	
5.2.9.	For safety considerations and to prevent the accumulation of wastes on site, the Operator should ensure that reliable recovery or disposal routes are identified and available, and where necessary contracts are in place, for taking the residues/materials recovered from the treatment process and any canisters that have been accepted but can not be treated on site.	
5.2.10	The Operator should ensure that as a minimum all LPG piping systems comply with UKLPG Code of Practice 2212 and are securely sealed, tested and have a procedure in place for their regular inspection.	
5.2.11	Before being stored and sent for recycling, residues remaining on the recovered metals should be collected or allowed to dry.	
5.2.12	The Operator should consider the need for noise and vibration control measures	Section 6.3. – Noise Management
5.2.13	Systems should be in place to ensure that the following are available at all times and remain effective and up-to-date: • process diagrams and plans, with DSEAR hazardous zone areas clearly marked out, • environmental risk assessment, • design specification, • treatable wastes and exclusions, • control system philosophy, • venting and emergency relief systems, • operating and maintenance procedures, • protection during abnormal operations, • COSHH risk assessments.	Section 4.2. – Proposed Waste Activities and ERA (ENVK.01.01/ERA (Issue 3))

Table 4: IPPC S5.06 Addendum- Storage and Treatment of Aerosol Canisters and Similar Packaged Wastes (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
Accident Prevention		
5.2.14.	Site specific risk assessments should be undertaken for the treatment area and associated treatment activities. This will include carrying out a full DSEAR risk assessment to identify and assess areas of the site where flammable gases and liquids are present, activities involving those substances, how they may give rise to risk of fire or explosion, implement measures to eliminate, control or mitigate potential risks to the safety of workers and, if necessary, classify potentially harmful areas of the site into hazardous zones (see DSEAR ACoP and guidance series documents referred to in Section 9). The risk assessments should also cover the potential for adverse chemical reactions occurring between different aerosol contents, the potential for thermite reactions (sparks) between metals (i.e. aluminium canisters and rusty steel) and build-up of static electricity.	Section 4.2. – Proposed Waste Activities and ENVK.01.01/ERA (Issue 3)
5.2.17	The treatment plant should be shielded in order to prevent the loss of any canisters without compromising the areas emergency escape routes or ventilation. Where possible, the operation of the treatment process (e.g. waste loading, piercing and unloading activities) should be automated, rather than manual, so that operators do not need to be in close proximity to the machine during operation.	
5.2.18	The Operator should ensure that the compatibility of collected liquids is assessed and confirmed before treating canisters that contain different products or mixing liquids that were collected from different batches of canisters.	
5.2.19.	Containers used to hold liquids or metal collected from the processed canisters should be checked and cleaned periodically to prevent build-up of flammable residues.	
5.2.20	The Operator must ensure that the treatment plant and associated equipment is cleaned/purged of residual materials between batches or loads of waste where it is assessed that cross-contamination of the collected residues and treated waste materials could impede their subsequent recovery or disposal or pose potential chemical incompatibilities or other health and safety risks.	
5.2.21	The design and construction of the system used to collect liquids released from the canisters during the treatment process should be appropriate to their hazardous properties to ensure that they can be safely collected, contained and transferred.	
5.2.22	Volatile gases are likely to be released from the liquid residues collected from the treated canisters. The treatment process should be designed and operated in a way that maximises the collection and recovery of these gases or, where this is not possible, minimises their release as a fugitive emission to air without giving rise to the creation of potentially flammable atmospheres.	
5.2.23	Electrostatic charges may develop on containers holding non-aqueous liquids and the liquid component collected from treated canisters may be flammable and give off flammable vapours. To prevent the risk of fire, the Operator should ensure that only earthed metal (i.e. steel) or anti-static containers are used for holding flammable liquids. Non-conductive plastic and composite metal-clad IBCs should not be used for this purpose. Pipework used to transfer flammable liquids should also be earthed or made from an anti-static material. All equipment that has the potential to develop an electro-static charge should be earthed and effectively grounded and the effectiveness of systems to safely dissipate electrostatic charge should be maintained and inspected on a regular basis (at least annually or after any event that may negate its effectiveness).	

Table 4: IPPC S5.06 Addendum- Storage and Treatment of Aerosol Canisters and Similar Packaged Wastes (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
Accident Prevention		
5.2.24	The treatment process and treatment area / building should be provided with an appropriate automatic smoke and fire detection, alarm and extinguishing system; linked to automatic plant shut-down where possible.	Section 5.5 – Fire Management and ENVK.01.01/ERA (Issue 3)
Management		
5.2.25	A written operating procedure/code of good practice should be drawn up, and all site operatives trained to follow it. A good standard of supervision should be maintained throughout.	Section 4.2. – Proposed Waste Activities
5.2.26	Adequate and suitable training should be provided for all persons working the treatment process to ensure they are familiar with, and understand, the precautions that must be taken and the emergency procedures to be followed in case of a fire or other incident.	
5.2.27	A high standard of housekeeping should be maintained to prevent the accumulation of combustible material beneath or around the treatment equipment.	
Monitoring		
5.2.30	The Operator should have a procedure in place for the regular inspection and maintenance of the treatment plant and associated containers, tanks, pipework and connections, underground structures (sumps), kerbing/bunding and hardstanding.	Section 4.3. – Proposed Infrastructure and Drainage Arrangements

Table 4: IPPC S5.06 Addendum- Storage and Treatment of Aerosol Canisters and Similar Packaged Wastes (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
Section 6 – Appropriate measures for emissions control		
Section 6.2 Fugitive emissions to air and odour		
6.3.1.	A procedure should be in place for carrying out a regular programme of inspection and maintenance for all containers, drums, tanks, above-ground pipework and connections, and the treatment plant/equipment itself, including seals, pipework, integral tanks, compartments and monitoring devices, with the aim of preventing (detecting and mitigating) fugitive emissions and the potential build-up of flammable atmospheres.	Section 4.3. – Proposed Infrastructure and Drainage Arrangements and Section 5.5. – Fugitive Emissions to Air
6.3.2.	Where safe and practical to do so, the Operator should use closed/sealed systems for transporting and handling the residues collected from the treated canisters (e.g. covered chutes, conveyors and containers and sealed connections between pipework and containers).	Section 4.2. – Proposed Waste Activities
Section 6.4. Fugitive emissions to water, sewer, groundwater		
6.4.1.	The Operator should ensure that all subsurface structures (e.g. sumps, drains and pipework), surfacing and above-ground tanks are designed, constructed, inspected and maintained in line with the requirements of Section 2.2.5 of SGN 5.06.	Section 5.6 – Fugitive Emissions to Surface Water, Sewer and Groundwater
6.4.2.	The storage (of canisters and collected materials and residues) and treatment of canisters should take place in areas of the site that are: • Covered, whilst ensuring adequate ventilation, and • Contained, i.e. provided with impermeable hardstanding and contained drainage, and bunded/kerbed where safe to do so (in terms of preventing the build-up of flammable atmospheres).	
6.4.3.	Drain covers at the site should be colour-coded, i.e. different colours used to demarcate drains that discharge to surface water, foul sewer and contained drainage. (N/A- no drainage on site)	
6.4.4.	The Operator's Environmental Management System should include a preventative maintenance program, competence and training systems and accident plans and procedures that satisfy the requirements detailed in Section 2.3 (specifically Indicative BAT Requirements 1 to 11) of SGN 5.06 in order to prevent and mitigate accidents that could result in fugitive emissions to ground	

Table 4: IPPC S5.06 Addendum- Storage and Treatment of Aerosol Canisters and Similar Packaged Wastes (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
Section 7 – Appropriate measures for process efficiency		
7.1.1.	The Operator should ensure that the facility is designed and operated in accordance with the energy efficiency requirements detailed in Section 2.7 of SGN 5.06 and shall have regard to the energy efficiency measures detailed in Horizontal Guidance Note H2, Energy Efficiency15, specifically Appendix 2.	Section 9 – Resource Efficiency
7.1.4.	The Operator should ensure that the general requirements detailed in Section 2.4 of SGN 5.06 are met during the design and operation of the facility.	
Section 8 – Appropriate measures for accident management		
8.1.1.	The Operator should develop and implement an accident management plan for the facility, which satisfies the requirements detailed in Section 2.8 of SGN 5.06. The accident management plan should specifically consider foreseeable impacts of fire on aerosol cans stored at the facility, along with any other waste held on site, to receptors both on and off site. This should include foreseeable impacts resulting from the rocketing of aerosol cans and failure of containers (e.g. IBCs and drums) in the event of a fire. Measures should be adopted on site to prevent such impacts and minimise their consequences.	Section 3 – Management Techniques & ERA – ENVK.01.01/ERA (Issue 3)
8.1.2.	The Operator should produce emergency plans for the potential accidents identified and assessed by the facility's accident management plan. Emergency plans should provide information on the layout of premises, type, quantity and hazards of materials onsite, location and type of fire fighting equipment, the name of contacts in case of emergency and, where possible, be drawn up in consultation with the local fire service.	
8.1.3.	Procedures and training should be in place to manage identified risks and ensure the rapid initiation of the emergency plan should an accident occur.	
8.1.4.	Where possible, the Operator should involve the emergency services in relevant emergency training activities	Section 3 – Management Techniques
8.1.5.	The accident management plan, and associated emergency plans and risk assessments, should be regularly reviewed and kept up to date, to reflect any changes on site, in terms of waste received, equipment installed/removed, changes in personnel, changes in regulations, and incidents/near-misses.	Section 3 – Management Techniques & Section 4.3. Proposed Infrastructure and Drainage Arrangements & ERA – ENVK.01.01/ERA (Issue 3)
8.1.6.	Physical protection measures should be used at the facility, e.g. bollards and barriers, to protect storage areas and above ground pipework from vehicle and people movements.	
8.1.7.	The site should have security (e.g. fencing, a single manned entrance) that is adequate to guard against intruders on to the site to prevent the threat of malicious activity. Fencing should be constructed in order to prevent missiles being thrown on site. Waste should not be stored close to the perimeter of the site or visible and in the open without shelter/protection.	

Table 4: IPPC S5.06 Addendum- Storage and Treatment of Aerosol Canisters and Similar Packaged Wastes (Cont.)

Ref No.	BAT Requirement	Section of EPTR Document
8.1.8.	Procedures should be developed and implemented, and training provided, for regular site inspections that include, but are not limited to, the following areas: o Condition and operation of treatment plant o Condition of site vehicles/fork lift trucks o Fire detectors, alarms, and fire-fighting equipment o Standards of general housekeeping o Condition of pallets, racking and shelving o Integrity and condition of canisters, drums, containers, tanks, packages, pipework, hoses, seals, and couplings. o Fire exits, signs and emergency lights o Spill containment provisions o Condition and adequacy of PPE o Condition of nitrogen plant / cylinders and associated pipework. o Waste identification/labelling, containment, segregation and separation. o Condition and content of bunds and drains o Adequacy of earthing/grounding o Building ventilation o Condition and accuracy of monitoring/sampling equipment	Section 3 – Management Techniques & Section 4.3. Proposed Infrastructure and Drainage Arrangements & ERA – ENVK.01.01/ERA

APPENDIX I
COSHH ASSESSMENTS: Propane and Butane

COSHH Assessment prepared by ENVIK Waste Recycling Services Limited

Substance / material	Butane											
Suppliers address and phone number	Multiple. List of Suppliers and Phone numbers to be appended when site becomes operational											
Contents / ingredients of product	C4H10						**Is there a work exposure limit**	Yes	☒	No	☐	**Duration** 8 Hrs
Where the product's used	Outside	☒	Inside well ventilated	☒	Inside poorly ventilated	☒	Confined space	☒				
How the products used	Mixing	☐	Pouring	☐	Spraying	☒	Brushing	☐	Applying by hand / hand tools	☐	Loading out	☐
Product hazard levels	High	☐	Medium	☒	Low	☐	**Product state**	Solid	☐	Liquid	☐	Gas ☒

Flammable	Oxidising	Gas under pressure	Explosive	Very toxic	Corrosive	Serious health hazard	Health hazard/irritant	Danger to environment
								
☒	☐	☒	☐	☐	☐	☐	☐	☐

PPE	Gloves	Glasses	Goggles	Face shield	Footwear	PPE Clothes	Dust mask	FFP2 mask	FFP3 mask	Respirator	Noise
											
Outside	☒	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐
Inside well ventilated	☒	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐
Inside poorly ventilated	☒	☐	☒	☐	☒	☐	☐	☐	☐	☐	☐
Confined space	☒	☐	☒	☐	☒	☐	☐	☐	☐	☐	☐

Is the substance hazardous to health when:

Breathed in	☒	Swallowed	☒	In contact with skin	☒	In contact with eyes	☒	Other. Please specify

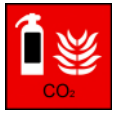
Health risks: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation.
Skin contact: Contact with evaporating liquid may cause frostbite or freezing of skin. In case of frostbite spray with water for at least 15 minutes.
Eye contact: There may be irritation and redness. The eyes may water profusely.
Ingestion: Ingestion is not considered a potential route of exposure.
Inhalation: There may be irritation of the throat with a feeling of tightness in the chest, drowsiness and dizziness.

First aid and emergency measures:

						
Emergency servics	First aider	First aid box	Shower	Eye wash	Wash affected area	Boot wash
☐	☒	☐	☐	☒	☒	☐

First aid details:
After significant accidental inhalation Remove victim to uncontaminated area wearing self-contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
After contact with eyes: Do not rub eyes, as additional cornea damage is possible by mechanical stress. Remove any contact lenses and open the eyelid(s) widely to flush eye(s) immediately by thoroughly rinsing with plenty of clean water for at least 20 minutes. If possible, use isotonic water (0.9% NaCl). Contact a specialist of occupational medicine or an eye specialist.
After skin contact: Wipe off with tissue and wash contaminated area.
After significant accidental ingestion: Wash out mouth with water. Do not induce vomiting. Immediately consult a physician.

Spillage and environmental:
Not regarded as dangerous for the environment. However, contamination of the aquatic and terrestrial environments should be avoided.
Mobility: Store in cool, well-ventilated area. Keep container tightly closed. Keep away from sources of ignition. Prevent the build-up of electrostatic charge in the immediate area. Ensure lighting and electrical equipment are not a source of ignition.
Accidental release: Extinguish all ignition sources. Avoid sparks, flames heat and smoking. Ventilate. Runoff or release to sewer, waterway or ground is forbidden. Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust) and place in containers. Containers must then be properly labelled with correct contents and hazard symbol.

					
Water	Carbon Dioxide	Dry powder	Foam	Fire blanket	Raise alarm
☐	☒	☒	☒	☐	☒

Fire details:
Highly flammable. Forms explosive air-vapour mixture. Vapour may travel considerable distance to source of ignition and flash back.
In case of fire: Stop leak if safe to do so. Do not extinguish flames at leak because possibility of uncontrolled explosive re-ignition exists. Continue water spray from protected position until container stays cool. Use extinguishants to contain the fire. Isolate the source of the fire or let it burn out.

Document author:	**Signed:**	**Date:**

COSHH Assessment prepared by ENVIK Waste Recycling Services Limited

Substance / material	Propane											
Suppliers address and phone number	Multiple. List of Suppliers and Phone numbers to be appended when site becomes operational											
Contents / ingredients of product	C3H8						**Is there a work exposure limit**	Yes	☒	No	☐	**Duration** 8 Hrs
Where the product's used	Outside	☒	Inside well ventilated	☒	Inside poorly ventilated	☒	Confined space	☒				
How the products used	Mixing	☐	Pouring	☐	Spraying	☒	Brushing	☐	Applying by hand / hand tools	☐	Loading out	☐
Product hazard levels	High	☐	Medium	☒	Low	☐	**Product state**	Solid	☐	Liquid	☐	Gas ☒

Flammable	Oxidising	Gas under pressure	Explosive	Very toxic	Corrosive	Serious health hazard	Health hazard/irritant	Danger to environment
								
☒	☐	☒	☐	☐	☐	☐	☐	☐

PPE	Gloves	Glasses	Goggles	Face shield	Footwear	PPE Clothes	Dust mask	FFP2 mask	FFP3 mask	Respirator	Noise
											
Outside	☒	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐
Inside well ventilated	☒	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐
Inside poorly ventilated	☒	☐	☒	☐	☒	☐	☐	☐	☐	☐	☐
Confined space	☒	☐	☒	☐	☒	☐	☐	☐	☐	☐	☐

Is the substance hazardous to health when:

Breathed in	☒	Swallowed	☒	In contact with skin	☒	In contact with eyes	☒	Other. Please specify

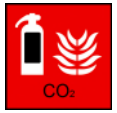
Health risks: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation.
Skin contact: Contact with evaporating liquid may cause frostbite or freezing of skin. In case of frostbite spray with water for at least 15 minutes.
Eye contact: There may be irritation and redness. The eyes may water profusely.
Ingestion: Ingestion is not considered a potential route of exposure.
Inhalation: There may be irritation of the throat with a feeling of tightness in the chest, drowsiness and dizziness.

First aid and emergency measures:

						
Emergency servics	First aider	First aid box	Shower	Eye wash	Wash affected area	Boot wash
☐	☒	☐	☐	☒	☒	☐

First aid details:
After significant accidental inhalation Remove victim to uncontaminated area wearing self-contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
After contact with eyes: Do not rub eyes, as additional cornea damage is possible by mechanical stress. Remove any contact lenses and open the eyelid(s) widely to flush eye(s) immediately by thoroughly rinsing with plenty of clean water for at least 20 minutes. If possible, use isotonic water (0.9% NaCl). Contact a specialist of occupational medicine or an eye specialist.
After skin contact: Wipe off with tissue and wash contaminated area.
After significant accidental ingestion: Wash out mouth with water. Do not induce vomiting. Immediately consult a physician.

Spillage and environmental:
Not regarded as dangerous for the environment. However, contamination of the aquatic and terrestrial environments should be avoided.
Mobility: Store in cool, well-ventilated area. Keep container tightly closed. Keep away from sources of ignition. Prevent the build-up of electrostatic charge in the immediate area. Ensure lighting and electrical equipment are not a source of ignition.
Accidental release: Extinguish all ignition sources. Avoid sparks, flames heat and smoking. Ventilate. Runoff or release to sewer, waterway or ground is forbidden. Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust) and place in containers. Containers must then be properly labelled with correct contents and hazard symbol.

					
Water	Carbon Dioxide	Dry powder	Foam	Fire blanket	Raise alarm
☐	☒	☒	☒	☐	☒

Fire details:
Highly flammable. Forms explosive air-vapour mixture. Vapour may travel considerable distance to source of ignition and flash back.
In case of fire: Stop leak if safe to do so. Do not extinguish flames at leak because possibility of uncontrolled explosive re-ignition exists. Continue water spray from protected position until container stays cool. Use extinguishants to contain the fire. Isolate the source of the fire or let it burn out.

Document author:	**Signed:**	**Date:**

APPENDIX II
SCHEMATIC DIAGRAM OF WASTE TREATMENT PROCESS

Envik Waste Recycling Services LTD