

Attachment 8.2 Waste Hierarchy

IEL Review Application P0005-02
Application ID LA001617



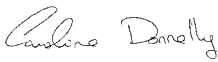

MSD Ireland (Brinny)

Project reference: PR-253914
Project number: 60563354

17 July 2018

For inspection purposes only.
Consent of copyright owner required for any other use.

Quality information

Prepared by	Checked by	Verified by	Approved by
			
Darren Gallagher Environmental Scientist	Patricia Howard Senior Environmental Consultant	Caroline Donnelly Associate Director	Peter Hassett Technical Director

Revision History

Revision	Revision date	Details	Authorized	Name	Position
1	05 th June 2018	First draft	Yes	CD	Associate Director
2	17 th July 2018	Final	Yes	CD	Technical Director

Distribution List

# Hard Copies	PDF Required	Association / Company Name
0	1	MSD Ireland (Brinny)

Prepared for:
MSD Ireland (Brinny)

Prepared by:
Darren Gallagher
Environmental Scientist

AECOM Ireland Limited
4th Floor
Adelphi Plaza
Georges Street Upper
Dun Laoghaire
Co. Dublin A96 T927
Ireland

T: +353 1 238 3100
aecom.com

For inspection purposes only.
Consent of copyright owner required for any other use.

© AECOM recognises that Merck & Co retains the copyright of this report content, but not the intellectual rights, under the terms of Section 8 to an Engineering, Procurement and Construction Management Master Agreement between Merck & Co and AECOM Technical Services Inc., dated 30th March 2016.

Where any conclusions and recommendations contained in this Report are based upon information provided by others, it has been assumed that all relevant information has been provided by those parties and that such information is accurate. Any such information obtained by AECOM has not been independently verified by AECOM, unless otherwise stated in the Report. AECOM accepts no liability for any inaccurate conclusions, assumptions or actions taken resulting from any inaccurate information supplied to AECOM from others.

The methodology adopted and the sources of information used by AECOM in providing its services are outlined in this Report. The work described in this Report was undertaken between May 2018 and July 2018 and is based on the conditions encountered and the information available during the said period of time. The scope of this Report and the services are accordingly factually limited by these circumstances. AECOM disclaim any undertaking or obligation to advise any person of any change in any matter affecting the Report, which may come or be brought to AECOM's attention after the date of the Report.

Table of Contents

1.	Introduction.....	1
1.1	Environmental Management Systems (EMS)	2
2.	Waste Types.....	2
2.1	Non Hazardous Waste	2
2.2	Hazardous Waste	2
3.	Waste Handling	3
4.	Waste Storage & Segregation.....	4
5.	Waste Records	4
6.	Conclusion.....	5

For inspection purposes only.
Consent of copyright owner required for any other use.

1. Introduction

In accordance with Articles 11(3) and 12(1)(h) of the Industrial Emissions Directive AECOM Ireland Ltd. (AECOM) have prepared this attachment for MSD Ireland (Brinny) (known throughout this document as MSD Brinny) to demonstrate how the waste hierarchy has been taken into account in the prevention and management of waste generated at the MSD Brinny site. The waste management operations at MSD Brinny follow the priorities of the waste hierarchy and avoid significant volumes of waste being sent unnecessarily to landfill.

For waste whose generation on site cannot be prevented, measures are in place to ensure that waste is collected separately (where technically, environmentally and economically practicable) and will not be mixed with other waste or other material with different properties.

Waste Management requirements are outlined in Condition 8 (Materials Handling) of the MSD Brinny Industrial Emissions licence (P0005-02) and the associated IED Amendment Condition 2D which states that:

“Condition 2D - The licensee shall ensure that waste generated in the carrying on of the activity shall be prepared for re-use, recycling or recovery or, where that is not technically or economically possible, disposed of in a manner which will prevent or minimise any impact on the environment.”

The principles of the waste hierarchy, as outlined in the Waste Management Act 1996, as amended, including prevention of waste followed by preparing for reuse and recycling/recovery, energy recover and disposal are demonstrated to be implemented on-site through the recovery and disposal routes of the site's waste.

The site has a dedicated waste management procedure in place entitled 'Waste Management and Prevention Procedure' which applies to the management of all hazardous and non-hazardous wastes generated by MSD Brinny. This procedure ensures that waste is prepared for re-use, recycling, recovery or where that is not technically or economically possible, disposed of in a manner which prevents or minimises impact on the environment. The procedure specifically outlines that all wastes generated onsite will have regard to the waste management hierarchy and where feasible shall be managed in the following order of preference:

- a) Strategic Sourcing/Sustainable Use of Materials/Green Chemistry
- b) Prevention
- c) Reduction
- d) Re-use
- e) Recycle
- f) Energy Recovery
- g) Treatment
- h) Disposal

MSD also has a practice in place to establish programs to prevent or minimize waste that are in compliance with regulatory and permit requirements and to the extent practical. These programs address:

- Green Chemistry
- Recycling
- Other beneficial reuse
- Recovery
- Strategic Sourcing

- Sustainable Use of Materials

Attachment 8.1 details waste streams arising at the facility. The quantities provided in the table within attachment 8.1 are based on current waste generation rates (as reported in the most recent AER for 2017). It is anticipated that waste generation will increase in line with product output from the facility over the next 5 years.

1.1 Environmental Management Systems (EMS)

MSDs waste management practices and procedures are further enhanced by the site's EMS. The site's Environmental Management Programme (EMP) ensures that improvements in environmental performance are encouraged in the EMP by setting a series of objectives and targets commonly associated with reducing and minimising resource/material use and waste production generally. A summary of these objective and targets are submitted to the EPA annually within the site's Annual Environmental Report (AER).

2. Waste Types

2.1 Non Hazardous Waste

Attachment 8.1 provides a detailed account of wastes generated on site and included details List of Waste (LoW) Code, description of waste, tonnes generated per annum, waste recovered or disposed of off-site, the disposal or recovery treatment technique and the disposal/recover code. A range of non-hazardous wastes are generated on site, including:

- Plastic packaging
- Wooden Packaging
- Mixed Packaging
- Glass
- Batteries
- Concrete
- Iron & Steel
- Soil & Stones
- WWTP Sludge
- Biodegradable kitchen/Canteen Waste
- Edible Oils & Fats
- Aqueous Washing Liquids & Mother Liquors
- Waste Paint
- Waste Inks
- Waste Engine Oils

The site does not foresee any changes in the composition of non-hazardous waste streams generated by MSD Brinny in the foreseeable future.

2.2 Hazardous Waste

Attachment 8.1 also provides further detail on hazardous wastes generated on site. Typical hazardous wastes that are generated onsite include:

- Acids

- Bases
- Organic Solvents
- Contaminated packaging
- Absorbents & filter materials
- Inorganic wastes
- Laboratory Chemicals
- Aqueous washing liquids & mother liquors
- Waste Oils

Similar to the non-hazardous waste, it is anticipated that the composition of hazardous wastes generated from MSD Brinny will not change in the foreseeable future.

3. Waste Handling

In the case of both hazardous and non-hazardous waste, only licensed waste contractors and waste recovery or disposal facilities are used.

MSD Brinny employs the services of a Total Waste Management (TWM) contractor. The contractor is responsible for the:

- Management of both non-hazardous wastes and hazardous wastes identified in the site waste inventory and any new wastes which may arise.
- Provision and maintenance of the necessary waste management equipment for processing waste.
- Management of the waste storage compound.
- Servicing of all waste bins on site.
- Processing and storage of this waste in UN approved drums compatible with the waste type.
- Transport of this waste using only companies with valid waste collection permits and in compliance with the Carriage of Dangerous Goods by Road Regulations
- Arranging for ultimate disposal/treatment off-site at MSD approved facilities.
- Maintaining an up to date waste inventory (i.e. Waste Register).
- Maintaining waste records.

The MSD Brinny Engineering department oversees the management of the TWM contractor including compliance with all regulatory requirements including those at the local, site specific level with the support of the EHS department.

A waste inventory is maintained on site that lists each waste stream and its regulatory characterisation/classification to identify applicable regulatory and permit requirements. The inventory includes the following information:

- Waste name/identification
- Location of waste (area, department, building, floor, room)
- Hazard(s) associated with the waste
- Name of process/activity producing the waste stream (if different from location)
- Regulation Name
- Regulatory characterisation / classification and type of supporting information (e.g., waste profiles, sample analysis and characterization, process knowledge)

- Rationale for any exemption determinations
- Waste description
- Method of on-site storage (tank, drums, boxes,)
- On-site waste collection and storage locations
- Maximum quantity at each storage location and maximum amount produced annually
- Method of disposition (recycling, reuse, treatment, disposal)

Waste sent off-site for recovery, treatment or disposal is transported by authorised Waste contractors/transporters only and waste is transported from the MSD site only in a manner that does not adversely affect the environment and in accordance with the appropriate National and European legislation and protocols

4. Waste Storage & Segregation

All wastes onsite are managed in accordance with regulatory requirements and IE License and are not stored on site for a period greater than six months.

Wastes are handled and stored on site in order to prevent safety hazards, conditions potentially harmful to onsite personnel or public health and releases to the environment and nuisance such as odours, dust or noise. All wastes are segregated according to waste type and wastes are stored in designated areas and protected as may be appropriate against spillage and leachate run-off.

The following rules are followed for storage:

- Where wastes that are intentionally collected in containers with covers to control nuisances or hazards, covers are kept closed except when being filled or emptied.
- All liquid wastes are stored in closed tanks or sealed containers except when being filled or emptied.
- Waste containers are managed in areas with a non-permeable surface and adequate secondary containment or diversion systems to handle spills.
- Wastes that are incompatible are stored separately and provided with separate secondary containment to prevent hazard upon concurrent release.
- Waste is not permitted, where possible, to come into contact with rain.
- Steel containers of waste are stored in locations that protect the container from corrosion if the container is not designed for outdoor use.
- Wastes containing harmful materials are securely stored at designated locations to prevent accidental release, unauthorized access, and theft.
- Waste storage locations are clearly identified and designated for consolidation and collection of waste with such methods as signage or floor markings. Examples include tanks, collection rooms/areas and storage compounds.

5. Waste Records

The waste management contractor is responsible for recording the quantities of all non-hazardous and hazardous waste removed from the site. All waste records are maintained in accordance with local and national regulations and include:

- Permits, authorizations and certificates related to waste;

- Environmental Protection Agency correspondence including compliance reports;
- Records of all sampling and analysis as well as chain of custody forms;
- Compliance plans and SOPs;
- Copies of personnel certifications/licenses and training records;
- Contracts and agreements related to waste and waste management operations;
- Shipping records including manifests, bills of lading and certificates of destruction where available. Shipping records include:
 - Tonnages and LoW Code for the waste materials sent off-site for disposal/recovery,
 - Names of the agent and carrier of the waste, and their waste collection permit details, if required (including issuing authority and vehicle registration number),
 - Details of the ultimate disposal/recovery destination facility for the waste and its appropriateness to accept the consigned waste stream, including its permit/license details and issuing authority,
 - Written confirmation of the acceptance and disposal/recovery of any hazardous waste consignments sent off-site,
 - Details of all waste consigned abroad for Recovery and classified as 'Green' in accordance with the EU Shipment of Waste Regulations (Council Regulation EEC No. 1013/2006, as may be amended),
 - Details of any rejected consignments,
 - Details of any approved waste mixing,
 - Results of inspections and monitoring,
 - Preventive maintenance and calibration records,
 - Training records,
 - Annual program evaluations.

6. Conclusion

This attachment describes in detail the waste management and prevention procedure that MSD Brinny employ to prevent the generation of waste in accordance with the Waste Hierarchy and where waste cannot be prevented the procedures governing waste management at the MSD Brinny site.

