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20001

Nine Mile Point Waste Processing Facility

Environmental Management System

V03

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Report

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1 Introduction

This document outlines the Environmental Management System for the proposed Waste Processing Facility at Nine Mile Point.

The Operator of the Facility will be Drumcastle Ltd, hereby referred to as “the Operator”

Drumcastle Limited have developed and will implement their own management system taking into account the relevant legal requirements, quality and safety standards and environmental elements that the facility needs to identify and comply with in order to carry out safe and environmentally sound operations. The EMS will be reviewed regularly by senior management to ensure its continuing suitability, adequacy, and effectiveness.

Drumcastle Limited understand the importance within the planning process in gaining Top Level Management commitment to support EMS development and implementation. The operator shall manage and operate the activities using sufficient competent persons and resources for the handling and transfer of waste.

1.1 BAT Compliance

In accordance with EPR the installation will demonstrate BAT throughout every stage of the process.

Table 1.1 BAT Compliance

BAT Reference		Compliance	Evidence/Justification
BAT 1	i	Yes	Section 1
	ii	Yes	The Environmental Management Plan implemented by Drumcastle Limited will ensure the continuous improvement of the environmental performance of the installation.
	iii	Yes	Drumcastle Limited when making investment and/or financial decisions affecting the performance of the facility will ensure that all decisions are in continued compliance with the Environmental permit regarding the necessary procedures, objectives, and targets.
	IV	Yes	The Environmental Management System outlines the operational procedures to be implemented onsite, paying attention to (a) structure and responsibility, (b) recruitment, training, awareness, and competence, (c) communication, (d) employee involvement, (e) documentation, (f) effective process control, (g) maintenance programmes, (h) emergency

			preparedness and response, (i) safeguarding compliance with environmental legislation.
	V	Yes	(a) Measures regarding the monitoring of emissions to air and water are outlined in Section 5.3. (b) The preventative procedures as outlined within the Environmental Management system will be implemented on site. (c) Measures regarding the maintenance of records are outlined in Section 7 (d) As part of the sites Environment Management System, audits will be carried out on an annual basis to check that all activities are being carried out in line with the requirements of the Environmental Permit, Management Procedures, and associated legislation.
	VI	Yes	The EMS will be review regularly by senior management to ensure its continuing suitability, adequacy, and effectiveness.
	VII	Yes	The removal of the gas burners and RTO means that there will no longer be any combustion emissions to air associated with the facility, therefore providing a cleaner process, and following the development of cleaner technologies.
	VIII	Yes	Consideration for the environmental impacts from eventual decommissioning of the plant is outline in Section 10 regarding closure and decommissioning.
	IX	Yes	Drumcastle Limited operate a comparable facility in South England, therefore, energy use on this site will be benchmarked regularly.
	X	Yes	Adequate waste stream management is shown through compliance with BAT 2.
	XI	NA	The waste sourced will be dry in nature to ensure the quality on the SRF produced. Waste will then undergo mechanical processing to produce SRF and separate recyclable materials. Therefore, no effluent will be produced during this dry process. No wastewater or waste gas streams will be produced from this facility.
	XII	Yes	See Residues Management Plan
	XIII	Yes	See Accident Management Plan
	XIV	Yes	See Odour Management Plan
	XV	Yes	See Noise and Vibration Management Plan
BAT 2	a	Yes	The implementation of pre-acceptance procedures is outlined in Section 4.1

	b	Yes	The implementation of waste acceptance procedures is outlined in Section 4.2
	c	Yes	The implementation of a waste tracking system is noted in Section 1.9.2
	d	Yes	The implementation of an output quality management system is noted in Section 4.7 stating all products, wastes and recovered materials that are dispatched from the installation will be inspected prior to dispatch to confirm their description and composition. Waste dispatched from the site will only be sent via appropriately licensed waste carriers to appropriately licensed or approved end markets. All materials dispatched will meet the specification of the receiving facility.
	e	Yes	Measures regarding the segregation of wastes are noted in Section 4.2
	f	Yes	The compatibility of waste prior to mixing or blending will be ensured through detailed inspection procedures as outlined in Section 4.2. Any dangerous items will be removed from the waste input stream during visual inspection by suitable mobile plant and will be transferred to the quarantine area located in the reception building prior to removal offsite.
	g	Yes	Measures regarding the sorting of incoming solid waste in the prevention of unwanted materials entering the waste treatment process are outlined in Section 4.5.
BAT 3		NA	The waste sourced will be dry in nature to ensure the quality on the SRF produced. Waste will then undergo mechanical processing to produce SRF and to separate recyclable materials. Therefore, no effluent will be produced during this dry process. Surface water will then be released to the existing surface water drainage system on the industrial estate. All surface water run-off will pass through silt traps and full retention interceptors. These will be inspected on a regular basis to check their integrity and be maintained to prevent overfilling.
BAT 4	a	Yes	The nearest residential properties are on New Road, approximately 470m northeast of the eastern edge of the site boundary and William Street, approximately 478m west of the western edge of the site. The Facility is bounded by an industrial unit and car park to the east, roads to the south and west and woodland to the north.

			All activities are carried out within the main reception building including tipping and storage of incoming waste, and storage of recyclable and reject materials with the exception of storage of baled recyclable materials which will be stored externally.
	b	Yes	Measures to avoid the accumulation of wastes are outlined in Section 1.9.5. Maximum waste storage capacities are clearly established and will not be exceeded. Waste deliveries will be prohibited from entering the site if the reception area is found to be at full capacity and there is insufficient space for storage of waste or incoming vehicles on site. The facility shall use the 'first-in', 'first-out' waste handling practices, reducing as far as possible the residency time of materials on site.
	c	Yes	Measures regarding storage operations are outlined in Section 1.9.5 with note of the documentation and labelling of mobile plant in Section 1.12 and measures regarding fuel storage outlined in Section 1.13
	d	Yes	A separate area for the storage and handling of non-conforming hazardous waste will be located within the reception area as noted in Section 2.4
BAT 5		Yes	Handling and transfer procedures are outline in this EMS and a detailed account of waste handling and transfer procedures are outlined in the Operational Techniques and Management Plan. Section 1 notes to the use of competent staff and Section 4.11 outlines measures in place to prevent, detect, and mitigate spills.
BAT 6		NA	The non-hazardous waste sourced will be dry in nature to ensure the quality on the SRF produced. Waste will then undergo mechanical processing to produce SRF and to separate recyclable materials. Therefore, no effluent will be produced during this dry process and no emissions to water will be released. Surface water from the external areas of site will drain to storage crates for attenuation. Surface water will then be released to the existing surface water drainage system on the industrial estate. All surface water run-off will pass through silt traps and full retention interceptors. These will be inspected on a regular basis to check their integrity and be maintained to prevent overflowing.
BAT 7		Yes	Emissions monitoring for water is outlined in Table 5.3
BAT 8		Yes	Emissions monitoring for air is outlined in Table 5.2

BAT 9		NA	No diffuse emissions of organic compounds will be released to the air from this facility. Waste will then undergo mechanical processing to produce SRF and separate recyclable materials.
BAT 10		Yes	Monitoring of odour emissions is outlined in Table 5.2
BAT 11		NA	Water is not used as part of the processing of incoming waste. Meter readings will be monitored for water records. For fuel and electricity consumption, monitoring will be carried out via invoices. Annual electricity and diesel usage will be related to tonnes processed.
BAT 12		Yes	See Odour Management Plan which will be implemented onsite and regularly reviewed as part of the Environmental Management System.
BAT 13	a	Yes	Minimising of residence times will be conducted through the 'first in' – 'first – out' principle noted in Section 6.3.
	b	NA	The non-hazardous waste sourced will be dry in nature to ensure the quality on the SRF produced. Waste will then undergo mechanical processing only to produce SRF and to separate recyclable materials. Therefore, no organic compounds will be produced during this dry process.
	c	NA	Waste will only undergo mechanical processing to produce SRF and to separate recyclable materials.
BAT 14	a	Yes	Measures to reduce the number of potential diffuse emission sources including the limiting of traffic speed onsite are noted Section 6.1
	b	Yes	All motors used in the plant will be high efficiency. All motors will have soft shared to limit the electrical power draw on start up. All plant and equipment selected has been selected due to it being the highest power efficiency model as it is critically important to reduce overheads in the form of electricity and fuel costs.
	c	N/A	This is a mechanical process. This process does not include the use of water or other liquids for processing the waste. All plant and equipment will be serviced and maintained in accordance with the manufacturer's recommendations. All construction materials have been selected for the use inside a mechanical waste treatment facility.
	d	Yes	Regarding the containment, collection, and treatment of diffuse emissions, it is noted in Section 6.3 how all activities are carried out within the main reception building, which is kept

			under negative pressure to prevent fugitive emissions of odorous air from the buildings. The waste reception building will be fitted with fast acting roller shutter doors. Before release to air via a stack the gas will be treated firstly to remove dust via dust filters then via carbon filters to remove odours.
	e	Yes	Regarding the dampening potential sources of diffuse dust emissions, as noted in Table 6.1, all departing road transport will be inspected for cleanliness, prior to leaving the site and paved roads will be swept and washed regularly as determined by Site Manager inspections.
	f	Yes	Maintenance measures are outlined in Section 2.3 and note that as part of the daily checks the Shift Supervisor or other relevant persons will undertake checks to ensure that the integrity of the reception building structure, door operation etc. has not been compromised, the results will then be recorded in the site diary. Section 4.11 outlining the spillage procedure on site notes that clear access will be provided to potentially leaking equipment.
	g	Yes	High standards of housekeeping will be implemented as part of the general site management of the Facility and are noted in the Environment Management System which will minimise the occurrence of fugitive odours from the day to day activities. Section 6 notes how regular cleaning of the site will occur to prevent build-up of odorous materials or dust and to clean up spillages of odorous or potentially odorous material.
	h	NA	No emissions of organic compounds will be released to the air from this facility. All waste material on site will be stored and processed on an impermeable surface so as to prevent ingress of spills or leakages into underlying soils and groundwater and also to divert liquids to appropriate drainage points. All site personnel will be tasked with monitoring for evidence of spills and debris during their day to day routine. Any evidence of spills and debris will be reported to the Site Manager or his nominated deputy for remedial action.
BAT 15		NA	Flaring will not occur at this facility. Wastes will undergo mechanical processing to produce SRF and to separate recyclable materials.
BAT 16		NA	
BAT 17		Yes	See Noise and Vibration Management Plan
BAT 18	a	Yes	The nearest residential properties are on New Road, approximately 470m northeast of the eastern edge of the site

			boundary and William Street, approximately 478m west of the western edge of the site. The Facility is bounded by an industrial unit and car park to the east, roads to the south and west and woodland to the north. All noise generating equipment will be located within the main process building.
	b	Yes	Control measures to reduce noise and vibration emissions are outlined in Section 6.4.
	c		All noise generating equipment will be located within the main process building or within specifically designed acoustic enclosures to reduce noise and vibration emissions.
	d	Yes	All noise generating equipment will be located within the main process building or within specifically designed acoustic enclosures.
	e	Yes	The process building will have high grade cladding with a dense insulated core. In high activity areas the lower walls of the building will be reinforced concrete which will further reduce the potential for noise emissions. Section 6.4 outlines the control measures for reducing noise and vibration emissions from the site.
BAT 19	a	NA	Water is not used as part of the processing of incoming waste.
	b	NA	Meter readings will be monitored for water records.
	c	Yes	Regarding impermeable surfacing, Section 2.2 notes that the whole site will be located on an impermeable hardstanding. All waste material on site will be stored and processed on an impermeable surface.
	d	Yes	Regarding measures to reduce the likelihood and impact of overflows and failures from tanks and vessels, all areas on site that have the potential for contaminated run-off will be sealed and serviced with a secondary containment system. This is noted in section 4.11.
	e	Yes	Regarding the roofing of waste storage and treatment areas, Section 1.9.5 outlines that all activities will take place within the main reception building including tipping and storage of incoming waste, and storage of recyclable and reject materials with the exception of storage of baled recyclable materials which will be stored externally. When required, baled, and wrapped SRF/RDF may be stored externally on an impermeable surface. RDF/SRF bales will be wrapped 5 times and regular inspections will be carried out to identify damaged bales.

	f	Yes	Regarding the segregation of uncontaminated wastewater streams and wastewater streams needing treatment, clean roof water and surface water from the external areas of site will drain to storage crates for attenuation. Surface water will then be released to the existing surface water drainage system on the industrial estate. All surface water run-off will pass through silt traps and full retention interceptors. Foul drainage from the office and welfare facilities onsite will be discharged via sewer. There is no effluent discharge from the mechanical processing of waste.
	g	Yes	Adequate drainage infrastructure will be implemented on site and is outlined in Section 2.1
	h	Yes	Regarding design and maintenance provisions to allow the detection and repair of leaks, Section 4.11 outlines the spillage procedure to be implemented on site. All plant, equipment, and drainage networks will be subject to regular inspection and maintenance.
	i	N/A	There is no wastewater generated from the mechanical processing of waste. It is a dry process to create a dry solid recovered fuel.
BAT 20		NA	No wastewater will be received onsite for treatment. Incoming wastes will be dry in nature and will undergo mechanical treatment only to produce SRF and to separate recyclable materials. There will be one point source emissions to water, clean surface water and roof drainage via the existing surface water drain. There will be no process effluent generated as part of the process. Surface water from the external areas of site will drain to storage crates for attenuation. Surface water will then be released to the existing surface water drainage system on the industrial estate. All surface water run-off will pass through full retention separators. These will be inspected on a regular basis to check their integrity and be maintained to prevent overfilling.
BAT 21	a	Yes	See Accident Management Plan
	b		
	c		
BAT 22		NA	Incoming waste will be dry in nature and will undergo mechanical processing to produce SRF and to separate recyclable materials.

BAT 23	a	Yes	See Energy Efficiency Plan
	b		
BAT 24		NA	Incoming waste will be dry in nature and will undergo mechanical processing to produce SRF and to separate recyclable materials.
BAT 25		Yes	To reduce emissions to air of dust from the facility, compliance is shown with BAT 14 (d). Cyclones and fabric filters will also be used on site. Measures regarding the control of dust emissions are outlined in Section 6.1.
BAT 26	a	Yes	To prevent emissions due to accidents and incidents, compliance is shown with BAT 14 (g). Baled wastes will not be accepted onsite, therefore detailed inspection is not required. All incoming wastes will undergo inspection as outlined in section 4.2.
	b	Yes	Any dangerous items will be removed from the waste input stream during visual inspection by suitable mobile plant and will be transferred to the quarantine area located in the reception building prior to removal offsite.
	c	NA	Containers will not be treated at this facility therefore declaration of cleanliness is not required.
BAT 27		NA	Deflagrations will not occur at this facility. Incoming waste will be dry in nature and will undergo mechanical processing to produce SRF for export offsite and to separate recyclable materials. A pre-shredder will be located at the beginning of the mechanical processing of waste.
BAT 28		Yes	To ensure energy efficiency, the shredder feed will be kept stable.
Remaining BAT		NA	The non-hazardous waste sourced will be dry in nature to ensure the quality on the SRF produced. Waste will then undergo mechanical processing only to produce SRF and to separate recyclable materials. Therefore, no effluent will be produced during this dry process.

1.2 Scope of Management Plan

This Management System has been prepared in a number of sections and in a form that will enable periodic modifications to reflect changes in legislation, alterations to operational practice and revisions, as necessary, imposed by Natural Resources Wales.

The operator shall manage and operate the activities in accordance with the Environmental Management system which identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure, and those drawn to the attention of the operator as a result of complaints.

As part of the sites Environment Management System, audits will be carried out on an annual basis to check that all activities are being carried out in line with the requirements of the Environmental Permit, Management Procedures, and associated legislation.

1.3 Site Location and Setting

The Facility is located at:
Nine Mile Point Industrial Estate,
Ynysddu,
Cwmfelinfach,
Caerphilly,
NP11 7HZ

The site boundary is illustrated on Drawing 20001-401. The National Grid Reference for the site is: ST 19235 91305. The site covers an area of approximately 1.09 hectares. The site is bordered by an industrial unit to the east, a road to the west beyond which are more industrial units, a road to the south beyond which is woodland and the Sirhowy River and to the north by woodland.

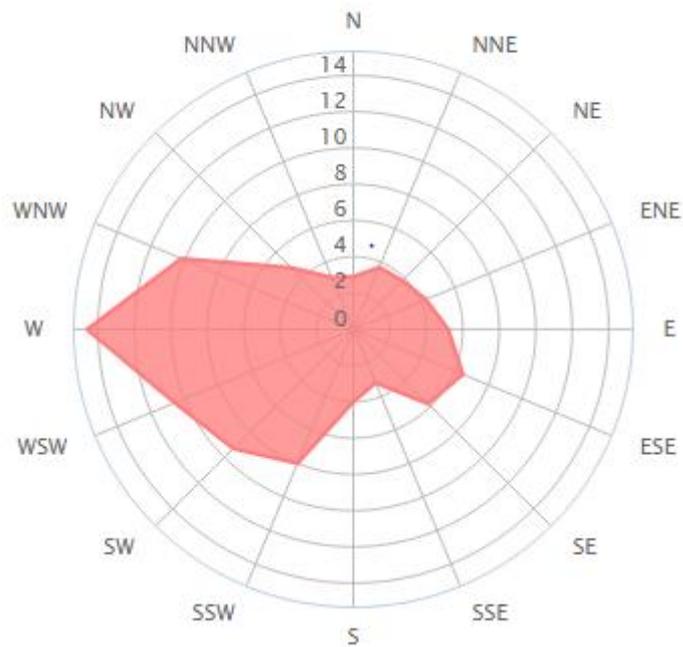
The nearest residential properties are on New Road, approximately 470m Northeast of the eastern edge of the site boundary and William Street, approximately 478m West of the western edge of the site boundary. The nearest place of work is immediately adjacent to the eastern boundary of the facility.

The prevailing winds at this site are from the west, west northwest and west southwest (based on regular observations recorded at the ‘Caerphilly’ monitoring station between April 2013 and May 2015 (<https://www.windfinder.com>)).

Figure 1.1 Caerphilly Weather Station Data

Month of year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
	01	02	03	04	05	06	07	08	09	10	11	12	1-12
Dominant Wind dir.	➤	➤	➤	➤	➤	➤	➤	➤	➤	➤	➤	➤	➤
Wind probability ≥ 4 Beaufort (%)	19	23	18	21	21	11	8	11	5	14	6	24	15
Average Wind speed (kts)	6	7	7	8	7	6	6	6	5	6	4	7	6
Average air temp. (°C)	8	8	10	13	15	19	23	19	17	15	11	9	13

Figure 1.2 Caerphilly Weather Station Data
Wind direction distribution in (%)
Year



Key receptors that have the potential to be impacted by emissions from the site are summarised in Table 1.2 below. Natural Resources Wales Heritage and Conservation Screening Report showed there to be no statutory designated sites near the facility.

Table 1.2 Sensitive Receptors

Receptor	Type	Distance (m)	Direction
The site is located close to other Industrial and Commercial units on the Nine Mile Point Industrial Estate. These lie to the east and west of the site. The closest of these is immediately adjacent to the facility.	Commercial	0	E
Sirhowy River	Ecological	35	S
Agricultural Land	Agricultural	150	S
Residential properties at New Road, Wattsville	Residential	470	NE
Residential Properties at William Street, Cwmfelinfach	Residential	478	W

1.4 Site Access

The Site is accessible for cars via the Heol Tir Ton Road which connects to the B4251 B-road via Greenmeadow Road. The HGV entrance and exit is located on the Greenmeadow Road.

1.5 Planning Permission

The site has previously gained planning consent and an environmental permit for a materials recycling facility with gas-fired waste dryers and a Regenerative Thermal Oxidiser (RTO) to treat odorous air extracted from the facility. The amended development to be implemented will be to part implement the development without the dryer and RTOs. The extracted odorous air from the building will now be treated with via a dust filter and carbon filter.

1.6 Use of Site

Drumcastle Ltd will operate a bespoke Part A Installation Environmental Permit for the operation of the Waste Processing Facility. The Facility will process up to 100,000 tonnes of non-hazardous household, commercial and industrial wastes per annum.

For the majority of the time the facility will accept more than 75 tonnes of waste per day. The waste will be treated to produce either Solid Recovered Fuel (SRF) or Refuse Derived Fuel (RDF) to be exported off site for energy generation. Recyclable wastes will be removed from the incoming waste during the production of the SRF/RDF.

In summary the waste will be brought to site in sheeted vehicles where it is unloaded in the Waste Reception area. The waste will then be loaded into a pre-shredder and screened and sorted to remove fines, metals, and plastics. The waste will then be shredded to the appropriate particle size and the resulting SRF/RDF is then transferred to the end storage bay prior to transfer offsite. Prior to treatment all waste materials will be stored within the building which is on hardstanding.

The scope of the proposed Facility will be limited to the activities specified in Table 1.3

Table 1.3 Regulated Activities

Schedule 1 Activity	Description of the Waste operation	Annex I (D Codes) and Annex II (R Codes) and Descriptions
Part A (1) Section 5.4 Part A(1)(b) ii)	Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day involving pre-treatment of waste for incineration or co-incineration. Bulking of recyclable wastes recovered as an incidental part of production of SRF/RDF	Annex II Codes and Descriptions
		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.
		R5: Recycling/reclamation of other inorganic materials.
		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).
		<u>Total waste Storage Capacity</u>
<u>Non-Hazardous Waste Treatment Capacity</u>	100,000 tonnes per annum which equates to 397 tonnes per day based on 252 operational days per year	

1.7 Non-Permitted Activities

There are no non-permitted activities proposed to be carried out at the Facility, all activities are within the permit boundary.

1.8 Permitted Materials

Permitted wastes will be limited to the waste codes included in Appendix A of the Operational Techniques and Management Plan, and will generically include non-hazardous commercial, industrial, and household waste. This will not change from the previous approval.

1.9 Site Layout

1.9.1. Access Road

The facility will be accessed from the Greenmeadow Road. The access to the site will be split into HGV and office traffic, cars, and vans. The site will be surrounded by a perimeter fence. The main reception building, and cabin will be locked when not in use.

Access to the site will generally be restricted to the workforce other than site visitors during opening hours. The location of the cabin will ensure that any persons or vehicles entering the site will be identified prior to accessing the main waste activity and storage areas. Unauthorised access will not be permitted at any time. The site will be locked and secured when closed. CCTV will be used onsite both to deter unauthorised access to the site, and to capture any unpermitted activity. Drawing 20001-402 shows the layout of the site.

Once inside the site boundary HGV's will access the relevant section of the site via a one-way system. This will ensure the free flowing movement of traffic, while maintaining safety.

1.9.2. Weighbridge

All vehicles permitted to enter the site to deposit waste material or to remove products from the site must pass over a weighbridge. Dedicated in and out weighbridges will be provided to speed access and egress from the site. The weighbridges will be maintained in working order and will comply with current Weights and Measures Regulations and will, using the associated computer system, ascertain and record all waste movements to and from the site. All maintenance and calibration of the weighbridge will be recorded in the site diary.

1.9.3. Office Building

The site office will include:

- Office areas for staff
- Board room
- Staff kitchen and welfare facilities for all staff
- Visitor area

Car parking will be provided to the front of the building with 17 spaces and 2 disabled spaces. HGV vehicles will access the site via a separate entrance leading to the in weighbridge.

1.9.4. Processing/Reception Building

The main process building will have a dedicated materials reception area, an area dedicated for mechanical processing equipment, and a dedicated SRF product storage area. A storage area will also be provided for recycled wastes, i.e., metals, plastics, fines. This will be in dedicated bunkers below the processing equipment.

1.9.5. Storage Areas

The Operator will ensure that the relevant requirements detailed in 'Section 2.1.3 Waste Storage' of Sector Guidance Note 'S5.06: Guidance on the Recovery and Disposal of Hazardous and Non-Hazardous Waste', Environment Agency 2004 are incorporated into on-site procedures.

All activities will take place within the main reception building including tipping and storage of incoming waste, and storage of recyclable and reject materials with the exception of storage of baled recyclable materials which will be stored externally. SRF/RDF will be stored within the main building pending transport offsite. When required, baled, and wrapped SRF/RDF may be stored externally. RDF/SRF bales will be wrapped 5 times and regular inspections will be carried out to identify damaged bales. Any damaged bales will be brought back into the building to be rewrapped.

Adequate storage capacities will be provided onsite accompanied with appropriate measures to avoid the accumulation of waste such as utilising the 'first in' – 'first – out' principle. Maximum storage capacities are shown in Table 1.4 and will not be exceeded. Waste deliveries will be prohibited from entering the site if the reception area is found to be at full capacity and there is insufficient space for storage of waste or incoming vehicles on site.

Table 1.4 Details the storage capacities of each segregated waste type.

Waste types	Containment	Approximate Storage Capacity
Ferrous Metals	In bay within main building which has an impermeable floor	75 tonnes
Non-Ferrous Metals	In bay within main building which has an impermeable floor	75 tonnes
Plastics	In bay within main building which has an impermeable floor	50 tonnes
Heavy wastes (including items such as bricks, wood, rocks, glass, some food waste)	In bay within main building which has an impermeable floor	100 tonnes
3D Heavies / bulky material	In bay within main building which has an impermeable floor	100 tonnes

Paper/Cardboard	In bay within main building which has an impermeable floor	50 tonnes
Fines	In bay within main building which has an impermeable floor	100 tonnes
SRF	Bay at the end of the waste processing equipment	350 tonnes
Bales	Stored outside the building on impermeable surface. Bales containing SRF will be wrapped five times.	600 bales
	Total	900 tonnes, plus 600 bales

1.10 Hours of Operation

There shall be no Heavy Goods Vehicle deliveries to or from the site outside the following times:

- 07:30- 18:00hrs Monday to Friday
- 07:30-13:00hrs Saturdays; and
- No such deliveries on Sunday or Bank Holidays

The treatment of waste through the process will operate continuously 24 hours a day. The facility will be staffed 24 hours a day.

1.11 Staffing and Site Management

Drumcastle Ltd have a number of staff that are WAMITAB qualified. One of these technically competent managers will be in place for the commencement of operation. All other staff on site will be trained in their individual discipline to ensure they are competent in undertaking their responsibilities.

The facilities standby staff rota will be actively managed, and in the event of staff illness, the shift supervisor will be available to carry out the role of the absent staff member and the Site Manager will carry out the Shift Supervisor's role. Maintenance staff will also be available at short notice if required.

All staff and employees associated with the facility will receive necessary training in areas specific to their duties ensuring all staff are competent in undertaking their responsibilities. The minimum training to be provided to all staff at the site will include:

- Material acceptance, management, and control procedures;
- Operational controls and the environmental monitoring required;

- Maintenance procedures for equipment;
- Records to be kept and their format;
- Emergency actions plans to include:
 - On site fires;
 - Evacuation procedures;
 - Spill containment and management; and
 - If applicable, incidents that require notification to NRW and their timescales.

The management team will ensure all appropriate staff members are fully conversant with the requirements of the Planning Permission, PPC Permit, and the materials acceptance and handling procedures outlined in this Management Plan. All appropriate personnel will have access to a copy of the PPC Permit and Management Plan.

All site staff shall be or shall work under the direct supervision of a member of staff who is fully conversant with those aspects of the Permit and Management Plan which are relevant to their specific duties.

1.12 Plant and Equipment

The Waste Processing Facility will comprise of the following primary elements:

- Weighbridge
- Waste reception and storage;
- Storage area for recycled wastes, i.e., metals, plastics, fines
- Shredders
- Screens
- Separating equipment, magnets, heavy light separators, and a near infra-red optical unit for plastic separation
- Dust filters
- Carbon filters
- Baler and Wrapper
- SRF/RDF Storage;
- Electrical Infrastructure
- Weighbridge Office
- Sprinkler tank & pumphouse; and
- Cabin associated with staff and visitors

Equipment used for the loading, unloading, and storage of waste will be clearly documented and labelled to ensure safe operations.

1.13 **Fuel Storage**

Only maintenance oils will be stored on site. Maintenance oils will be stored within the maintenance department and will be stored within a bund on hardstanding.

Fuel for onsite plant will be stored in a self-bunded tank. This tank will be inspected on a regular basis to ensure that no leaks or corrosion is evident on the tank. The details of these visual inspections will be recorded in the site diary. These measures will mitigate against the risk of leakage.

In the event that a defect in the storage tanks is found, then the defect will be repaired as soon as possible.

1.14 **Lighting**

Appropriate internal and external lighting is installed on site. The facility will be lit internally during operational hours and outside when deemed necessary. Cowls will be provided on external lights to ensure light is directed where required and to prevent light spill outside the site boundary. Security lighting will also be provided outside the operational hours of the facility.

2 **Site Engineering for Pollution Prevention and Control.**

2.1 **Drainage**

Adequate drainage infrastructure is provided for the Waste Processing Facility. Surface water drainage and clean run-off from the roof will be discharged via silt traps and full retention interceptors to storage crates. Such interceptors will be subject to regular inspection and maintenance. Surface water will then be released to the existing surface water drains on the industrial estate. See document reference 20001-403.

Silt traps and oil interceptors will be inspected on a regular basis to check their integrity and be maintained to prevent overflowing along with the site drainage system.

Waste received for SRF production will be dry in nature and therefore there will be no runoff.

Foul drainage is discharged via sewer.

In the event of a fire, the site operational procedure shall include closing the penstock valves located on the foul and storm drainage outlet pipes and ensuring that flood barriers are installed at the site access/egress locations. Any runoff from external firefighting will be

directed via interceptors to the surface water crates. Under normal circumstances the water would then pass at a controlled rate to the off-site surface water drainage system.

2.2 Roads and Hardstanding

The whole site will be located on an impermeable hardstanding. Waste will be brought onto site and placed in the Waste Reception Building for segregation. The floor of this building will be impermeable hard standing.

The site has been designed with appropriate falls to allow all surface runoff to discharge towards the drainage system and the interceptor.

The site access road & hardstanding will be inspected by the Site Manager on a daily basis to determine the need for maintenance and cleaning, and litter picking. All departing road transport will be inspected for cleanliness, prior to leaving the site. Paved roads will be swept and washed regularly as determined by Site Manager inspections.

All repairs will match the original standard and specification. Regular inspection will ensure that 'special needs' cleaning will take place when and where necessary.

2.3 Maintenance

All plant and equipment and electrical installations will be kept maintained and in good working condition and subject to routine inspection and maintenance. Equipment associated with waste processing is covered by a maintenance contract and/or a programme of planned preventative maintenance. Vehicles will also be subject to regular maintenance and service schedules.

Any identified maintenance or technical issues will be raised with the appropriate contact (i.e., onsite fitter / contractor / manufacturer) and rectified as soon as practically possible and a note will be made in the site diary. Reserve equipment will be kept on site so that any failed parts are quickly replaced and unnecessary delays in ordering parts can be avoided. Arrangements will be made with maintenance/service companies to ensure that breakdown or damage to any critical items will be dealt with, and repair/replacement actioned as a matter of urgency.

The Planned Preventative Maintenance Planner will be included once the equipment has been purchased and details of maintenance requirements have been supplied by the plant and equipment supplier.

A program of planned maintenance procedures will be included in the EMS for the facility from day 1 of operation. This will include the completion of a machine service record sheet and machine daily inspection checklist.

A regular review will be maintained of the use and the effectiveness of all media in the carbon filters. If the media is becoming ineffective in the treatment of odour the media will be replaced. This replacement of media will be recorded in the site diary. All spent media will be disposed to an appropriately licenced disposal facility.

The Shift Supervisor or other relevant persons will undertake checks to ensure that the integrity of the reception building structure, door operation etc. has not been compromised, the results will then be recorded in the site diary.

2.4 Quarantine Storage Area for Non-Conforming Material

A separate area for the storage and handling of packaged hazardous waste will be located within the waste reception area.

Any wastes which are found not to comply with the conditions of the Environmental Permit, or do not conform to the description provided by the waste carrier/producer will be rejected with records maintained.

If a hot load is received or if waste is found to be burning on site this will be removed, by mechanical loading shovel if safe to do so, to the quarantine area for burning material located in the centre of the yard. This area is identified on Drawing 20001-402.

3 Site Infrastructure

3.1 Site Security

The site will be surrounded by a perimeter fence. The main reception building, and cabin will be locked when not in use.

Access to the site will generally be restricted to the workforce other than site visitors during opening hours. The location of the cabin will ensure that any persons or vehicles entering the site will be identified prior to accessing the main waste activity and storage areas.

Unauthorised access will not be permitted at any time. The site will be locked and secured when closed.

CCTV will be used onsite both to deter unauthorised access to the site, and to capture any unpermitted activity.

3.2 Notices and Signs

A sign will be located at the site entrance which will be readable from outside the site entrance in daylight hours and inspected weekly. The sign will detail the following information:

- The site name and address;
- PPC Permit number;
- Site opening times;
- Site Operator's name;
- Emergency contact name and the telephone number for the operator;
- A statement that the site is permitted by Natural Resources Wales
- Natural Resources Wales national number 0300 0653000.

Any damage or defects found will be repaired or the board replaced within three working days. Adequate instruction signs for drivers shall be prominently displayed throughout the site and shall be maintained in a legible condition at all times.

A copy of the Permit and Management Plan will be kept in the site office.

4 Site Operations

4.1 Pre-Acceptance Procedures

Pre-acceptance procedures will be in place prior to commencement of operations at the Nine Mile Point Waste Processing Facility.

The Operator will ensure that the requirements detailed in Section 2.1.1 Pre-acceptance procedures to assess waste of Sector Guidance Note 'S5.06: Guidance on the Recovery and Disposal of Hazardous and Non-Hazardous Waste', Environment Agency 2004 are incorporated into on-site procedures.

The Nine Mile Point Waste Processing Facility will have capacity to process up to 100,000 tonnes of waste per annum.

A complete list of waste types to be accepted at the facility is provided within Appendix A of the Operational Techniques and Management Plan. The plant and equipment at the site have

been designed to accept and treat all of the wastes listed and EWC codes within the Permit Application.

All waste will be delivered by road to site and will be weighed using the on-site weighbridge. This will be the only access route into the site for waste delivery vehicles.

All deliveries to the site will be subject to pre-acceptance evaluation and delivery schedule as agreed with customers prior to arrival on site.

There will be no ad-hoc waste deliveries. In the event that a vehicle arrives on site, and it is verified that there has been no prior agreement made to receive that vehicle, the delivery will be refused, and vehicle turned away, and the incident recorded in the site diary.

The following information will be requested from all customers prior to waste being accepted on site:

- Waste EWC Code (where appropriate);
- Process generating SIC Code (where appropriate);
- Delivery container type (where appropriate);
- Written description of the material; and
- Anticipated date and time of delivery.

Waste delivery contracts will not be entered into until the operator is confident that the facility is able to receive the waste, and that the nature of material can also be processed without impacting on operations and impacting on any nearby sensitive receptors.

4.2 Delivery Vehicle Reception

Acceptance procedures will be in place prior to commencement of operations at the Nine Mile Point Waste Processing Facility.

All delivery vehicles entering the site will park at the cabin by the weighbridge to undertake Duty of Care paperwork checks. Incoming waste will be inspected by trained staff to confirm compliance with acceptance criteria.

Where possible, the Weighbridge Operative Clerk will carry out a visual inspection of the incoming wastes before they are off-loaded in the waste reception hall. The Machine Operator within the tipping area will also visually check each load and escalate to the Shift Supervisor if any malodorous loads or non-conforming wastes are tipped. The vehicle driver will be advised to wait in case the loads need to be rejected or dealt with separately.

- If wastes are accepted for disposal, details will be entered onto a computer system and a Waste Transfer Note prepared, consistent with fulfilling the company's responsibilities under the provisions of the Duty of Care.
- Details and description of the vehicle delivering the waste, the driver's name, and the operator of the vehicle; and
- A description of the waste by type and quantity.

Waste will only be received on site using sheeted skips/containers and following unloading will be stored within the waste reception building.

Within the main building, a reception bay will be designated to receive incoming waste. Waste will remain here for a maximum of 24 hours before entering the process.

Waste deliveries will be prohibited from entering the site if the reception area is found to be at full capacity and there is insufficient space for storage of waste or incoming vehicles on site.

Waste will be delivered to the site in bulk waste carriers, and once discharged will be stored within the main reception area. The waste will be segregated and sorted into different fractions, for recycling, recovery, or disposal.

Wastes will be segregated to separate recyclable wastes from the waste received. Recyclates for example metals and plastics will be stored inside the building in bays following segregation undertaken in the reception building and will be removed off site for recycling. The remaining bulk waste will be treated to produce SRF, or RDF.

The waste reception building will be fitted with roller shutter doors and kept under negative pressure with internal air being treated via dust filters and a carbon filter prior to its release via a stack. The reception building floor will be an impermeable surface capable of being cleaned.

4.3 Conformance of Materials

All incoming materials shall be examined visually, so far as is reasonably practicable, following acceptance. All incoming materials, so far as is reasonably practicable, will be kept separate from other materials until they have been confirmed and recorded for acceptance at the site. Loads are checked for compliance against transfer notes and site permit. This process will be conducted by trained personnel.

Once the material has been confirmed that it meets the performance specification for acceptance it will be added to the unprocessed waste stockpile in the reception area.

4.4 Non-Conforming Materials

Any wastes which are found not to comply with the conditions of the Environmental Permit, or do not conform to the description provided by the waste carrier/producer will be rejected with records maintained. An investigation to establish the root cause of the problem will be conducted if required with any action to resolve it recorded. Consideration of site operations will be made in response to the review of non-compliance to ensure a continuous improvement process onsite. The management system will be amended to reflect any changes made and staff and management will be made aware. NRW will also be notified of any changes made.

4.5 Product Manufacturing/Processing of Materials

The product manufacturing activities will take place within the purpose-built enclosed building. The main processing building will have a dedicated materials reception area, an area dedicated for mechanical processing equipment, and a dedicated product storage area. The limit of non-hazardous material acceptance to the overall site will be 100,000 tonnes per annum.

Incoming solid wastes will be sorted to prevent unwanted material from entering the subsequent waste treatment process.

Material will be unloaded from delivery vehicles into the tipping hall and subsequently loaded into the primary shredder via the use of a 360-grab unit. A conveyor will then transport the shredded material from the primary shredder to the waste screen on the processing side of the building to separate out the fines. The less than 70mm materials are conveyed to the fines processing plant. The 70-250mm material will be conveyed to the ballistic separators and onward to a series of optical separation units, screens, magnet, and eddy current separators to extract various materials for recycling. Unsuitable materials are manually picked out via two quality control cabins.

There will be dedicated storage bays for mixed PET/HDPE and 2D fibres that feed onto a chain conveyor which will convey the material to the baler. Baled recyclable materials will be stored externally. There will also be storage bays/skids for ferrous metals, non-ferrous metals, heavy non-combustibles, fines <15mm and 3D heavies. The remaining material is conveyed to a secondary shredder for further shredding to SRF quality specification and then conveyed to the dedicated SRF storage area.

The less than 70mm material from the waste screen is directed to the fines treatment plant whereby it undergoes treatment through a series of magnets, eddy current separator, flip flop screens and drum wind shifters to both extract materials suitable for SRF and screen fines.

4.6 Storage of Process Rejects and Products

Waste will be subjected to visual inspection when tipped in the waste reception building. If it is deemed unacceptable to be processed at the facility it will be reloaded onto the delivery vehicle and taken off site immediately.

There will be dedicated storage bays for mixed PET/HDPE and 2D fibres that feed onto a chain conveyor which will convey the material to the baler. Baled recyclable materials will be stored externally. There will also be storage bays/skips for ferrous metals, non-ferrous metals, heavy non combustibles, fines <15mm and 3D heavies.

SRF/RDF will generally be stored inside the main building, however on certain occasions, it may be necessary to bale and wrap the SRF/RDF material and store externally. The bales will be wrapped with five layers of wrapping. This is necessary to protect the SRF/RDF and keep the moisture content down. It also acts as a protection measure to prevent litter. Bales will be monitored daily to ensure that any splitting of wrapping is identified at an early stage and rectified immediately. RDF/SRF will generally be stored for 1 month prior to removal off site. RDF/SRF will be stored for a maximum of 3 months on site.

Bales will be stored to a maximum height of 4 metres or 4 bales (whichever is lower). The storage area for bales of RDF/SRF is 267m². There is storage capacity on site for approximately 600 bales.

It is anticipated that typical storage times for baled wastes will be less than 1 month. The maximum storage time will be 3 months. This is so sufficient loads are available to fill transportation containers to minimise vehicle movements and associated costs and environmental impact.

The facility shall use the 'first- in', 'first-out' waste handling practices, reducing as far as possible the residency time of materials on site.

4.7 Material Dispatch

All products, wastes and recovered materials that are dispatched from the installation will be inspected prior to dispatch to confirm their description and composition. Waste dispatched from the site will only be sent via appropriately licensed waste carriers to appropriately Permitted or approved end markets.

4.8 Contingency Measures for Material Acceptance and Processing

In the event that there is a malfunction or breakdown of essential equipment on site, and the plant cannot accept or process waste, emergency contingency measures will be put into place to manage expected waste deliveries, until normal operations on site can resume.

As all waste received at the site is from other waste management companies, these companies will be contacted when an abnormal operating situation which may lead to excessive waste building up on site is encountered and asked to stop deliveries until the situation is resolved.

Any identified maintenance or technical issues will be raised with the appropriate contact (i.e., onsite fitter / contractor / manufacturer) and rectified as soon as practically possible and a note will be made in the site diary. Reserve equipment will be kept on site so that any failed parts are quickly replaced and unnecessary delays in ordering parts can be avoided.

Arrangements will be made with maintenance/service companies to ensure that breakdown or damage to any critical items will be dealt with, and repair/replacement actioned as a matter of urgency.

Any alternative recovery or disposal routes will always follow the principles of the Waste Hierarchy, and waste will be diverted to other facilities for treatment in priority to any alternative disposal option.

4.9 Hazardous Materials

The site will not accept any materials classified as hazardous.

4.10 Waste Recovery or Disposal

The waste processing facility will divert approximately circa 85% of the waste throughput from landfill by either recycling or recovery of waste.

Waste generated on site will be limited to the office and staff welfare facilities at the site.

4.11 Spillage Procedure

Regarding the implementation of measures to prevent, detect and mitigate spills, a spillage procedure will be implemented on site. All waste material on site will be stored and processed on an impermeable surface so as to prevent ingress of spills or leakages into underlying soils

and groundwater and also to divert liquids to appropriate drainage points. All site personnel will be tasked with monitoring for evidence of spills, leakages, and debris during their day to day routine. Any evidence of spills, leakages, and debris will be reported to the Site Manager or his nominated deputy for remedial action. Clean-up procedures will be implemented to contain and remove potentially polluting material. Records of any pollution incidents including corrective actions will be maintained. Natural Resources Wales will be notified as per requirements of the Environmental Permit. Clear access will be provided to all potentially leaking equipment.

Spill kits will be maintained in order to respond to any spill. The Operator will also have in place emergency measures to deal with any spillages (e.g., the deployment of absorbent mats and booms).

All areas that have the potential for contaminated run-off will be sealed and serviced with a secondary containment system.

Training will be provided to all staff relating to the use of spill kits and the Spill Clean-Up Procedures.

4.12 Fire Control

A detailed account of the provision of Fire Control is provided in the Fire Prevention Plan submitted with the Application. The Fire Prevention Plan has been developed based on the requirements of Natural Resource Wales Fire Prevention and Mitigation Guidance-Waste Management. This guidance document outlines the standards which must be followed when storing combustible materials at permitted sites.

To reduce the possibility of fires and mitigate the impact of fire if it occurs the following measures will be in place.

All site staff will be trained in the Fire Emergency Response Procedure in Appendix B of the Fire Prevention Plan and in the use of firefighting equipment. Key Site and Emergency Contacts are included in Appendix A of the Fire Prevention Plan and will be completed when the site has been constructed.

Records will be maintained of the following activities on-site:

- Incidents including post-incident investigation;
- Stock management, including rotation;
- Training of operatives;
- Site inspections;

- Maintenance;
- Monitoring;
- Testing of firefighting equipment; and
- Complaints.

The facility will be protected with a fire detection and suppression system.

The SRF will be turned and blended at least daily. This will ensure that the temperature does not build up within the stack. The SRF will generally only be stored for 5 working days and will be dispatched on a regular basis with loads leaving daily. Baled SRF will be wrapped and stored externally. Recyclates removed during the RDF/SRF preparation process will be stored in dedicated bays within the main building. Baled recyclable materials will be stored externally.

A strict rotation system will be employed to ensure that no SRF/RDF or recyclates will be stored for longer than 3 months. Records of stock rotation will be kept on site.

Unburnt/ burning material will be separated using on-site machinery where the level of risk permits this activity, and where possible moved to the designated quarantine area. Water will be applied to fire and unburnt material for cooling if the level of risk permits these actions.

The Site Manager will oversee any decision to apply on-site fire-fighting equipment and has the authority to cease on-site measures should the risk to personnel prove too high.

In the event of a fire, waste will not be accepted onto site. Contingency arrangements are in place whereby waste is diverted directly to the Oakleaf Materials Recovery Facility.

Any incidents of fire will be reported to the Natural Resource Wales and recorded in the site diary including the outcome of any root-cause investigations.

A summary of the mitigation measures that will be continuously implemented at the facility include:

- Prevention of fires through:
 - The control of ignition through making the area a no smoking zone, the installation of fire detection and suppression equipment, including sprinklers.
 - No space heaters or lighting in close proximity to the SRF stockpile; and
 - Dedicated flame detectors focused on the SRF stockpile 24 hours per day;
- Prevention of self-combustion through:
 - Short storage times;
 - Low moisture levels in the SRF; and

- Daily turning and mixing of the SRF;
- The removal of the SRF from the site is not subject to seasonality and is removed from the site on a constant basis;
- Reinforcement of fire prevention messages using appropriate signage;
- Ensuring staff and contractors follow safe working practices when undertaking hot works/maintenance;
- Regular maintenance and inspection of all areas of the site;
- Site vehicles fitted with fire extinguishers and dust filters, and rubber strips fitted to buckets where applicable;
- Gas containers, fuels, or other flammable items to be kept in an isolate location;
- Building electrics fully certified by a qualified electrician, with a documented maintenance schedule in place; and
- The provision of firefighting equipment at strategic points around the facility.

The Fire Prevention Plan will be reviewed and updated by senior management following construction and every 4 years afterwards or immediately following any major fire incident / event.

Any technical and managerial changes on site will also initiate a review of the Fire Prevention Plan to ensure that the control techniques remain appropriate for the site.

The first review and update of the Plan will occur during site commissioning prior to full operations commencing to include further detailed information on the proposed mitigation measures installed at the facility.

5 Pollution Control, Monitoring and Reporting Systems

The whole site will be located on an impermeable hardstanding. Waste will be brought onto site and placed in the Waste Reception Building for segregation. The floor of this building will be impermeable hard standing. In order to produce an SRF, the waste required will be dry in nature and therefore there will be no runoff from the process within the building.

5.1 Groundwater

The site has been engineered to provide robust containment to minimise risks of fugitive emissions to groundwater.

All vehicle manoeuvring and storage containers will be located on an impermeable hardstanding, thus preventing any spillages from entering the sub strata and groundwater.

5.2 Surface Water

Surface water from the external areas of site will drain to storage crates for attenuation. Surface water will then be released to the existing surface water drainage system on the industrial estate. All surface water run-off will pass through full retention separators. These will be inspected on a regular basis to check their integrity and be maintained to prevent overflowing.

5.3 Emissions and Monitoring

There shall be no point source emissions to sewer, water, air, or land except from the sources and emission points listed in Tables 5.1 and 5.3 below.

Table 5.1 Point Source Emissions to Air

Air Emission Point Reference and Location	Receiving Media	Source of Emission
A1	Release into the Atmosphere	Extracted air treated with via a dust and carbon filter and released to the atmosphere via stack.

The removal of the gas burners and RTO means that there will no longer be any combustion emissions to air associated with the facility. The only emission to air will be the treated air associated with the negative pressure in the building. This extracted air will be treated in a carbon filter before release via a stack. The proposed emission limit from the top of the stack will be 1,000 odour units per cubic meter (OUE/m³).

There will be no point source emissions to groundwater, land, or water (other than surface water). Surface water drainage and clean run-off from the roof will be discharged via full retention interceptors to storage crates. Surface water will then be released to the existing surface water drains on the industrial estate. Foul drainage is discharged via sewer.

Point source emissions to air will be subject to a programme of monitoring as detailed in table 5.2 below. The emission point sampling locations meet the requirements stipulated in Technical Guidance Note M1 (Monitoring): sampling requirements for stack emissions monitoring.

Table 5.2 Point Source Emissions to Air

Emission Point Ref.	Description	Monitoring Frequency	Limit	Monitoring Standard or Methodology
A1	Odour Concentration	Biannual (Every 6 months)	Max 1,000 OUE/m ³	UKAS and MCERTS accredited Odour Monitoring to BSEN 13725

There will be one point source emissions to water, clean surface water and roof drainage via the existing surface water drain. There will be no process effluent generated as part of the process. Table 5.3 below shows emissions points for discharge of surface water from the facility.

Table 5.3 Point Source Emissions to Water

Emission Point Ref.	Potential Emissions	Pollution prevention measures	Comments	Discharges to	Monitoring Standard and frequency
SW Outfall Approximate NGR: ST 19178 91244	Sediment and oils	Class 1 full retention interceptor with alarm	Surface water run-off from site and oil interceptor and clean roof water (inspected visually)	Storage crates then into existing surface water drain. Drawing reference 20001-403	EN 872 Monthly

Sector Guidance Note 'S5.06: Guidance on the Recovery and Disposal of Hazardous and Non-Hazardous Waste', Environment Agency 2004 references specific controls for minimisation of fugitive releases to water, sewer and groundwater in Section 2.2.5 which has been compared with measures proposed by the Operator in Table 5.4.

Table 5.4 Indicative BAT Requirements for Control of Fugitive Emissions to Water and Groundwater

Requirement	Mitigation measures proposed by Operator	Meets requirements of TGN 5.06?
For surfacing: ▪ Design appropriate surfacing and containment or drainage facilities for all operational areas, taking	▪ Waste materials are non-hazardous therefore the pollution risk is considered low.	Yes

Requirement	Mitigation measures proposed by Operator	Meets requirements of TGN 5.06?
<p>into consideration collection capacities, surface thicknesses, strength/reinforcement; falls, materials of construction, permeability, resistance to chemical attack, and inspection and maintenance procedures;</p> <ul style="list-style-type: none"> ▪ Have an inspection and maintenance programme for impervious surfaces and containment facilities; ▪ Unless the risk is negligible, have improvement plans in place where operational areas have not been equipped with: <ul style="list-style-type: none"> – an impervious surface – spill containment kerbs – sealed construction joints – connection to a sealed drainage system 	<ul style="list-style-type: none"> ▪ Drainage system is connected to an interceptor which is subject to regular inspection and maintenance. ▪ The waste reception building will be constructed on impermeable hard standing. ▪ All surfacing will be inspected regularly. 	
<p>Above ground tanks: All above-ground tanks containing liquids whose spillage could be harmful to the environment should be bunded.</p>	<p>No above ground storage tanks with the exception of a sprinkler tank. Fuel will be stored in a self-bunded tank.</p>	<p>Yes</p>
<p>All sumps should:</p> <ul style="list-style-type: none"> ▪ Be impermeable and resistant to stored materials; ▪ Be subject to regular visual inspection and any contents pumped out or 	<p>There are no sumps</p>	<p>Yes</p>

Requirement	Mitigation measures proposed by Operator	Meets requirements of TGN 5.06?
<p>otherwise removed after checking for contamination;</p> <ul style="list-style-type: none"> ▪ Where not frequently inspected, be fitted with a high level probe and alarm, as appropriate; ▪ Be subject to programmed engineering inspection (normally visual but extending to water testing where structural integrity is in doubt). 		

It can be concluded that the measures proposed to control fugitive releases to water, land and groundwater will meet the requirements laid out in Sector Guidance Note ‘S5.06: *Guidance on the Recovery and Disposal of Hazardous and Non-Hazardous Waste*’, Environment Agency 2004.

6 Amenity Management and Monitoring

Regular cleaning of the site will occur to prevent build-up of odorous materials or dust and to clean up spillages of odorous or potentially odorous material.

6.1 Dust Control

The main sources of any fugitive emissions will be dust from waste handling. A detailed account of the mitigation techniques for reducing emissions to air is provided in Appendix A of the Environmental Risk Assessment.

The measures proposed to control fugitive emissions to air will meet the requirements laid out in Sector Guidance Note ‘S5.06: *Guidance on the Recovery and Disposal of Hazardous and Non-Hazardous Waste*’, Environment Agency 2004 referencing specific controls for minimisation of dust emissions in Section 3.3.4.

Daily visual assessment of the site condition will be conducted by the Site Manager.

All site operatives will be vigilant and report any problems immediately to the Site Manager to implement appropriate corrective action. Staff will be trained appropriately to minimise emissions of dust and records maintained.

A 15mph speed limit will be imposed on site for all vehicles.

Table 6.1 below compares the measures proposed by the Operator with indicative BAT requirements.

Table 6.1 Indicative BAT Requirements for Control of Fugitive Emissions to Air (Dust)

Requirement	Mitigation measures proposed by Operator	Meets requirements of TGN 5.06?
Covering of skips and vessels	Loaded vehicles are sheeted to minimise spillages and prevent wind-blown dust and litter.	Yes
Avoidance of outdoor or uncovered stockpiles (where possible)	All loose waste will be stored within the reception building.	Yes
Where dust creation is unavoidable, use of sprays, binders, stockpile management techniques, windbreaks and so on	All activities are carried out within the main reception building. Dust extraction and filtration is provided on the extracted building air and specific items of equipment. The tipping hall and processing areas will have high level ductwork installed to extract the air. As part of the processing area ductwork, dust extraction hoods will be installed at Optical Separators. A dedicated dust extraction system will be installed as part of the light and heavy separation process. This will circulate the air through three dust silos located externally on the eastern perimeter of the SRF building. The dust silos will collect dust into externally located bins for safe disposal. This system will ensure that clean air is circulated into the light and heavy separation processes.	Yes

Requirement	Mitigation measures proposed by Operator	Meets requirements of TGN 5.06?
Regular wheel and road cleaning (avoiding transfer of pollution to water and wind blow)	Wheel cleaning will be in place on-site and will be employed as required should inspection deem it necessary. Vehicles are inspected for mud, litter, dust, and debris prior to leaving site.	Yes
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	All processing activities are carried out within the main reception building. A dust extraction and filter system will be in place.	Yes
Regular housekeeping	The site access road & hardstanding will be inspected by the Site Manager on a daily basis to determine the need for maintenance and cleaning, and litter picking. All departing road transport will be inspected for cleanliness, prior to leaving the site. Paved roads will be swept and washed regularly as determined by Site Manager inspections.	Yes
Enclosed silos (for storage of bulk powder materials) vented to fabric filters. The recycling of collected material should be considered under Section 2.6.	Not applicable, no storage silos are required on-site.	Not applicable
Enclosed containers or sealed bags used for smaller quantities of fine materials	All material will be stored within a fully enclosed building. Only baled recyclates and baled and wrapped RDF/SRF will be stored outside. This will be wrapped five times and stored within an external bay.	Yes

6.2 Mud and Debris

Generation of mud is highly unlikely as the site is surfaced with hardstanding throughout. Mud has therefore been discounted as a potential hazard.

Wheel cleaning will be in place on-site and will be employed as required should inspection deem it necessary. Vehicles are inspected for mud, litter, dust, and debris prior to leaving site.

All site personnel will be tasked with monitoring for evidence of debris during their day to day routine. Any evidence of debris will be reported to the Site Manager.

6.3 Odour Control

Handling and storage of waste on-site has the potential to generate odour. Odour emissions, control measures and monitoring of emissions are considered in detail within the Odour Management Plan which will be implemented onsite and regularly reviewed as part of the Environmental Management System. The Operator will adhere to the site's Odour Management Plan.

The measures proposed to control odour meet the requirements laid out in Sector Guidance Note '*S5.06: Guidance on the Recovery and Disposal of Hazardous and Non-Hazardous Waste*', Environment Agency 2004 which references specific controls for minimisation of odorous emissions in Section 2.2.6 5.

Only a small quantity of wastes stored on site have the potential to generate odour. Activities are limited to sorting, shredding, bailing, and bulking which are not inherently odorous compared with higher risk waste treatment activities. Regarding the roofing of waste storage and treatment areas, all of these activities are carried out within the main reception building, which is kept under negative pressure to prevent fugitive emissions of odorous air from the buildings. The waste reception building will be fitted with fast acting roller shutter doors. Before release to air via a stack the gas will be treated firstly to remove dust via dust filters then via carbon filters to remove odours.

Operational measures and high standards of housekeeping implemented as part of the general site management of the Facility will also minimise the occurrence of fugitive odours from the day to day activities. Activities will be managed in accordance with the operator's management systems. This will include regular inspections and maintenance of equipment to ensure they continue to operate at optimum conditions.

There is one potential point source of odour, from the stack following the carbon filter. The proposed emission limit from the top of the stack will be a maximum of 1,000 odour units per cubic meter (OUE/m³) and will not be exceeded.

Wastes will be delivered to the facility via the road in enclosed or sheeted vehicles. Vehicles will be cleaned and inspected before leaving site to remove odorous or biodegradable material if required. Vehicles will be sheeted before leaving site. Waste arriving at the site will be processed in a timely fashion using the 'first in' – 'first – out' principle.

Baled recyclable material and RDF/SRF will be stored outside. RDF/SRF bales will be wrapped 5 times and regular inspections will be carried out to identify damaged bales. Any damaged bales will be brought back into the building to be rewrapped.

A regular review will be maintained of the use and the effectiveness of all media in the carbon filters. If the media is becoming ineffective in the treatment of odour the media will be replaced. This replacement of media will be recorded in the site diary. All spent media will be disposed to an appropriately licenced disposal facility.

If highly odorous waste is not identified until load has been tipped, waste will be bulk loaded on to outgoing vehicles to be removed from site to disposal facility as a matter of priority.

6.3.1 Monitoring

The Operator will monitor odour emissions at the Facility to ensure that any odour releases that may occur do not result in the creation of an odour nuisance at a sensitive receptor. Daily odour assessments will be carried out onsite with appropriate action taken if required, more frequently during warm weather.

Monitoring of odour emissions by sensory / olfactory field odour assessment (sniff testing) will be carried out by the Shift Supervisor or relevant person who has not been recently working in the waste reception building. It is recognised that staff normally exposed to the odours may not be able to detect or reasonably judge the intensity of odours off site. Sniff tests will record the perceived level of odour present at the site's Environmental Permit Boundary and will give an indication of the effectiveness of the current operating conditions at the site. Such an assessment is a 'sensory' evaluation, as the human nose is used as the detector as opposed to a specific item of monitoring equipment, as no such equipment is available for the detection of odour.

Records of sniff testing undertaken will be noted on the odour monitoring form. Forms will be filed and kept on site for inspection by NRW as and when required.

Routine monitoring of odour will include:

- Daily sniff testing to a standard as defined by the Natural Resource Wales Guidance on How to Comply with your Environmental Permit: Additional Guidance for H4 Odour Management;
- Monitoring of weather conditions; and
- Monitoring of complaints and other forms of community feedback.

Sniff testing will be carried out daily in all instances by the Shift Supervisor or a relevant person, in particular during periods when it will coincide with potentially odorous activities, but will also be undertaken in addition to the daily monitoring for the following reasons only:

- During periods of adverse meteorological conditions;
- During plant breakdowns or other periods of abnormal operation;
- In the event that a complaint is received on site.

The Shift Supervisor and other relevant persons will be trained in the requirements of the Guidance Document H4 – Odour Management with specific reference to Sniff Testing. The Odour Monitoring Form in Appendix D of the Odour Management Plan will be used to record all sniff tests.

As part of the daily checks the Shift Supervisor or other relevant persons will also undertake checks to ensure that the integrity of the reception building structure, door operation etc. has not been compromised, the results will then be recorded in the site diary.

Any identified maintenance or technical issues will be raised with the appropriate contact (i.e., onsite fitter / contractor / manufacturer) and rectified as soon as practically possible and a note will be made in the site diary. In addition to the technical checks within the waste reception area all incoming wastes will also be visually and olfactory checked to ensure they are suitable and in a suitable condition for processing.

Weather conditions will be recorded on a daily basis.

6.3.2. Control Measures during Routine Maintenance

When maintenance work is undertaken, there is the potential that the site is more vulnerable to fugitive releases of odour. There are a limited number of maintenance operations on-site which will contribute directly to odour generation. Emptying and maintaining the full retention separators has the potential to generate odours. Whilst emptying the full retention separators perimeter sniff testing will increase and any odours noted and acted upon. Shall any highly offensive odours result, the activity will cease. Methods of removal of the contents of the interceptors will be reviewed and revised.

Specific measures to minimise odour are included in the Odour Management Plan.

Odour minimization will be achieved through careful monitoring of incoming wastes and handling any potentially odorous wastes as a priority to reduce the potential to generate odours at source. Up to 10% of the predicted incoming wastes are more likely to be odorous.

6.3.3. Abnormal Conditions

In order to ensure adequate mitigation measures are in place to address all possible abnormal odour emission scenarios at the proposed facility, the possible scenarios and response measures to be implemented are presented in Table 6.2 below and are provided in the Odour Management Plan.

Following the occurrence of any abnormal / emergency scenario on site a full post-event investigation will be conducted and if necessary, modifications to the control measures, mitigation equipment, training and contingency actions will be implemented, and the Odour Management Plan updated accordingly.

Table 6.2 Abnormal / Emergency Operations

Scenario	Abnormal / Emergency Operations	Location	Likely effect on emissions inventory	Contingency / Control Measures
Highly odorous waste received	Abnormal	Site entrance	Potential increase in odour emissions from stored waste if allowed on site	<ul style="list-style-type: none"> ▪ Site manager will refuse entry of the waste load
Highly odorous waste received	Abnormal	Reception building	Potential increase in odour emissions from stored waste	<ul style="list-style-type: none"> ▪ If highly odorous waste is not identified until load has been tipped, waste will be bulk loaded on to outgoing vehicles to be removed from site to disposal facility as a matter of priority.
Mechanical or electrical failure / preventing processing	Abnormal	Reception building	Potential increase in emissions of odour from prolonged waste storage	<ul style="list-style-type: none"> ▪ Programme of Preventative Maintenance will be employed on site to minimise any potential breakdowns or plant failure ▪ Instigate immediate investigation and remedial action as required. ▪ Arrangements will be made with local maintenance/service companies to ensure that breakdown or damage to any critical items will be dealt with, and repair/replacement actioned as a matter of urgency ▪ If storage of waste is maximised, then the further acceptance of waste will be restricted.

Scenario	Abnormal / Emergency Operations	Location	Likely effect on emissions inventory	Contingency / Control Measures
Failure of odour management systems.	Abnormal / Emergency	Reception building	Increased risk of fugitive emissions from the reception building.	<ul style="list-style-type: none"> ▪ Instigate immediate investigation and remedial action as required. ▪ If storage/treatment of waste is considered to be a risk, then the further acceptance of waste will be restricted.
Restricted staff availability	Abnormal	All operational locations	Risk of increased impact from any area of site where normal operations affected	<ul style="list-style-type: none"> ▪ Several staff will be trained to operate the loading shovels and other mobile plant; all other equipment will be automated. ▪ If required hired staff could be employed temporarily as necessary.
Fire	Emergency	Reception Building	Risk of increased impact from any area of the site affected by fire during and after fire	<ul style="list-style-type: none"> ▪ Fire risk procedures will be adopted on site. ▪ If required following a fire, operations will cease until all plant and infrastructure is restored. ▪ Details of the Facility's fire risk procedures will be included within the Accident Management Plan.
Flood	Emergency	All operational locations	Risk of increased impact from any area of site affected by flooding during and after flood	<ul style="list-style-type: none"> ▪ Site is not located within a flood zone. ▪ In the extremely unlikely event that flooding should occur and waste has been submerged, there is a likelihood of degradation and onset of anaerobic conditions early, so this will require immediate treatment or removal off site. ▪ No further waste will be received on site until flooding abated

Scenario	Abnormal / Emergency Operations	Location	Likely effect on emissions inventory	Contingency / Control Measures
Extreme meteorological conditions	Abnormal / Emergency	All operational locations	No change anticipated	<ul style="list-style-type: none"> ▪ When extreme meteorological conditions occur inhibiting the adequate dispersion of odours or increasing risk of unacceptable exposure at receptors, potential odour generating activities such as waste reception will be suspended.

6.3.4. Complaints

Should odour be detected at the site boundary, a note of this will be made in the site diary and the Shift Supervisor will take appropriate steps to mitigate the odour, which comprise as a minimum:

- Inspection of site operations to identify source through sniff testing;
- Removal of any particularly offensively odorous wastes from site;
- Review of acceptance and pre-acceptance procedures to prevent recurrence; and
- Review of storage facilities to ensure that they are designed to minimise odour.

Odour complaints received at the facility will be reported to NRW and followed up on with on-site investigation, which will also be reported to NRW via the appropriate Environmental Permit Notification System.

It is not proposed to undertake any grab sample monitoring unless continuous odours are identified at the facility or multiple complaints are received. At such time the Odour Management Plan will be reviewed and the requirement for such monitoring carefully re-evaluated.

It is vital to record and act upon complaints received and communicate the outcome of the investigation to the complainant. It is equally vital to undertake a review following complaints or incidents if warranted to implement further control measures or change behavioural practices on site to prevent the event from occurring again. The Operator will undertake a formal review of onsite processes following any major incident and will routinely review any complaints received as and when they occur.

All records of events and actions taken will be retained as required by the Environmental Permit

Engagement with Neighbours

In the event of odour issues, the complaints procedure will be adhered to and will engage with the public, if required, and liaise with the local Natural Resources Wales Officer to determine appropriate steps. The operator intends to implement an open and transparent approach with the local community upon commencement of operations.

Responding to Complaints

The information/contact number will be provided on the site entrance board for the public to use should they wish to register a direct complaint to the Operator. Following any complaints received, the Operator will endeavour (where possible) to contact the complainant to provide feedback on actions taken to both assess the event and convey any remedial actions taken.

Where complaints are received directly from the public the Operator will follow the Odour Complaints Procedure presented in Appendix B of the Odour Management Plan.

All Complaints will be recorded on an Odour Complaint Form such as that presented in Appendix C of the Odour Management Plan. A record of any complaints will be forwarded to the site's Regulatory Officer. Information to be recorded includes the date, time, location/address of the complainant (where provided), time the odour was noted to be causing a nuisance and a description of the odour (from the complainant).

A trained member of staff will then attend the location of the odour complaint and undertake a walkover sniff test recording the results on an Odour Monitoring Form in Appendix D of the Odour Management Plan.

If odour is encountered, the source of it will be investigated by site management and the outcome of these investigations recorded.

Investigations will be carried out into the likely source and causes of the odour, including a review of the meteorological data. Where odour is identified, suitable remedial action will be implemented. All actions taken shall be recorded.

In such circumstances, an incident report will be completed and provided to Natural Resources Wales with suitable feedback provided to the complainant also.

Where no odour is observed, a record of the monitoring round will be taken, the meteorological data will also be checked for prevailing conditions at the time the odour was observed, and a report will be provided to Natural Resources Wales with suitable feedback provided to the complainant.

The appropriate Environmental Permit Notification Forms will be used to report any odour incidences / complaints to Natural Resources Wales.

The operator will ensure the following information is recorded:

- Any material changes to the site layout and operations;
- Site inspections by the operator or other body and any subsequent issues and corrective actions taken;
- Emergencies;
- Complaints and actions taken;
- Critical plant/equipment failure;
- A record of any rejection of waste;

- Records relating to pre-acceptance for cross-reference and verification at the waste acceptance stage;
- Technically competent manager – attendance on site;
- Any Incidents/accidents on site and actions taken;
- Security failures;
- Severe weather conditions;
- Waste accepted and dispatched from the site;
- Natural Resources Wales Compliance Assessment Reports (CARs); and
- Details of emissions reportable incidents in accordance with the Permit.

All records will be held in the site office and will be available on request. All records, which are required under the conditions of the Environmental Permit, will be maintained, and kept secure from loss, damage, or deterioration for a minimum period of 3 years. Any records held electronically will be backed up on a regular basis.

Electronic back up records will be held in the company's head office.

6.4 Noise

Measures will be implemented, maintained, and regularly reviewed throughout the operational life of the site to ensure that noise associated with the installation does not have a negative impact outside the site boundary.

The measures proposed to control odour meet the requirements laid out in Sector Guidance Note 'S5.06: *Guidance on the Recovery and Disposal of Hazardous and Non-Hazardous Waste*', Environment Agency 2004 which references specific controls for minimisation of noise emissions in Section 2.9: Noise.

A noise assessment has been undertaken for the site which confirms that the facility will have a low noise impact.

The Operator will employ basic good practice measures for the control of noise. Equipment associated with waste processing is covered by a maintenance contract and/or a programme of planned preventative maintenance. All noise generating equipment is located within the main process building.

Vehicle movements into and out of the site will only take place during the normal working day. Vehicles will be subject to regular maintenance and service schedules. All vehicles and plant will be fitted with up to date technology including "white noise" reversing alarms or intelligent

alarms that can only be heard in the immediate vicinity. All vehicles will not be allowed to idle when not in use.

All roadways will be surfaced with no significant undulations and with 'non-squeal' surfaces.

Operational procedure in place to deal with complaints about noise with records maintained.

Staff will be trained appropriately to be able to respond to noise issues or incidents with records maintained.

6.5 Vermin Control

6.5.1. Pests

The key sensitive receptors identified for pests include the local human population, and users of the site itself. Potential hazards include vermin and flies attracted to wastes delivered and stored on site. Areas which could attract pests are the reception building and stored RDF/SRF.

The facility has been designed and will be operated in such a way that the attraction of animals, vermin, pests, and flies is reduced to a minimum. All waste acceptance activities are carried out within a building. Wastes arriving at the site will be managed using the 'first-in', 'first-out' waste handling practice, reducing as far as possible the storage time of untreated materials at the facility.

The site will be carefully managed including good housekeeping procedures and regular checks will be made within and around the site for litter and spillages. In addition, the site access and highway outside will be regularly inspected to ensure the access routes in and out of the facility are kept clean.

The facility will have a vermin/pest control contract set up with a pest control specialist prior to operations commencing. Monthly pest control inspections will be carried out by the contractor. The effectiveness of the techniques will be kept under review and appropriate modifications implemented if required. Records of all vermin and pest control visits and initiatives will be maintained and will be available for inspection by the relevant authorities. Regular checks and recording of potential pests will be carried out and corrective actions will be initiated.

6.6 Litter

Litter can potentially be generated from the incoming waste materials; however, all waste material will arrive onto site in enclosed or sheeted vehicles. All waste delivery vehicles will

have their wheels cleaned prior to exiting the reception building, if needed, to ensure no litter is tracked out of the building.

Waste acceptance and de-packaging will occur inside a building in a controlled environment.

In addition, management controls to be implemented include good housekeeping practices and undertaking routine visual inspections of the site and its immediate environs to identify any litter.

Any issues identified will be noted in the site diary, investigated and appropriate remedial action taken.

7 Site Records

The operator will ensure the following information is recorded:

- Any material changes to the site layout and operations;
- Site inspections by the operator or other body and any subsequent issues and corrective actions taken;
- Emergencies;
- Complaints and actions taken;
- Critical plant/equipment failure;
- A record of any rejection of waste;
- Records relating to pre-acceptance for cross-reference and verification at the waste acceptance stage;
- Technically competent manager – attendance on site;
- Any Incidents/accidents on site and actions taken;
- Security failures;
- Severe weather conditions;
- Waste accepted and dispatched from the site;
- Natural Resources Wales Compliance Assessment Reports (CARs); and
- Details of emissions reportable incidents in accordance with the Permit.

All records will be legible and held in the site office and will be available on request. All records, which are required under the conditions of the Environmental Permit, will be maintained, and kept secure from loss, damage, or deterioration for a minimum period of 3 years. Any records held electronically will be backed up on a regular basis.

Electronic back up records will be held in the company's head office.

7.1 Reporting

As part of the sites Environment Management System, audits will be carried out on an annual basis to check that all activities are being carried out in line with the requirements of the Environmental Permit, Management Procedures, and associated legislation.

A summary record of the waste types and quantities received and removed from the site will be made at the frequencies and in a format to be agreed in writing with Natural Resources Wales.

Records of internal site inspections by the Site Manager will be logged and available for inspection by Natural Resources Wales during routine audits.

8 Notification

In the event that an accident or incident, which could impact on the environment occurs, the Operator will notify Natural Resources Wales as soon as practically possible, using the phone line (0300 065 3000). The Shift Supervisor or TCM for the facility will also notify the Regulatory Officer should any complaints be received directly to site and advise what remedial measures or actions have been taken to address the problem. Copies of any material complaints received will be made available to Natural Resources Wales for review.

The Operator will take the measures necessary to limit the environmental consequences of such an incident or accident and will take the measures necessary to prevent further possible incidents or accidents.

9 Closure and Decommissioning

In the event that activities cease on site and de-commissioning is required, a detailed 'Closure Plan' will be submitted to NRW and other regulatory bodies as appropriate. This will include details of how the facility will be dismantled, how wastes produced from dismantling will be either recycled/reused or where appropriate disposed. Finally, the site will be decontaminated to the status specified in the Application Site Condition Report.

Appendix A Drawings



LEGEND

— SITE / INSTALLATION BOUNDARY

REVDATE	DESCRIPTION	DRN	CKD
FOR PERMIT			

Taggarts

CLIENT
NINE MILE POINT

CONTRACT
NINE MILE POINT

DRAWING
SITE / INSTALLATION BOUNDARY

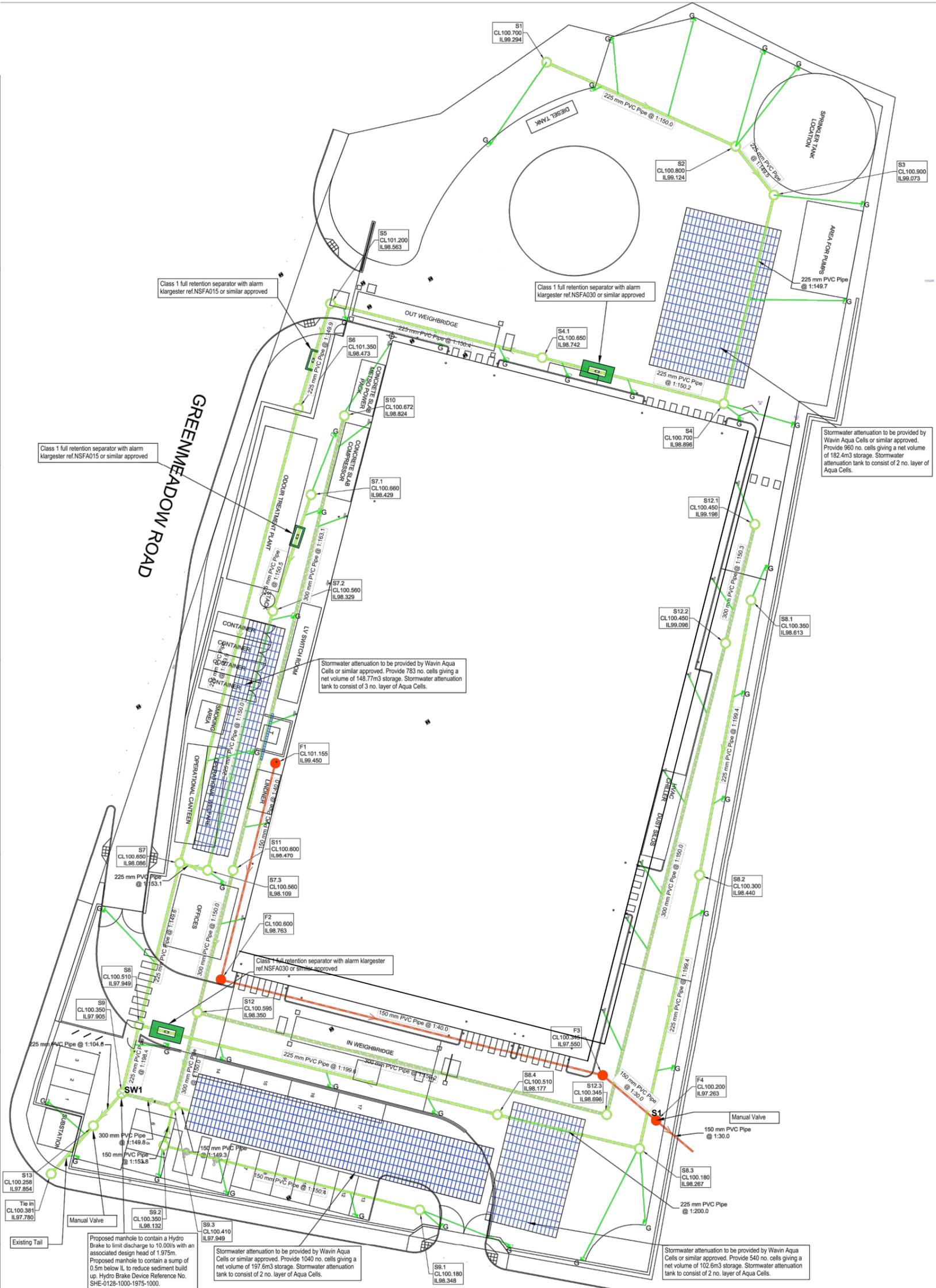
SCALE 1:1,000 @ A3 DATE NOV 2020

DRAWN WS CHECKED RY

DRG No. 20001-401 REVISION

<p>Architects Civil Engineers Waste & Energy Project Managers</p>	<p>23 Bedford Street Belfast BT2 7EJ t: 028 9066 2121 e: info@taggarts.uk f: www.taggarts.uk</p>
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NOTES
EMISSION POINT S1 REMOVED AS THERE WILL BE NO PROCESS WASTEWATER DISCHARGING TO THE SEWER. THERE WILL BE NO WASTEWATER FROM THE PROCESS.



Stormwater attenuation to be provided by Wavin Aqua Cells or similar approved. Provide 960 no. cells giving a net volume of 182.4m³ storage. Stormwater attenuation tank to consist of 2 no. layer of Aqua Cells.

Stormwater attenuation to be provided by Wavin Aqua Cells or similar approved. Provide 783 no. cells giving a net volume of 148.77m³ storage. Stormwater attenuation tank to consist of 3 no. layer of Aqua Cells.

Stormwater attenuation to be provided by Wavin Aqua Cells or similar approved. Provide 540 no. cells giving a net volume of 102.6m³ storage. Stormwater attenuation tank to consist of 2 no. layer of Aqua Cells.

Proposed manhole to contain a Hydro Brake to limit discharge to 10,00l/s with an associated design head of 1.975m. Proposed manhole to contain a sump of 0.5m below IL to reduce sediment build up. Hydro Brake Device Reference No. SHE-0128-1000-1975-1000.

Stormwater attenuation to be provided by Wavin Aqua Cells or similar approved. Provide 1040 no. cells giving a net volume of 197.6m³ storage. Stormwater attenuation tank to consist of 2 no. layer of Aqua Cells.

A-23.08.2022	Update to Weighbridge Location	KB	AT
A-12.01.2022	Emission Point S1 and SW1 added	KB	RY
REVDATE	DESCRIPTION	DRN	CKD

FOR PERMIT



Stormwater Aquacells must be:
1. Clipped together.
2. Bedded (foundation).
3. Trench fill to below invert level of proposed foul diversion.
4. Wrapped in impermeable membrane and hot sealed joints.
5. Reinforced earth/concrete surround for lateral earth pressure.
6. Refer to Drawing No. 10039-605 for further information regarding protective concrete side details.
7. Proposed storm manholes before and after stormwater attenuation tank to contain sumps of 0.5m below IL to reduce sediment build up.
8. Manufacturer recommends an inspection manhole (burst) in centre of attenuation tank.
9. Loading should account for trafficking by vehicles e.g. Aqua Cell Prime = 45.0 tonnes/m², Aqua Cell Core = 56.0 tonnes/m², Aqua Cell Plus = 65.0 tonnes/m².

STORM DRAINAGE MANHOLE SCHEDULE

MH	DIA Ø	TYPE	COVER LEVEL	INVERT LEVEL	DEPTH	CHAINAGE	PIPE RUN	CHAMBER	COVER SIZE
S1	225mm	PVC	100.7m	99.294m	1.406m	S1-S2	25.52m	1200mm	675 SQ
S2	225mm	PVC	100.8m	99.124m	1.678m	S2-S3	7.625m	1200mm	675 SQ
S3	225mm	PVC	101.9m	99.073m	2.827m	S3-S4	26.49m	1200mm	675 SQ
S4	225mm	PVC	100.7m	98.896m	1.804m	S4-S4.1	23.082m	1200mm	675 SQ
S4.1	225mm	PVC	100.65m	98.742m	1.908m	S4.1-S5	26.82m	1200mm	675 SQ
S5	225mm	PVC	101.2m	98.563m	2.637m	S5-S6	13.491m	1200mm	675 SQ
S6	225mm	PVC	101.35m	98.473m	2.877m	S6-S7	57.992m	1200mm	675 SQ
S7	225mm	PVC	100.65m	98.086m	2.564m	S7-S8	20.499m	1200mm	675 SQ
S7.1	225mm	PVC	100.66m	98.429m	2.231m	S7.1-S7.2	15.046m	1200mm	675 SQ
S7.2	225mm	PVC	100.56m	98.329m	2.231m	S7.2-S7.3	32.999m	1200mm	675 SQ
S7.3	225mm	PVC	100.56m	98.109m	2.451m	S7.3-S7	3.521m	1200mm	675 SQ
S8	225mm	PVC	100.51	97.949m	2.561m	S8-S9	8.728m	1200mm	675 SQ
S8.1	225mm	PVC	100.35m	98.613m	1.737m	S8.1-S8.2	34.5m	1200mm	675 SQ
S8.2	225mm	PVC	100.3m	98.44m	1.860m	S8.2-S8.3	34.5m	1200mm	675 SQ
S8.3	225mm	PVC	100.18m	98.267m	1.913m	S8.3-S8.4	17.997m	1200mm	675 SQ
S8.4	225mm	PVC	100.510m	98.177m	2.333m	S8.4-S8	45.5m	1200mm	675 SQ
S9	225mm	PVC	100.35m	97.905m	2.445m	S9-S10	5.337m	1500mm	675 SQ
S9.1	150mm	PVC	100.185m	98.348	1.837m	S9.1-S9.2	32.473m	1200mm	675 SQ
S9.2	150mm	PVC	100.35m	98.132m	2.218m	S9.2-S9.3	5.0m	1200mm	675 SQ
S9.3	150mm	PVC	100.41m	97.949m	2.461m	S9.3-S9	6.589m	1200mm	675 SQ
S10	300mm	PVC	100.672m	98.824m	1.848m	S10-S11	57.727m	1200mm	675 SQ
S11	300mm	PVC	100.6m	98.470m	2.130m	S11-S12	16.001m	1200mm	675 SQ
S12	300mm	PVC	100.595m	98.350m	2.245m	S12-S9.3	12.001m	1200mm	675 SQ
S12.1	300mm	PVC	100.450m	99.196m	1.254m	S12.1-S12.2	15.034m	1200mm	675 SQ
S12.2	300mm	PVC	100.45m	99.096m	1.345m	S12.2-S12.3	60.001m	1350mm	675 SQ
S12.3	300mm	PVC	100.345m	98.696m	1.649m	S12.3-S12	51.975m	1200mm	675 SQ
S13	225mm	PVC	100.258m	97.854m	2.404m	S13-Tie In	7.864m	1500mm	675 SQ
Tie In	N/A	PVC	100.381m	97.780m	2.601m	N/A	N/A	1200mm	675 SQ

FOUL DRAINAGE MANHOLE SCHEDULE

MH	DIA Ø	TYPE	COVER LEVEL	INVERT LEVEL	DEPTH	CHAINAGE	PIPE RUN	CHAMBER	COVER SIZE
F1	150mm	PVC	101.155m	99.45m	1.705m	F1-F2	27.509m	1200mm	675 SQ
F2	150mm	PVC	100.6m	98.763m	1.837m	F2-F3	48.515m	1200mm	675 SQ
F3	150mm	PVC	100.345m	97.55m	2.795m	F3-F4	8.614m	1200mm	675 SQ
F4	150mm	PVC	100.2m	97.263m	2.937m	F4-OUT	5.959m	1200mm	675 SQ

CLIENT
NINE MILE POINT

CONTRACT
NINE MILE POINT

DRAWING
SITE DRAINAGE

SCALE
1:500 @ A3

DATE
NOV 2021

DRAWN
WS

CHECKED
RY

DRG No.
20001-403

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