

Technical Guidelines on Production of Waste-Derived Fuel



Version 1.0 – 22/08/2024

**Waste Strategy and Projects Department
Dubai Municipality**

Document Control

Item	Description			
Document Title:	Technical Guidelines on Production of Waste-Derived Fuel			
Doc Ref:	DM-WSPD-P04-010	Version:	1.0	
Classification	<input checked="" type="radio"/> Open data	<input type="radio"/> Shared - Confidential	<input type="radio"/> Shared - Sensitive	<input type="radio"/> Shared - Secret
Status:	Current	Type:	DOC	
Release Date:				
Revision Date:				

Version No.	Date	Author(s)	Signature
1.0	22/08/2024	Ammar Kamil Mohammed Saeed	
1.0	22/08/2024	Wafa A.Yousef Hanoun	

Document Review and Approval History

Version No.	Date	Reviewer(s)	Signature
Waste Strategy and Project department			
1.0		Mohammed Iqbal Alkhalsan	
1.0		Ali Abdulla Yousuf Al Jaroodi	


Version No.	Date	Approver(s)	Remarks
1.0		Waste Strategy and Project Department Head	

TABLE OF CONTENT

TABLE OF CONTENT	3
LIST OF TABLES	3
LIST OF FIGURES	3
LIST OF ABBREVIATIONS & DEFINITIONS	4
1 INTRODUCTION	6
2 LEGAL FRAMEWORK, CIRCULARS, AND GUIDELINES	7
3 SCOPE AND COVERAGE	9
4 WASTE DISPOSAL AND PERMITS FOR NON-HAZARDOUS WASTE	9
4.1 RECYCLABLE UNWANTED MATERIALS	10
5 OPERATORS OF PRODUCTION OF WASTE-DERIVED FUEL FACILITIES PROVISIONS	11
6 PRODUCTION OF WASTE-DERIVED FUEL	13
6.1 GENERAL PROVISIONS	13
6.1.1 WASTE RECEIPT, UNLOADING, PROCESSING, AND STORAGE	13
6.1.2 AIR EMISSIONS	15
6.1.3 NOISE AND VIBRATION	15
6.1.4 FIRE SAFETY	15
7 OCCUPATIONAL HEALTH AND SAFETY	17
7.1.1 ACCIDENTS AND INJURIES	17
7.1.2 CHEMICAL EXPOSURE	17
8 REFERENCES	19
ANNEX 1: REQUEST FOR PERMIT OF WASTES DISPOSAL	20
ANNEX 2: APPLICATION FORM FOR WASTE PROCESSING/RECYCLING	21
ANNEX 3: SAMPLE UNWANTED MATERIALS DISPOSAL PERMIT	22
ANNEX 4: ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES	23

LIST OF TABLES

Table 1 Application Form for Permit/NOC for Waste Processing/Recycling	21
Table 2 Sample Permit for Disposal of Unwanted Materials to DM Accredited Recycler	22
Table 3 Environmental Factors and Mitigation Measures	23

LIST OF FIGURES

Figure 1 Post EC Compliance Monitoring and Reporting	12
Figure 2 Online registration & request for permit of waste disposal procedures	20

LIST OF ABBREVIATIONS & DEFINITIONS

AESEAS	Environment Sustainability and Environmental Assessment Section
CV	Calorific Value
DET	Department of Economy & Tourism
DM	Dubai Municipality
EC	Environmental Clearance
EfW	Energy from Waste
HSE	Health, Safety and Environment
NOC	No Objection Certificate
OHSMS	Occupational Health and Safety Management System
PPE	Personal Protective Equipment
RDF	Refuse-Derived Fuel
WDF	Waste-Derived Fuel
WDS	Waste Disposal Service
WSPD	Waste Strategy and Projects Department
WTS	Waste Treatment Section
Disposal	Refers to any or combination of the following means or processes where waste is subjected to or rendered for: Direct tipping into landfill; Incineration, burning or combustion in a controlled manner for the purpose of getting rid of waste material; Final deposit at any DM waste treatment complex or landfill; The process of segregation and recovery of the materials for the purpose of recycling or reuse is not considered a disposal
Disposal Site	The site with defined area and boundaries is intended as the final depository of waste. It may be a final depository site of a lined or unlined landfill or any dedicated facility for waste treatment. In the case of waste intended for export, the name of the receiving state or locality shall be referred to as the disposal site.
Non-hazardous waste	is a waste or mixture of wastes that does not pose a substantial threat to public health or the environment and is safer to handle, store, and dispose of compared to hazardous waste. However, it can be harmful to the environment if left untreated. This category includes everyday household items like food waste, paper, cardboard, plastics, glass, metals, and textiles, as well as non-toxic industrial waste, uncontaminated construction and demolition debris, organic waste like yard trimmings and agricultural residues, and certain electronic waste.
Landfill	An area generally used for the disposal of solid wastes by burial. It is either an ordinary unlined landfill or an engineered landfill with basal lining of an impervious material and fitted with a leachate collection system
RASID	Dubai Municipality has introduced the RASID waste management monitoring system to regulate operations of registered waste management companies by streamlining and monitoring waste management transportation and associated activities – from

	collection through transit and till disposal, from analysis review to end-user solutions and by controlling illegal and unauthorized dumping practices.
Recyclables	Waste materials that are broadly classified, within the context of this Policy, as “recyclables”, contain valuable materials meant for recycling or reuse. Recyclables include, for example, papers, plastics, cartons, wood, metals, glass, tires, textiles, lead-acid batteries, Hybrid and Electric Vehicle Battery (EVB) such as Li-ion and NiMH & other EVB, automobiles, WEEE, and many other similar discarded used products.
Unwanted material	Any material/goods declared by their owner to be unwanted and require disposal, or of which a decision for their destruction/ disposal is issued by a competent authority, or that proper disposal requires special care
Treatment (of waste)	An induced change, normally carried out in a treatment facility, in the physical or chemical composition of the waste so as to make it less hazardous, less in volume, and acceptable for final disposal
Waste	Any material disposed of because it is no longer needed. It includes general wastes, hazardous wastes, difficult wastes, and other wastes as classified by the Waste Management Department.
Waste Generator	Any person or party who produces the waste material and/or the Occupier and/or Owner of the premises or facility where the waste is generated. The waste generator is also the “Owner of waste.”
WDS	Request for Permit of Waste Disposal (Hazardous/Trade Waste/Unwanted Materials) - An online permitting system for disposal of all types of waste/wastewater (except domestic waste) generated in the Emirate of Dubai.
Waste Collection	Collection within the meaning of this guideline is the loading, transport & any interim storage of waste for the purpose of transportation to a waste disposal and/or treatment plant.

1 INTRODUCTION

In general, this guideline underscores adherence to the specified legal and regulatory framework, ensuring that Production of Waste-Derived Fuel activity is conducted in compliance with established laws, circulars, and guidelines. This serves to standardize practices across the industry, promoting sustainable waste management practices, safeguarding public health, and preserving the environment within the Emirate of Dubai.

The guideline encompasses detailed operational procedures, safety protocols, contractual obligations, and permit requirements to ensure that waste management practices are conducted responsibly and sustainably within Dubai. Hence, this Technical Guide is intended to deliver:

- a) General provisions such as mandatory training for all personnel involved in Waste-Derived Fuel (WDF) waste handling,
- b) WDF production provisions and permitting requirements,
- c) Procedures and requirements of Waste-Derived Fuel and their operators.
- d) Specific requirements to conduct WDF production activity within Dubai.
- e) Specific provisions for WDF Production activity

Sample forms and permits are presented in the Annexes.

2 LEGAL FRAMEWORK, CIRCULARS, AND GUIDELINES

The relevant provisions of the following laws and regulations were used as guidance and references in the preparation of this technical guideline.

- Circular No. (1) of 2020 On the Comprehensive Inventory of the Recyclable Waste Data in the Emirate of Dubai
- Federal Law (No.) 24 of 1999 and modified by Federal Law (No.) 11 for 2006 regarding Protection & Development of the Environment.
- Local Order No. 11 of 2003 on Public Health and Safety of the Society in the Emirate of Dubai
- Local Order (No.) 61 of 1991 on the Environment Protection Regulations in the Emirate of Dubai
- Local Order (No.) 7 of 2002 on Management of Waste Disposal Sites in the Emirate of Dubai; as amended by Local Order No. (5) of 2003
- Executive Council Resolution (No.) 58 of 2017 Concerning the Approval of Fees and Fines of Waste Disposal in the Emirate of Dubai
- Executive Council Resolution No. (14) of 2015 Amending the Schedule of Public Hygiene-related Violations and Penalties Attached to the Implementing Bylaw of Local Order No. (11) of 2003 Concerning Public Health and Community Safety in the Emirate of Dubai
- Procedures and guidelines for implementing and implementing Administrative Order No. 30/2003, in accordance with Local Order No. 11/2003
- UAE Occupational Health and Safety Management System (OHSMS) National Standard
- Technical Guideline No. 4. on Duty of Care
- Technical Guideline No. 5. on Waste Classification
- Technical Guidelines (97) for Personal Protective Equipment – Foot Protection HSE from the Health & Safety Department
- Technical Guidelines (98) for Personal Protective Equipment – Hand Protection HSE from the Health & Safety Department
- Technical Guidelines (99) on Safety Signs at Work from the Health & Safety Department
- Technical Guidelines (59) for Personal Protective Equipment – Eye and Face Protection HSE from the Health & Safety Department
- Technical Guidelines No 6. Commercial Centers Waste Prevention & Recycling
- Technical Guideline on Waste Plastic Trading Activity
- Technical Guidelines on Transport of Garbage Trucks Activity
- Technical Guidelines on Non-Metal Waste Collecting & Processing

The related circulars and posted information bulletin of this guideline are posted on Dubai Municipality's website – www.dm.gov.ae link to the Waste Department.

The Duty of Care Program is a management tool that controls the waste generated in Dubai. The regulation requires that all transfers of waste are appropriately recorded in order to assist in tracking the quantity generated and movements of waste. Waste treatment & recycling facilities must, therefore, ensure that the required signatures accompany the transfer of waste both into and out of their site and that there is an adequate description (source, quantity, and type) of the waste which contains all the information necessary for safe handling, treatment, recovery, or disposal.

3 SCOPE AND COVERAGE

These Technical Guidelines apply to both waste generators and waste operators involved in activities concerning waste treatment and recycling facilities licensed by the Department of Economy & Tourism (DET) to 3821002- Production of Waste-Derived Fuel in the Emirate of Dubai, including Free Zone Authorities as applicable.

4 WASTE DISPOSAL AND PERMITS FOR NON-HAZARDOUS WASTE

For non-hazardous WDF, which is primarily sourced from municipal solid waste (MSW), waste generators must utilize Dubai Municipality-approved collectors, transporters, and treatment facilities for collection and disposal. Further details are provided in the [Technical Guidelines on Transport of Garbage Trucks Activity & Technical Guidelines on Non-Metal Waste Collecting & Processing](#). Commercial establishments generating waste intended for the production of WDF must provide details of their waste management contracts with Dubai Municipality-approved service providers during the renewal of their licenses. Please refer to [Technical Guidelines No. 6. Commercial Centers Waste Prevention & Recycling](#) for further information.

For other unwanted materials or wastes that do not fall under the above categories, an online permit procedure should be followed if they are non-hazardous.

The procedure for securing an online permit for the treatment and recycling of unwanted or other such waste materials must be conducted through the DM Waste Treatment Section (DM-WTS) by requesting a [Permit of Waste Disposal](#) through the Waste Disposal Service (WDS) to send the waste materials to a DM-Accredited Recycler or a facility operated by DM as shown in Annex 1: Request for Permit of Wastes Disposal. The WDS can be accessed at the Dubai Municipality's website – hub.dm.gov.ae - upon login with a UAE Pass/ User Management ID and password.

The WDS system conveniently allows applicants to file disposal requests 24/7, view request status, and print the WDS upon approval, including online payment

of disposal charges. The following steps summarize the process of applying for an online WDS:

1. **The Waste Generator logs in using Google Chrome at hub.dm.gov.ae as a business with UAE pass/DMUM ID and clicks on “Apply for Service” - “Request for Permit of Wastes Disposal (Hazardous/ Recyclable/ Unwanted Materials)” and chooses “New Permit” with all the necessary attachments for each type of waste as will be described in the next sections.**
2. **File attachments should be in PDF format.** (Ex. BL.pdf, photos.pdf)
3. **Total amounts of waste to be declared in the disposal request shall be in metric tons with the estimated quantity for the wastes that have been accumulated**, including the estimated waste amount to be sent to the facility during the validity period of the permit (three months from the date of issuance).
4. For DM-accredited facilities & recyclers, the **specific waste acceptance criteria set by the facility operators must be complied with.**
5. **The applicant will be informed through e-mail and SMS** once the application is approved by the WDS system.
6. **The exact address of the facility where waste is generated and stored shall be specified in the waste location details** in the application.
7. The **“Permit of Disposal/Destruction” can be obtained by logging in to the WDS account and clicking “Download Permit”.**
8. The payment (amount in AED) **can be paid by an approved transporter with a valid NAFITH (smart gate) and RASID (GPS) account in DM-designated or accredited sites & facilities.**
9. Alternatively, **the fee can be paid by the owner of the waste (waste generator/applicant) who wishes to obtain a “Destruction Certificate” as proof that the waste has been accepted and disposed of at any DM-controlled waste treatment site.** Similar to the permit process, the waste generator/applicant must **log in at hub.dm.gov.ae as a business with UAE pass/DMUM ID. Click “Apply for Service” - “Request for Permit of Wastes Disposal (Hazardous/Trade Wastes/Unwanted Materials”, choose “Disposal Certificate” in the request Type, select WDS permit on the drop-down list, get details and pay the corresponding fee online.**

4.1 Recyclable Unwanted Materials

For **Unwanted Materials intended for recycling** at DM-accredited facilities & recyclers, the following is additionally required:

1. **Additionally, photos of the waste labels, including manufacturing and expiry date;**
2. **Documentary proof of the material is non-hazardous (MSDS/lab test report or published data on the material);**
3. **Application Form for Permit/NOC for Waste Processing/Recycling (Acceptance Letter)** using the format provided by the chosen recycler and as shown in Annex 2. A list of DM-approved recyclers is available on the DM Website.
[https://www.dm.gov.ae/municipality-business/waste-dept /](https://www.dm.gov.ae/municipality-business/waste-dept/)
4. link to the “Waste Department Information Bulletin”.
5. A **copy of the WDS permit shall be submitted to the DM-accredited recycler** to set the schedule of transport and to obtain a collection receipt and Destruction Certificate from the recycler for recording¹.
6. After completion of the recycling/reprocessing of recyclable waste materials, **the waste generator/applicant must log in using Google Chrome at hub.dm.gov.ae as a business with your UAE pass/DMUM ID. Click “Apply for Service” - “Request for Permit of Wastes Disposal (Hazardous/Trade Wastes/Unwanted Materials”, Choose “Disposal Certificate” in the request Type, select WDS permit on the drop-down list, get details, and upload the recycling certificate.**
7. The DM Accredited Recyclers are required to submit a **monthly Comprehensive Material Recovery Report (MRR)** of the recyclable waste materials being processed by their facility to the Waste Treatment Section (WTS) every second (2) day of every month as per Circular No. (1) of 2020 On the Comprehensive Inventory of the Recyclable Waste Data in the Emirate of Dubai.
8. **Disposal fees are set by the facility operator.**
9. Samples of permits for the disposal of unwanted materials to DM-accredited recyclers can be found in Annex 3.

5 OPERATORS OF PRODUCTION OF WASTE-DERIVED FUEL FACILITIES PROVISIONS

The following provisions apply to companies with a valid license for 3821002-Production of Waste-Derived Fuel activity from DET or any third party engaged through a formal contract and who have attained prior authorization requests

¹ Note: The applicant must add the remark that they undertake that only the above declared wastes will be sent for recycling and that together with the recycler they will be jointly responsible for the safe handling, recycling, and final disposal of any waste by-product.

on behalf of the contracting party from the WSPD. The decision to accept or reject applications of a similar nature is at the sole discretion of the WSPD. All facilities must comply with the **Post Environmental Clearance (EC) Compliance Monitoring and Reporting** which involves both Regulatory Monitoring (i.e. primarily site inspection of the facility performed by the DM-Environmental Sustainability department) and as applicable, self-monitoring in the form of Emissions Inventory reporting or submission. Facilities with emission sources are required to submit source descriptions, activity data and pollutant concentrations via the interactive online platform (<http://www.dubaiairenvironment.dm.gov.ae/>), in accordance with the compliance conditions of the EC. A user account to access the **online platform should be requested by contacting DM- Environment Sustainability and Environmental Assessment Section (AESEAS) via Emission_Inventory@dm.gov.ae**.

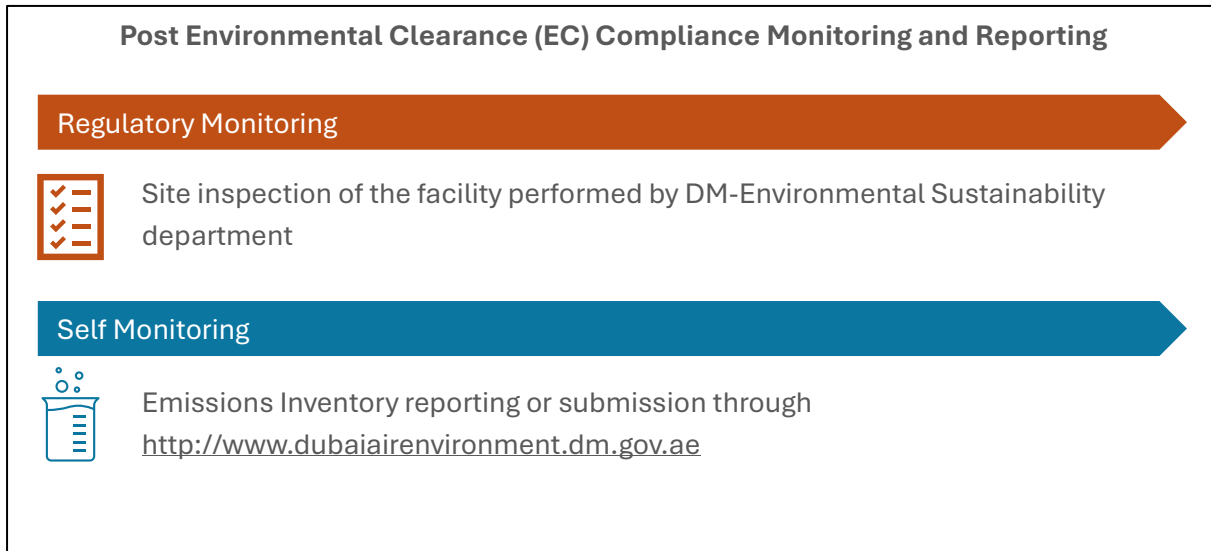


Figure 1 Post EC Compliance Monitoring and Reporting

Moreover, facilities must ensure that any appointed laboratory involved in the monitoring is accredited by EIAC², for the specific tests. In Addition, WSPD requires a 3rd party audit annually: waste audit, environmental audit and safety audit.

In alignment with the WDS procedures, and as mentioned previously in section 4, all DM Accredited Recyclers are required to submit a monthly comprehensive MRR of the recyclable waste materials being processed by their facility to the WTS every second (2) day of every month as per Circular No. (1) of 2020 On the Comprehensive Inventory of the Recyclable Waste Data in the Emirate of Dubai.

² List of Accredited Laboratories: <https://eiac.gov.ae/directory>

6 PRODUCTION OF WASTE-DERIVED FUEL

6.1 General Provisions

During the operation of a WDF production facility, it is imperative to ensure that the following key points are adhered to. Please also refer to the [Technical Guideline on Waste Plastic Trading Activity](#) for further requirements.

6.1.1 Waste Receipt, Unloading, Processing, and Storage

- As mentioned previously in section 4, WDF production facility operators must set specific **Waste Acceptance Criteria** which must be shared beforehand with the waste generator. This acceptance criteria shall include, as applicable, tests of the incoming waste and documentation of the waste source (e.g., the processes producing the waste, including the variability of the process) and identifying the appropriate treatment/disposal.
- The specifications and classes for defining the quality of WDF are determined by the appropriate quality standard. The 'quality' of a fuel can be defined by a number of variables. Key parameters include:
 - calorific value (CV);
 - moisture content;
 - ash content;
 - levels of undesirable material contamination;
 - physical properties; and
 - chemical properties.

These parameters are required by the Energy from Waste (EfW) operators to define the minimum quality of WDF that can be accepted within their process. The parameters required for defining the quality of WDF and the limit value of each parameter for their particular application will vary according to the operating parameters of the end user of the fuel.

- Environmental attributes: characteristics that will influence emissions to the environment:
 - Mercury (Hg);
 - Cadmium (Cd); and
 - other heavy metals
- Visually evaluate, weigh, and document incoming waste loads;
- Maintain records of the total quantity of used WDF waste received and processed. These records must be available for inspection.

- Proper weighing scales must be available at the facility, and calibration certificates must be maintained for inspection.
- If bulk transport is used, maintain suitable weighbridge receipts for all inward and outward movements.
- The facility should be equipped with an ANPR (Automatic Number Plate Recognition) system connected to Dubai Municipality.
- The facility should have CCTV cameras installed.
- Storage should have a well-constructed, tight roof to protect stored materials from the elements, such as rain, and UV radiation. This protection prevents water from accumulating, which can lead to the degradation of the stored materials and create issues such as mold growth and vector breeding. Additionally, this measure helps maintain the calorific value of the RDF by preventing moisture accumulation, which could otherwise affect the fuel's quality and energy content.
- For WDF production facilities, mechanical treatment methods are most commonly applied to municipal, commercial, and non-hazardous industrial waste streams to make a Refuse-Derived Fuel (RDF).
- Shredder maintenance (and the sequencing of the maintenance) is therefore key to reaching high-level efficiency. The protection of shredders using prescreening improves the efficiency of the shredding line and reduces maintenance costs by removing large pieces and metallic parts that are present in the waste streams and cannot be shredded.
- Reject or, if the facility is equipped to process the waste, segregate potentially hazardous materials or wastes identified, and manage as hazardous, as applicable;
- Analyze suspected hazardous materials before acceptance so that they are segregated relative to compatibility and so that they can be adequately treated and disposed of;
- If mixed fractions are received, separate recyclable materials, such as high-calorific-value plastics and paper, from other waste materials (such as metals and non-combustible fractions) for alternative recycling methods. This ensures that only suitable materials are used in the RDF production process, enhancing the efficiency and quality of the fuel;
- Provide adequate storage for waste not immediately treated or disposed of;
- Implement good housekeeping procedures;
- Ensure adequate training on the Health, Safety and Environment (HSE) of the staff according to their activities and responsibility levels;

6.1.2 Air Emissions

The following measures are recommended to prevent, minimize, and control vehicle emissions and emissions of dust and odors during waste receipt, unloading, processing, and storage:

- Design drop-off points to minimize queuing of vehicles;
- Sweep waste management areas and roads frequently and use dust prevention systems including water sprays for dust suppression, dust extraction/suppression during crushing/screening and storage etc.
- Use extraction system to remove dust from working areas, buildings, and storage vessels, and treat as needed to control particulate emissions (e.g., bag filter);
- Use odour-neutralising sprays where necessary;
- Provide respiratory protection equipment to the personnel who require it according to their tasks;

6.1.3 Noise and Vibration

- Construct a buffer zone between the facility and the external environment or locate facilities away from sensitive receptors;
- Maintain site roads in good condition to reduce noise and vibration from vehicle movements;
- Use acoustic screens around fixed/mobile plant and equipment;
- Select equipment that has low noise emission levels;
- Fit silencing equipment to plant, e.g. baffles/mufflers;
- Use buildings to contain inherently noisy fixed plant equipment and consider the use of sound-insulating materials in construction.

6.1.4 Fire Safety

Advised measures for preventing and controlling fires include:

- Limit Storage Quantities: WDF materials, especially those with high calorific value like plastics and certain fibers, should not be stored in large quantities to minimize the risk of fire spread and intensity.
- The roof of the storage should be constructed from fire-resistant materials to help mitigate the risk of fire spreading in case of an incident.

- Facilities should be equipped with fire detection systems such as smoke detectors and thermal cameras. Fire suppression systems, including sprinklers, foam systems, or dry chemical extinguishers, should be strategically placed throughout the facility.
- Maintain controlled environmental conditions to reduce the risk of fire and deterioration. Indoor storage areas should be well-ventilated and free of ignition sources.
- Develop and maintain a detailed emergency response plan, conduct regular fire drills, and ensure that all personnel are trained in fire safety protocols. Emergency access routes should always be kept clear for first responders.

7 OCCUPATIONAL HEALTH AND SAFETY

The most significant occupational health and safety impacts typically associated with workers at C&D waste management facilities occurring during operations include:

7.1.1 Accidents and injuries

- Workers are especially susceptible to accidents involving trucks and other moving equipment. Recommended measures include the implementation of traffic management systems and the presence of traffic controllers;
- Accidents may involve slides from unstable disposal piles, cave-ins of disposal site surfaces, fires, explosions, being caught in processing equipment, and being run over by mobile equipment;
- Other potential injuries include those resulting from heavy lifting & exposure to potentially contaminated substances (i.e. fuel and foul sewage);
- Risk assessments of hazards should be conducted with common risks at WDF production facilities, including manual handling; slips, trips, and falls; being hit by moving, flying, or falling objects; and contact with moving machinery. Each risk assessment should identify the hazards, decide who might be harmed and how, evaluate the risks, decide on precautions and control measures (i.e. suitable training, regular housekeeping, and PPE), and implement the findings. The risk assessment should be reviewed and updated as necessary.

7.1.2 Chemical exposure

- Smoke and dust can lead to injuries affecting the eyes, ears, and respiratory systems;
- Provide workers with appropriate protective clothing, gloves, respiratory face masks, slip-resistant shoes for waste transport workers and hard-soled safety shoes for all workers to avoid puncture wounds to the feet. For workers near loud equipment, noise protection should be included. For workers near heavy mobile equipment, buckets, cranes, and at the discharge location for collection trucks, include provision of hard hats;

- Provide adequate personnel facilities, including washing areas and areas to change clothes before and after work, as well as praying rooms;
- Ventilate enclosed processing areas (e.g., dust in waste size reduction areas, etc);
- The site should be a designated 'no eating /drinking & smoking area.

To mitigate those risks, it is also necessary to develop a Hazard Management Plan (HMP) in line with the UAE Occupational Health and Safety Management System (OHSMS) (where applicable) to minimize the risk of injury from such hazards. Moreover, contingency plans in the event of equipment failure & Emergency procedures plan need to be considered. Fire safety requirements are also crucial, such as installing a ceiling sprinkler system alarm and fire hoses, which should be in place on-site. This equipment should be clearly marked and tested at appropriate intervals to confirm integrity. Site personnel should be made aware of their location, trained in their correct use, and know when it is safe to use them. Further Environmental impacts and mitigation measures are discussed in Annex 4.

8 REFERENCES

European Waste Framework Directive 2008/98/EC

UNEP. 2000a. Secretariat of the Basel Convention. Technical Guidelines on Hazardous Wastes: Physico-Chemical Treatment/Biological Treatment. Basel Convention series/SBC No. 02/09. Geneva: UNEP.

International Finance Corporation. (1998). Environmental, Health and Safety Guidelines for Waste Management Facilities. Retrieved from <https://www.ifc.org/content/dam/ifc/doc/1990/waste-mgmt.pdf>

International Finance Corporation. (2007). Environmental, Health, and Safety Guidelines for Waste Management Facilities. World Bank Group. Retrieved from <https://www.ifc.org/content/dam/ifc/doc/1990/waste-mgmt.pdf>

Basel Convention. (1994). The Framework Document 1994 on the preparation of technical guidelines for the environmentally sound management of wastes subject to the Basel Convention. Retrieved from <https://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/TechnicalGuidelines/tabid/8025/Default.aspx>

Environmental Protection Agency. (1995, April). EPA's Environmental Justice Strategy: Implementing EO 12898.

ANNEX 1: REQUEST FOR PERMIT OF WASTES DISPOSAL

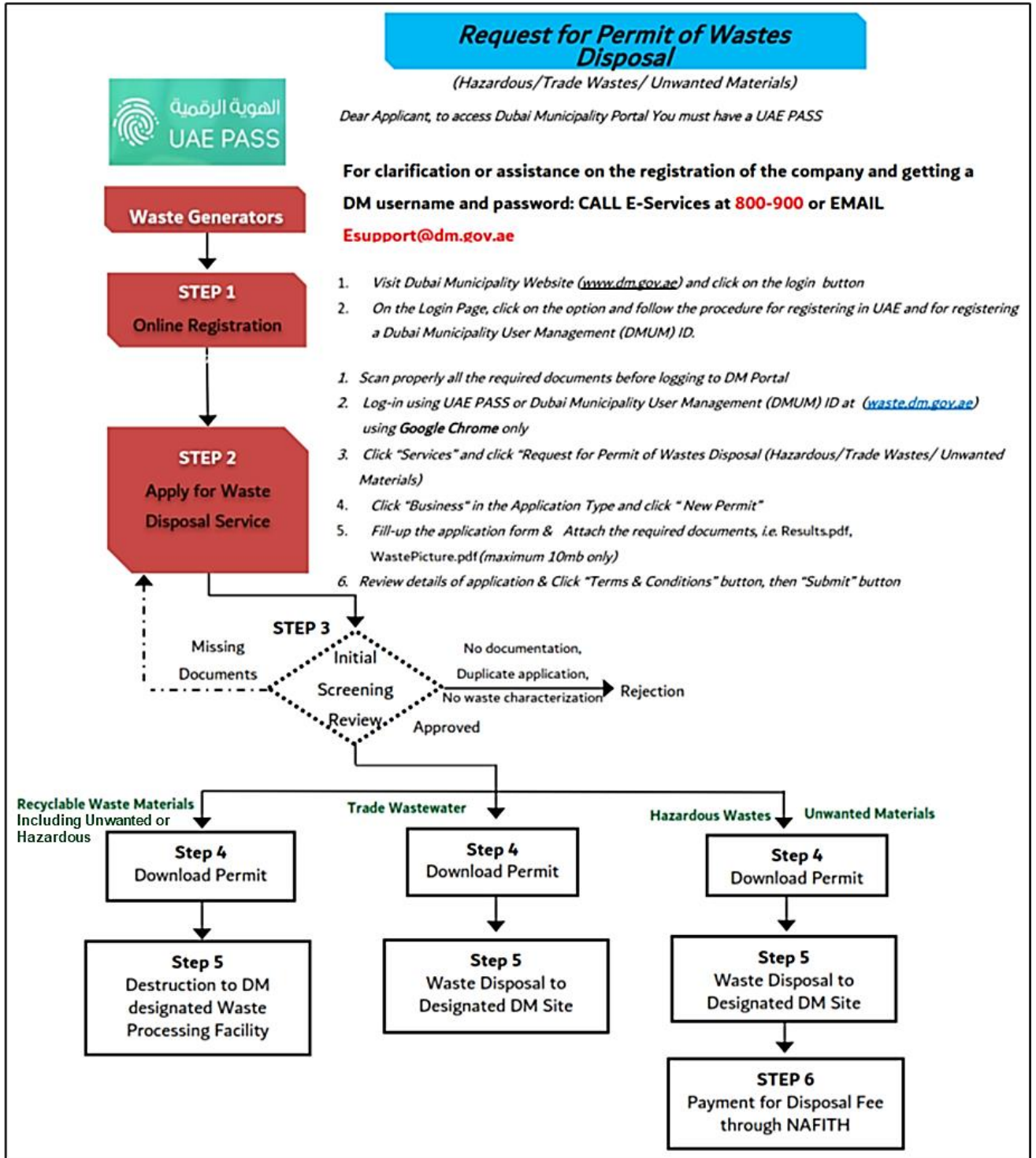


Figure 2 Online registration & request for permit of waste disposal procedures

ANNEX 2: APPLICATION FORM FOR WASTE PROCESSING/RECYCLING

Table 1 Application Form for Permit/NOC for Waste Processing/Recycling

APPLICATION FORM FOR PERMIT/NOC FOR WASTE PROCESSING/RECYCLING			
COMPANY DETAILS			
Waste Generator	(Company name)		
License No.		P.O. Box	
Contact Person		Designation	
Contact Info	Telephone & Mobile	Email	
WASTE DETAILS			
Waste Description			
Source/Process			
Waste Location (Address of Company)			
Packaging Details/ Number of Packages			
Total Weight (tons)			
<small>*The company and wastes details shall be the same in the online Waste Disposal Service request</small>			
RECYCLER DETAILS			
Company Name		License No.	
Address of Recycling Facility			
Contact Info	Telephone & Mobile	Email	
Recycler Reference No.			
ACKNOWLEDGEMENT OF RESPONSIBILITY			
We hereby acknowledge that any misdeclaration, and/or breach of conditions hereof or of applicable environment protection regulations will warrant sanctions or fine as deemed appropriate.			
For RECYCLING Company:		For Waste Generator (Company Name)	
<p>I acknowledge that the declared material applied and on the photos attached for recycling in our facility will not cause any form of pollution either on ground, water or environment during the processing of the wastes.</p> <p>I acknowledge that it is our responsibility to ensure that the material received will be fully destructed and unusable from its original form and will not be distributed in the market.</p> <p>A monthly material recovery report (MRR) will be submitted to Waste Treatment Section (WTS) for processing of waste.</p>		<p>I acknowledge that the wastes stated above was generated by us and is factually described by this application. I hereby certify that the named materials are properly classified, described, packaged, marked and labelled and are in proper condition for transportation.</p> <p>I hereby guarantee that the waste will be delivered to the Dubai Municipality Approved Recycler without loss or alteration.</p>	
(name) (designation)		(company stamp & signature & date)	
(company stamp & signature & date)		(company stamp & signature & date)	

ANNEX 3: SAMPLE UNWANTED MATERIALS DISPOSAL PERMIT

Table 2 Sample Permit for Disposal of Unwanted Materials to DM Accredited Recycler

Waste Operations Department		إدارة عمليات النفايات
Waste Treatment Section		قسم معالجة النفايات
تصريح التخلص من المواد غير المرغوب فيها Permit for Disposal /Destruction of Unwanted Materials		
Ref No	WDS-240424-44327	Date 25/04/2024
Application Details		بيانات التصريح
Company Name	:	اسم الشركة
License No.	503092	رقم الرخصة
Mobile No.	(+971)	رقم الهاتف المحمول
Email	@gmail.com	البريد الإلكتروني
Waste Details		تفاصيل النفايات
Waste Description	Wheat And Products /wheat flour	وصف النفايات
Source/Process	Import Shipment	المصدر / العملية
Waste Location	531 - DIC -SAIH SHUAIB 2	موقع النفايات
Package Type	Palette	نوع الحزمة
Qty per package	880	
Total Weight (Metric Tons)	22	الوزن الإجمالي (طن متري)
Applicant Remarks	We undertake that only the above declared wastes will be sent for recycling. We and the recycler will be jointly responsible for the safe handling, recycling and final disposal of any waste by-product.	ملاحظات مقدم الطلب
Approval Details		تفاصيل الموافقة
Classification	For Recycling - Food Material Unfit for Consumption	التصنيف
Disposal Location	Al Maha Organic Fertilizer Industries & Recycling LLC (Dubai Industrial City):	موقع التخلص
Remarks	Any misdeclaration of this WDS application will render this permit invalid and shall warrant sanctions or fine as deemed appropriate. Your COMPANY must WITNESS the destruction of materials to ensure that it will not be returned to the MARKET. NOTE: For any Destruction Certificate request please submit recycling certificate by uploading on the WDS system, Click request disposal certificate in the request type, then WDS ref no from the dropdown list, then click get details. This PERMIT is not a substitute to other regulatory permits, and its issuance does not exempt YOUR COMPANY from securing other government approvals, and preclude other agencies/departments from enforcing their rules and	ملاحظات
This document is electronically approved without a signature. To verify the authenticity of this document please visit https://waste.dm.gov.ae/Admin/DocumentVerification/VerifyDocu.html and enter the Document ID : WDS-240424-44327 and Verification Code : 757756 , or alternatively scan the QR Code		هذه الوثيقة معتمدة إلكترونياً بدون توقيع، و للتحقق من صحتها يمكن زيارة الرابط أدناه https://waste.dm.gov.ae/Admin/DocumentVerification/VerifyDocu.html بإدخال رقم الطلب WDS-240424-44327 و رمز التأكيد 757756 أو مسح QR Code المصادق

ANNEX 4: ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Table 3 Environmental Factors and Mitigation Measures

Particulate Matter (PM)	Odour
<ul style="list-style-type: none"> • Paving roads on site. • A bowser is used to spray water onto haul roads and waste storage and processing areas during dry and dusty conditions. • Utilize wheel-washes on incoming and outgoing vehicles. • Align building openings to minimize exposure to prevailing winds. • Install plastic curtains or roller shutter doors over building openings. • Keep station doors closed during operating hours, except when trucks are entering or exiting. • Install misting systems over tipping areas to “knock down” dust particles. • Implement speed limit restrictions on site haul roads. • Cover loads of waste that have the potential to emit significant dust during transport. • Undertake dust monitoring at specified locations on and off-site, if applicable. • Provide all site staff with PPE, including high-visibility clothing, FFP3 masks, and safety glasses. 	<ul style="list-style-type: none"> • Enclose or cover loads of waste. • Refuse to accept certain highly odorous wastes. • Remove any other odorous waste from the premises as soon as practicable. • Increase the distance between the odor source and the receptor. • Practice “first-in, first-out” waste handling practices. • Regularly inspect and monitor waste handling areas. • Frequently clean/wash down waste handling areas. • Install ventilation systems with air filters or scrubbers. • Plant vegetative barriers, such as trees, to absorb and disperse odors. • Install plastic curtains or roller shutter doors on entrances and exits to contain odors when doors are opened to allow vehicles to enter or exit.
Water and Soil Pollution	Noise and Vibration
<ul style="list-style-type: none"> • Locate plants outside local flood zones, if applicable. • Cover the waste - use rain-tight and leak-tight HGVs and containers. • Keep surface water free of run-off contamination from waste, mud, and fuel/oil. • Implement impervious surfaces (i.e. paved surfaces) and engineered drainage systems. Ensure that there are sealed systems in place for potentially contaminated leachate from stored waste so that it is collected separately from surface water. • Use secondary containment around temporary storage areas, i.e. fuel. • Collect soil samples on-site and within immediate locations to establish baseline conditions. • Monitor the composition of the surface water (e.g. sampling at agreed locations, upstream/downstream of the site, on a monthly/quarterly basis). • Monitor the flow and composition of foul water/sewer discharge. • Undertake site walkover (including nearby surface water courses) at agreed intervals. • Provide all site staff with PPE, including steel-tipped boots and gloves. 	<ul style="list-style-type: none"> • Select quiet working equipment. • Shut down equipment when not in use. • Set a site speed limit of 15km per hour (or appropriate to site conditions and surroundings). • Enclose all waste-handling operations. • Concrete walls and structures should be used, which absorb sound better than metal structures. • Install shielding or barriers, such as trees, berms, or walls, around the facility to block and absorb noise. • Insulate building walls with sound-absorbing materials. • Locate administrative buildings between sources of noise and the community. • Locate sorting plant building openings (i.e. doors) away from receptors. • Keep doors closed during operating hours, except when vehicles are entering or exiting. • Establish operating hours that avoid early morning or late-night operations. • Set facility noise level limits and adhere to them.

	<ul style="list-style-type: none"> Record incidents of noise or vibration that exceed these limits – these should be diarized so that potential causes can be identified, and procedures put in place to eliminate them. Provide all site staff with PPE, including noise-dampening earplugs/muffs.
Litter	Traffic
<ul style="list-style-type: none"> Covering all incoming and outgoing loads. Implementing daily litter inspections and pick-ups at the facility and on surrounding streets. A perimeter fence must be installed to prevent windblown litter from leaving the site. 	<ul style="list-style-type: none"> Create a robust and formal transport management plan. Design internal and external roads to include highly visible markings, barriers, and signs (i.e. speed restrictions, traffic flow and separation areas between vehicles and pedestrian movements). Drivers should be appropriately trained and licensed. Create acceleration, deceleration, or turning lanes at site entrances and exits (where applicable) to maintain steady traffic flows around the facility. Work with the community to designate inbound and outbound Heavy Goods Vehicles (HGV) traffic routes and ensure that drivers follow these routes. Avoid traffic flows adjacent to noise-sensitive property. Restrict incoming HGV queueing on public streets, i.e., if inadequate space is available on site to accommodate waiting HGVs, use a remote site as a waiting area for HGVs. Where possible, schedule incoming traffic so that it does not coincide with local rush hours. Regularly maintain and service vehicles to ensure they are running as efficiently as possible. Switch off vehicles when not in use (both on-site and visiting vehicles). Provide all site staff with PPE, including high-visibility clothing and steel-tipped boots.

Flies, Vermin and Birds	Exposure to Potentially Hazardous Equipment and Substances
<ul style="list-style-type: none"> • Hiring a professional licensed pest control company with expertise and experience in controlling specific vermin populations. • Seal or screen openings that allow rodents and insects to enter the building, such as door and window frames, vents, and masonry cracks. • Implement practices that reduce the likeliness of attracting vermin. • Provide and require the use of suitable personal protective clothing and equipment. • Maintain good housekeeping in waste processing and storage areas. • Grade the area properly to prevent ponding (to minimize insect breeding areas); • Use integrated pest-control approaches to control vermin levels, treating infested areas, such as exposed faces and flanks with insecticide, if necessary 	<ul style="list-style-type: none"> • Supplying site staff with all necessary PPE. • Displaying brightly colored warning signs around equipment and machinery. • Regularly maintain and monitor equipment and machinery. • Implemented emergency shutdown mechanisms on equipment and machinery. • Keep all areas clean and tidy. • Check bunds and tanks for leaks. • Check the provision of oil spillage kits and absorbent materials. • Ensure tanks and containers are secured against unauthorized access. • Provide continuous staff training. • Make emergency phone numbers visible and accessible. • Provide worker immunization and health monitoring (e.g. for Hepatitis B and tetanus); • Clean and wash with disinfectant the cabins of heavy mobile equipment used at regular intervals;