

Sidegate Lane
Battery Recycling Facility
1.7 Fire Prevention Plan
June 2025

recycling and recovery UK www.suez.co.uk



Document Details

Document title	Sidegate Lane Battery Recycling Facility Fire Prevention Plan			
Version	2.0			
Date	June 2025			
Prepared by	Katie Heath – Environment Permit Manager			
Reviewed by	Geraldine Guiguet-Doron – Environment Permit Manager Amy Mcaree – EIR Manager Alan Colledge – Technical Director			
Approved by	Nigel Ingram – Operations Director			
Distribution	SUEZ Environment Agency			

Document Review History

Date	Version	Description
September 2019	Version 1.0	Original Fire Prevention Plan
August 2020	Version 1.1	Updated Fire Prevention Plan following EA comments
December 2023	Version 1.2	Operational review and update
January 2024	Version 1.3	Updated Fire Prevention Plan following EA comments
June 2025	Version 2.0	Updated to new template for permit variation to add battery recycling facility



Contents

1	IN	TRODUCTION	1
2	RI	SK OF FIRE	2
	2.1	Assessing the Risk of Fire	2
	2.2	Combustible Materials on Site	2
	2.3	Waste storage	2
	2.4	Hazardous materials storage	3
	2.5	Cause of Fire	4
	2.6	Impacts of a Fire	4
	2.7	Sensitive Receptors	5
	2.8	Wind Direction	6
3	PR	REVENTATIVE MEASURES	7
	3.1	SUEZ Policies and Procedures	7
	3.2	Controls to Manage Common Causes of Fire	7
	3.3	Controls to Prevent Self-Combustion of Waste	12
	3.4	Measures to Prevent Fire Spread	13
4	DE	TECTION AND SUPPRESSION MEASURES	15
	4.1	Fire Detection	15
	4.2	Fire Suppression	16
	4.3	Fire Fighting Techniques	16
	4.4	Water Supply	17
	4.5	Fire Water Management	17
	4.6	Contingency Plan in the Event of a Fire	18
	4.7	Out of hours Response	19
5	FIE	RE FIGHTING PROCEDURE	20



Appendices

Appendix A Waste Storage Details

Figures

Figure 1	Permit Boundary Plan	Sgl-LITH-PER-0625-01
Figure 2	Site Location Plan	Sgl-LITH-LOC-0625-01
Figure 3	Site Layout Plan	Sgl-LITH-LAY-0625-01
Figure 4	Receptor Plan	Sgl-LITH-REC-0625-01
Figure 5	CCTV Location	Sgl-LITH-CCTV-0625-01
Figure 6	Emergency Access Route Plan	Sgl-LITH-EAR-0625-01
Figure 7	Proposed Site Drainage	Sgl-LITH-DRN-0625-01



1 INTRODUCTION

- 1.1.1 This document details the Fire Prevention Plan (FPP) for Sidegate Lane Battery Recycling Facility (the site) located on Sidegate Lane in Wellingborough, Northamptonshire (NGR SP 91464 70336). The permit boundary and site location are shown in Figure 1 and 2 respectively.
- 1.1.2 This document is written to support an application to vary the environmental permit (reference EPR/XP3092NX) to allow the operation of a battery recycling facility. The site will retain the ability to operate as a OWC and TS activities, however the site will operate solely as a battery recycling facility. Therefore, this document only considers aspects of the battery recycling facility.
- 1.1.3 As part of the battery recycling operation, lithium-ion batteries and lithium-ion battery materials will be stored and treated on site. Lithium-ion battery 'materials' include lithium-ion battery scrap materials sourced from battery manufacturing and pre-shredded lithium-ion batteries from other permitted waste operations. The treatment operation will consist of battery discharge, dismantling, shredding, and subsequent separation and sorting of shredder outputs to send for further recovery. Lithium-ion batteries may also be bulked for transfer only. Pre-shredded lithium-ion batteries will be subject to separation and sorting only. Batteries of other chemistries and fluorescent tubes will be accepted for storage and transfer only.
- 1.1.4 Treatment is undertaken within an enclosed building with roller-shutter doors. Lithium-ion batteries and lithium-ion battery materials are stored in enclosed ISO containers.
- 1.1.5 An existing Fire Risk Assessment covering the site operation is already in place. It will be reviewed prior to commencement of the battery treatment operation and at regular intervals not exceeding 12 months. The Fire Risk Assessment is included within the SUEZ electronic Risk Assessment database.
- 1.1.6 An appropriate person will review this Fire Prevention Plan at regular intervals and on at least an annual basis, following any of the events below:
 - testing of the plan to ensure the plan works and staff understand the procedures to be undertaken to prevent a fire occurring and the procedure to be undertaken in the event of a fire
 - an incident
 - change in legislation or formal guidance
 - · prior to a change in activity on site
- 1.1.7 In addition, the requirements of the Fire Prevention Plan will be communicated to site operational staff on at least an annual basis via toolbox talks. Yearly refresher toolbox talks will ensure that the requirements of the Fire Prevention Plan are reinforced.



2 RISK OF FIRE

2.1 Assessing the Risk of Fire

- 2.1.1 The risk assessment to identify potential events or failures that may lead to an environmental impact as a result of a waste related fire at site is included in the Environmental Risk Assessment (document reference 1.3). The risk assessment provides details of the following: the hazard, the pathways and receptors, the probability of occurrence, the consequences or impacts and the measures that will be taken to manage the risk, and an evaluation of the mitigated risk.
- 2.1.2 Further detail on the hazard, in terms of the materials received stored and/or treated on the site, the volumes of materials received and the potential causes of fires are discussed further in this section of the Fire Prevention Plan. The sensitive receptors and the consequence of a fire on those receptors are also discussed below.

2.2 Combustible Materials on Site

- 2.2.1 The combustible materials which may be received and stored at the site include:
 - Lithium-ion batteries
 - · Lithium-ion battery materials from battery manufacture
 - Pre-shredded lithium-ion batteries from other waste operations
 - Aluminium
 - Copper bars
 - Cables
 - Hard plastics
 - · Case metal and plastics
 - Copper and Aluminium (0.5 3mm fraction)
 - Black mass (250 500µm fraction)
 - Black mass (0 250µm fraction)
 - Compacted plastic outputs
 - Batteries (non lithium-ion)
 - Fluorescent tubes
- 2.2.2 Managing waste storage is a key factor, not only in preventing fires, but in mitigating the impact, should a fire break out.
- 2.2.3 Appendix A details the volume, storage time and storage method for each waste type at site.

2.3 Waste storage

2.3.1 Lithium-ion batteries and lithium-ion battery materials will be stored in temperature-controlled ISO containers separately from all other battery types.



- 2.3.2 Batteries of other chemistries (i.e. lead batteries, Ni-Cd batteries, mercury-containing batteries, alkaline batteries) and fluorescent tubes will be stored in dedicated sealed containers.
- 2.3.3 Aluminium battery trays from disassembly are stored in the northern yard in 40 yard ROROs.
- 2.3.4 Other outputs from dismantling (hard plastics, copper bus bars and cabling) are stored in separate containers inside the main building. Once full, these are covered and moved to the northern external yard.
- 2.3.5 Outputs from density separation (case metal and plastics) will be collected and stored in separate flexible intermediate bulk containers (FIBCs) under the treatment plant. Once full, the FIBCs will be stored within an ISO container in the northern external yard.
- 2.3.6 SRV shaker/ screen outputs (i.e. powdered black mass, copper and aluminium and compacted plastic outputs) will be collected and stored in UN approved packaging under the treatment plant. Once full, these will be stored within an ISO container in the northern external yard.
- 2.3.7 ISO containers for lithium-ion battery storage will be stored in pairs. Each pair of ISO containers will be separated by a 6m gap or a partition and concrete impermeable surfacing to act as a fire break and prevent the spread of fire from a pair of containers to another.
- 2.3.8 ISO containers used to store outputs from the process will be separated by a 6m gap and concrete impermeable surfacing to act as a fire break and prevent the spread of fire.
- 2.3.9 Other materials stored on site will be separated by a 6m gap or a partition and concrete impermeable surfacing to act as a fire break and prevent the spread of fire from one area to another.
- 2.3.10 An indicative site layout plan showing the proposed location of the waste storage areas and containers are shown in Figure 3.
- 2.3.11 Further detail relating to the volume, storage time and storage method of each waste type is provided in Appendix A.

2.4 Hazardous materials storage

- 2.4.1 Lithium-ion batteries accepted for treatment are classified as non-hazardous waste, however some lithium-ion battery scrap materials sourced from battery manufacturing and pre-shredded lithium-ion batteries from other waste operations that will be accepted for treatment are classified as hazardous waste. These materials will be stored separately from all other waste in temperature-controlled ISO containers.
- 2.4.2 Black mass and copper and aluminium residues resulting from the treatment process are classified as hazardous waste. These materials are stored in sealed UN approved containers inside enclosed ISO container, as described above (section 2.3).
- 2.4.3 Hazardous batteries (lead batteries, Ni-Cd batteries, alkaline batteries) are accepted on site for storage and transfer only. These are stored in dedicated sealed containers



- 2.4.4 Cables from battery pack dismantling have the potential to contain POPs. These are stored in covered containers in the northern yard area.
- 2.4.5 A bunded tank for the storage of diesel is in the waste yard and is indicated on the site layout drawing provided in Figure 3. The fuel tank is unlikely to be used as the mobile plant used at the facility are electric.
- 2.4.6 Small amount of oil and hydraulic fluids are stored within the site building in appropriate containers for maintenance of site plant.

2.5 Cause of Fire

- 2.5.1 The potential causes of fire on the site have been considered and include the following:
 - arson or vandalism
 - lithium battery thermal runaway
 - self-combustion of received and processed waste materials (e.g. chemical oxidation, microbial decomposition),
 - Cooking appliances in the welfare facilities
 - plant or equipment failure
 - electrical faults
 - naked lights
 - · discarded smoking materials
 - hot works, e.g. welding, cutting (will be included within contractor's risk assessments as this type of work is not undertaken by site staff)
 - hot exhausts
 - fuel deliveries and refuelling plant
 - build up of dusts
 - damaged/exposed electrical cables
 - · neighbouring sites activities
 - incompatible wastes
 - ignited materials received at the site
 - · heat generated by friction on mobile plant
- 2.5.2 Any of the causes detailed above has the potential to ignite waste materials on site. The consequences of a fire are discussed below with mitigation measures detailed in a further section.

2.6 Impacts of a Fire

- 2.6.1 The effects of a fire may be both immediate and long term. The potential impacts of a fire have been considered and are summarized below:
 - thermal radiation harming nearby properties and residents leading to fire spread
 - · creation of hazardous waste by the fire and impacts of firefighting



- explosions and projectiles harming sensitive receptors and spreading the fire to unaffected areas
- fire water run-off transporting pollutants to surface water and groundwater
- transport disruption resulting from road and rail closures
- nuisance from smoke, odour and particulates
- · threat to life and property
- detriment of local amenity
- 2.6.2 The general management actions to mitigate the impact of a fire on sensitive receptors are detailed in Sections 3 and 4 of this Fire Prevention Plan.

2.7 Sensitive Receptors

2.7.1 Sensitive receptors within 1km of the site that may potentially be at risk from a fire have been identified within Table 1 and are shown in drawing in Figure 4.

Table 1 - Sensitive receptors

No.	Receptor Category		Distance (m)	Direction from site
Recep	tors within 1km			
1	Secondary A aquifer (Bedrock)	Groundwater	0	N/A
2	Pond and stream flowing south into River Ise	Surface Water	320	West
3	Stream issuing south into River Ise	Surface Water	270	South
4	Finedonhill Farm pond	Surface Water	600	South
5	River Ise	Surface Water	890	Southwest
6	Ryebury Farm	Residential	200	Northwest
7	Sidegate Works	Residential / small industrial	400	Southwest
8	Finedonhill Farm	Residential/ agricultural	570	South
9	Hillside Farm/ Hillside Farm Nurseries	Residential/ agricultural/ commercial	860	Northwest
10	Finedon Allotments	Leisure/agricultural	1,000	North
11	Top Lodge Farm	Residential/ agricultural	1,000	Southeast
12	Sidegate lane landfill	Industrial	10	East
13	Industrial buildings on Sidegate Lane	Industrial	250	Southeast
14	St Modwen Park	Industrial/ commercial	570	Southwest



No.	Receptor	Category	Distance (m)	Direction from site		
15	Ise Valley Industrial Estate	Industrial	930	Southwest		
16	Priority Habitat Inventory - Deciduous Woodland near Ryebury Hill (A510)	Habitat	100	North		
17	Priority Habitat Inventory - Traditional Orchard on Wellingborough Road	Habitat	490	Southwest		
18	Priority Habitat Inventory - Deciduous Woodland on Sidegate Lane	Habitat	480	Southeast		
19	Priority Habitat Inventory - Deciduous Woodland near Top Lodge Farm	Habitat	750	East		
20	Protected Species near River Ise - European Eel Anguilla anguilla, Bullhead Cottus gobio and Brown/Sea Trout Salmo trutta	Habitat	860	Southwest		
21	Finedon Top Lodge Quarry	SSSI (Geological) and Local Wildlife Site	990	Southeast		
Recep	Receptors within 10km (emissions to air only)					
22	Finedon Quarry and Disused Railway	Local Wildlife Site	1,300	Northwest		
23	White Lodge Quarry	Local Wildlife Site	1,750	East		
24	Upper Nene Valley Gravel Pits	Special Protection Area, Ramsar, SSSI	1,980	Southeast		
25	Irthlingborough Grange Gravel Pits	Local Wildlife Site	1,950	Southeast		

2.8 Wind Direction

2.8.1 The data obtained for Sidegate Lane Battery Recycling Facility indicates that the prevailing wind direction is from the southwest. A compass wind rose showing the prevailing wind direction is included in Figure 4.



3 PREVENTATIVE MEASURES

- 3.1 SUEZ Policies and Procedures
- 3.1.1 SUEZ Integrated Management System (IMS) relating to Emergency Preparedness and Response will be followed in the event of a fire or explosion.
- 3.1.2 In addition the following policies and procedures, as detailed in the IMS, are also relevant:
 - · Accident Investigation and Reporting
 - Site Inspection, Audit and Reporting
 - Managing Non-Conformance, Corrective & Preventive Action
 - · Control of Records
 - Audits
 - Duty of Care
 - Surface Water Management
 - Oil and Fuel Storage
- 3.1.3 One of the principle objectives of the IMS is to ensure the efficient and safe operation of the site through the implementation of procedures that ensure defined staff roles and responsibilities supported by provision of appropriate training.
- 3.1.4 Key procedures that apply to all SUEZ sites include training all staff, contractors and visitors in correct health and safety and fire prevention procedures and the implementation of a regular maintenance and inspection programme for all areas of site and equipment to ensure good housekeeping and effective operation of machinery.
- 3.1.5 All site staff along with site visitors and contractors are required to wear appropriate Personal Protective Equipment.
- 3.2 Controls to Manage Common Causes of Fire

Arson

- 3.2.1 Site security to prevent arson includes security fencing and 24/7 recorded CCTV. CCTV monitoring systems are installed in various strategic locations around the site as indicated on Figure 5.
- 3.2.2 The site boundary is secured by the provision of security fencing, which is checked regularly for defects.

Plant and equipment

3.2.3 Faults within a vehicle or item of plant have potential to cause fire so a regular plant and machinery preventative maintenance programme is in place to identify and remedy potential issues at an early stage.



- 3.2.4 All machinery/equipment is subject to routine cleaning, servicing in line with manufacturers guidance and daily checks/defect reporting. The daily check includes identification of leaks.
- 3.2.5 Maintenance works on the lithium battery recycling plant will be carried out as and when required by a trained, authorised, and competent member of staff and as per manufacturer's instructions.
- 3.2.6 All site vehicles are fitted with fire extinguishers and dust filters. Vehicles will have high level exhausts fitted.
- 3.2.7 It is anticipated that vehicles and mobile plants will be stored at a safe distance (6m) from waste stockpiles, fuel tank and quarantine area when not in use as indicated on Figure 3. Mobile plant used on site will be electric.
- 3.2.8 Mobile plant will be maintained in accordance with the Mobile Plant procedures as outlined in SUEZ Policies and Procedures. This includes daily vehicle pre-use inspection checks, reporting of all defects to site management and regular clearing of detritus from around the machine. The machine will be subject to regular service inspections in accordance with manufacturer's recommendations which will include maintenance of the exhaust and cleaning if required. Daily inspections of the exhaust will check for blockages or excess build-up of material. Site cleaning regimes to reduce litter will be directed through Standard Operating Procedures detailing the duration and frequency of cleaning activities, the equipment required to clean and visual aids depicting how areas should look following cleaning activity.
- 3.2.9 Plant and machinery will not be fitted with an infra red detection system as it is not deemed as required due to the low risk. However the mobile plant on site will conform to the SUEZ essential safety requirements as outlined in Policies and Procedures. This details forklift trucks to have a fire suppression system using a twin agent with engine isolation and in cab fire extinguisher. In addition the mobile plant will be parked away from wastes when not in use.

Electrical Equipment

- 3.2.10 Fixed electrical installations will be installed, inspected, tested and maintained by a suitably trained and qualified persons. Contractors undertaking the work must be enrolled on the National Inspection Council for Electrical Installation Contacting (NICEIC) register of Approved Contractors or similar contractor from SUEZ Approved supplier list. Inspection and testing shall be carried out at minimum periods of three years, or following:
 - any substantial alteration to the electrical installation,
 - any incident that might have cause damage to the electrical installation
 - At periods stipulated by an approved contactor issuing a test reports
- 3.2.11 Following every inspections and testing, defects should be rectified as soon as reasonable practicable.
- 3.2.12 In addition fixed electrical equipment will only be installed if it is fit for purpose and compatible with the electrical installation and its capacity. All fixed electrical equipment will be used, inspected, tested and serviced in line with manufacturers' recommendations.



- 3.2.13 The electrical installations are tested by a competent person at intervals of no more than three years, and any defects rectified as soon as reasonably practicable.
- 3.2.14 All portable items of electrical equipment are listed in a register and tested by a competent person at least annually. Items must not be connected to the electrical supply that cannot be shown to have been tested within the previous 12 months.
- 3.2.15 Electrical sockets must not be overloaded. Adapter plugs are prohibited on site.

Discarded smoking materials

- 3.2.16 No wastes will be burned within the boundaries of the site.
- 3.2.17 Smoking on site is only permitted in designated areas. Outdoor smoking areas adjacent to or close to site welfare and office buildings are provided and suitably signed, with a safe means of extinguishing and containing cigarette butts.

Hot works

3.2.18 Contractors required to undertake hot works will be required to provide risk assessments and follow approved safe working procedures. Any hot works will be subject to the Permit to Work procedure and will be adequately supervised. In the event of hot works on site the initial fire watch will be undertaken two hours after hot works have been completed. Following the completion of hot works, the end of the day fire watch will pay particular attention to the area where hot works were undertaken.

Industrial heaters

3.2.19 An industrial radiant heater will be located near the disassembly stations, which will not be at risk of causing ignition of combustible material. The heater will be used, inspected, tested and serviced in line with manufacturers' recommendations and SUEZ's procedures.

Hot exhausts

- 3.2.20 SUEZ employees are constantly present within the site during operational hours and so a fire watch will be ongoing during the working day. A fire watch will be implemented at the end of the working day to reduce the risk of combustion as dust can settle onto hot exhaust and engine parts.
- 3.2.21 The fire watch is a visual check to detect any signs of fire in particular caused by dust settling on hot exhausts and engine/machinery parts.

Ignition sources

3.2.22 Any sources of ignition including for example heating pipes, naked flames, light bulbs, spaces heaters etc. will be kept 6 metres away or will be separated by a fire wall from any combustible and flammable waste on site.



Leaks and spillages of oils and fuels

- 3.2.23 Faults within a vehicle or item of plant have potential to cause fire so a regular plant and machinery maintenance program is in place to identify and remedy potential issues at an early stage.
- 3.2.24 All machinery/equipment is subject to routine cleaning, servicing in line with manufacturers guidance and daily checks/defect reporting. The daily check includes identification of leaks, and where identified, is cleaned up according to spillage procedure as detailed in the SUEZ IMS Emergency Preparedness and Response.
- 3.2.25 Emergency spillage procedures are in place at the site. Spills kits are kept on site in key locations. Staff are briefed and trained on spillage procedures and can use spill kits in the event of a spill or leak from any plant or equipment on site.
 - Build up of loose combustible waste, dust and fluff
- 3.2.26 Regular preventative cleaning will be undertaken by site staff to minimise the generation and build up of dust and litter on site.
- 3.2.27 Daily end of shift clean-up regime is undertaken within the building.
- 3.2.28 Daily check sheets include a requirement for site staff to undertake visual dust qualitative monitoring; if perceived to be excessive the action causing the emission will be halted and remedial measures implemented.
 - Waste acceptance/reactions between wastes
- 3.2.29 Waste acceptance procedures will comply with the site permit, and associated environmental legislation. Only waste types detailed in the permit will be accepted at the site.
- 3.2.30 The documentation accompanying the load shall be checked at the weighbridge, and shall include, but not be limited to the Carriers Certificate of Registration and Duty of Care Waste Transfer Note.
- 3.2.31 The information recorded in respect of each load as provided by the Waste Transfer Note will be:
 - Ticket Number
 - Vehicle Registration Number and Type
 - Time and date (or date range) of transfer
 - Waste description and quantities including all EWC codes
 - Container type
 - Where the transfer(s) took place
 - Category of Transferor and Transferee (i.e. producer, WDA, registered carrier, permit holder, EPR etc.)
 - Names and addresses of all parties involved in the transfer and their roles (i.e. producer, carrier, disposer)
 - Details of relevant permit/exemptions
 - Signatures of all parties involved



- 3.2.32 A battery risk assessment form is completed as part of the initial sales enquiry process. Where required, SUEZ undertake further checks, obtain additional information and undertake an inspection prior to transport to site.
- 3.2.33 During transport lithium-ion batteries are packed in accordance with the Carriage of Dangerous Goods and use of Transportable Pressure Equipment Regulations 2009 (ADR 2025).
- 3.2.34 Prior to collection all batteries are checked to ensure they are as described and for elevated temperatures; units that pass inspection are then packaged in full compliance with CDGR 2006 (ADR 2025) including UN approved shipping containers and where necessary within vermiculite (fire retardant packaging material) to protect them during transit. Units that are not as described or displaying risks such as elevated temperatures are not taken awaiting further risk mitigation/assessment.
- 3.2.35 The vehicles arriving on site containing waste will be directed (via signage) around the site and kept separate from site traffic.
- 3.2.36 All waste will be weighed on receipt via the weighbridge (or more sensitive scales where batteries arrive in small volumes). Vehicles will be unloaded either within the site building or the external yard as deemed appropriate. All loads will be visually inspected on site as the waste is offloaded from the delivering vehicle. The batteries will be logged and tracked from acceptance through to which treatment output container they are stored in for onward recovery.
- 3.2.37 Upon arrival at the site, lithium-ion batteries are visually checked to ensure they are as described during pre-acceptance checks, and scanned with a handheld thermal imaging camera. The results will be recorded in the site diary.
- 3.2.38 Should any load, either upon entry to the site, or upon offloading, be discovered to contain waste types not permitted at the site or contain incompatible wastes the load will be rejected and removed from site by the delivering vehicle. A load rejection form will be completed in all cases and a record kept in the site diary and the customer informed.
- 3.2.39 If wastes not permitted by the site permit are discovered amongst a load after unloading, the waste will be isolated to prevent the processing of this waste and removed from site as soon as possible.
 - Hot Loads and Batteries of Concern
- 3.2.40 The site handles lithium-ion batteries which are a well-understood fire risk. The site therefore operates a number of measures to monitor and manage batteries at risk of thermal runaway, particularly those exhibiting elevated temperature or damaged/ defective batteries.
- 3.2.41 The site benefits from a quarantine area and an emergency quench tank which can be used in the event that a hot or burning materials are received on site. This area may also be used in the event of a fire on site.
- 3.2.42 Upon arrival at the battery recycling facility, lithium-ion batteries are visually checked to ensure they are as described during pre-acceptance checks, and scanned with a handheld thermal imaging



- camera. There are a number of routes available on site if a battery arrives on site that is not in the anticipated condition or exceeds ambient temperatures.
- 3.2.43 Where safe, batteries of concern can be immediately discharged with regenerative discharge equipment within the container located outside the building.
- 3.2.44 Where safe to handle, batteries that cannot be discharged with regenerative discharge equipment (i.e. damaged and defective batteries) will be quarantined before being sent to the electrochemical discharge area for submersion in a salt solution. Discharge by submersion takes up to 4 weeks, dependant on battery pack size and state of charge.
- 3.2.45 There is also an emergency quench tank in close proximity to the site building for immediate emersion or batteries that are exhibiting signs of thermal runaway.
- 3.2.46 Batteries not safe to handle will be subject to dynamic risk assessment in accordance with the site's SOPs, which could include actions like deploying appropriate fire extinguishers, covering by a fire blanket if safe to do so, or evacuation of the affected area. The emergency services will be called as appropriate.
- 3.2.47 In the event a hot load or batteries of concern are received, the incident and time of discovery will be recorded in the site diary.

3.3 Controls to Prevent Self-Combustion of Waste

Waste Storage Procedures

- 3.3.1 Managing storage at the site is a key consideration in reducing the risk of fire. The waste types, storage detail, maximum volumes/stockpile size, storage duration and location on site are detailed in Appendix A.
- 3.3.2 Batteries and battery materials are stored with the aim of ensuring that different types of waste are stored separately to ensure they do not contaminate each other, they can be reused or recovered more easily, and transfer notes can be completed correctly. All wastes delivered and accepted to the site are directed to specific areas for storage (or treatment prior to storage). There will be no mixing of different waste types.
- 3.3.3 All wastes on site are stored safely and securely using suitable buildings and/or containers. Where wastes are stored in containers they are labelled correctly and covers are utilised where possible to prevent litter and rainfall infiltration and the potential for contaminated surface water run-off.
- 3.3.4 Storage of waste will be managed to minimise the volume of waste stored and limit the storage time as far as practicably possible. No waste types are stored on site for longer than 6 months.
- 3.3.5 Lithium-ion batteries will be stored separately from all other batteries on site in temperature-controlled ISO containers equipped with a fire detection system and will be capable of being flooded with water should thermal runway occur. Containers will be vented and fitted with temperature control units that



- will maintain a safe temperature for battery storage. Manual thermal imaging checks are undertaken twice a day. Lithium-ion battery materials will also be stored in ISO containers.
- 3.3.6 All other wastes will be stored as described in section 2.3 of this FPP.
- 3.3.7 Clear signage reinforces the safe storage of materials and use of ignition sources.
- 3.3.8 The key control at site to ensure wastes are stored for the minimum timescales is the use of digital quick response (QR) codes to log and track all batteries from acceptance to dispatch. Materials are handled and removed from site in order of receipt ensuring they do not exceed their maximum storage times.

Monitoring and Controlling of Temperature

- 3.3.9 Twice-daily checks are made of waste in storage to identify any potential issues that have potential to cause a fire, including temperature checks of batteries with a handheld thermal imaging camera. The results of thermal imaging checks are recorded in the site diary.
- 3.3.10 In the event that surface temperatures are indicated to exceed ambient temperature or any other signs of potential thermal runaway are detected, a dynamic risk assessment will be conducted to either quarantine the affected waste/battery in the designated quarantine area or place it into the quenching tank situated outside the building.

Waste Bale Storage

3.3.11 There is no storage of waste in bales at site.

3.4 Measures to Prevent Fire Spread

3.4.1 All waste will be stored on an impermeable surface. The non-flammable nature of the impermeable surface will act as a firebreak, which should significantly reduce the risk of a fire spreading.

Storage within Containers

- 3.4.2 Lithium-ion batteries and lithium-ion battery materials will be stored in six ISO containers in the northern yard of the site (refer to Figure 3). The six containers will be arranged in three pairs. Each pair of ISO container will be separated by a 6m gap and concrete impermeable surface to act as a fire break and prevent the spread of fire from one pair of containers to another. The ISO containers will be fitted with inlets which will allow the containers to be sealed and flooded with water in the event of a fire, either by the Fire and Rescue Service or a trained competent site operative, if safe.
- 3.4.3 Outputs from the process will be stored in ISO containers in the northern yard of the site and will be separated by a minimum distance of 6 metres, as shown in Figure 3. These separation distances are maintained at all times to reduce the probability of fire spreading.
- 3.4.4 Other waste stored in containers in the northern yard area are separated by a 6m gap and accessible on all sides to allow any fires to be extinguished.



Storage within the Existing Building

- 3.4.5 Outputs from dismantling (hard plastics, copper bus bars and cabling) are stored in separate containers (1m³ each) inside the main building. Once full, these are covered and moved to the northern external yard.
- 3.4.6 Waste outputs from the treatment process are stored in the building and are limited to small volumes of waste in partially filled containers (each <1m³).
- 3.4.7 Outputs from the zig-zag density separator (case metal and plastics) will be collected and stored in separate FIBC. Outputs from the SRV shaker/ screen (i.e. black mass, different copper and aluminium fractions and compacted plastic) will be collected and stored in UN approved packaging. Once full, these will be stored within an ISO container in the northern external yard.

Quarantine Area

- 3.4.8 A quarantine area is retained at all times for the isolation of burning material (provided it is safe to do so) to extinguish and control fire spread. It can also be used to move piles of non-burning material (adjacent to a fire) to prevent spread.
- 3.4.9 The quarantine area comprises a three-sided legio block bay which can be used for the isolation of hot loads, such as batteries experiencing thermal runaway. A quench tank is also located outside of the site building which batteries can be placed into directly to immediately deluge the hot load.
- 3.4.10 The location and size of the quarantine area and quench tank is provided in Figure 3.
- 3.4.11 The quarantine area has an approximate total volume of 300m³ so meets the EA's guidance of being able to accommodate 50% of the volume of the largest container stored at the site, that is 33m³ (ISO containers at the site are stored in pairs 6m apart from the next pairs and each store a waste volume of c.33m³).
- 3.4.12 The site also benefits from a large yard area that can be utilised for the establishment of temporary quarantine areas with a 6m clearance from other wastes, buildings and the permit boundary, as needed.
- 3.4.13 Should burning waste material or container be identified on site, this would be moved to the quarantine or quench tank if safe to do so. Alternatively, non-burning waste could also be removed from the vicinity of burning waste and where possible moved to the designated or temporary guarantine area.



4 DETECTION AND SUPPRESSION MEASURES

4.1 Fire Detection

Fire Alarm System

- 4.1.1 The site is equipped with a fire detection and alarm control panel system that has been designed in general accordance with BS 5839-1: 2017.
- 4.1.2 ISO containers for the storage of batteries are also fitted with fire alarm system.
- 4.1.3 The fire alarm system will be regularly checked by the Technically Competent Manager (or other designated person) via a visual inspection of the control panel. Visual checks will be recorded on the site Daily Checklist. Any fault must be reported immediately.
- 4.1.4 The fire alarm system will be tested weekly from a different alarm point on the same day and time or at a frequency in line with the manufacturer's recommendations, by a designated person. This will be recorded in the Fire Logbook.
- 4.1.5 The fire alarm system will be inspected and maintained by a competent person every year in line with the service contract. Inspection and maintenance records will be kept in the Fire Logbook.
- 4.1.6 Fire alarm points must be kept clear, visible and correctly labelled at all times.
- 4.1.7 The results of the alarm testing and servicing will be held in the Fire Logbook.

Flame detection and thermal imaging

- 4.1.8 Batteries are subject to temperature checks with a handheld thermal imaging camera during waste acceptance, and twice-daily while in storage. The results of thermal imaging checks are recorded.
- 4.1.9 Thermal imaging camera is used within the site building. The system is set to recognize ambient temperature and monitor increment of temperature toward the trigger temperature.
- 4.1.10 During operational hours, the thermal imaging camera is monitored on-site, and out-of-hours it is monitored offsite by alternative SUEZ site (Malpass Farm). TMIPS security services also monitor the camera out-of-hours.
- 4.1.11 In the event of detection of an increase in temperature within the site, an automated alarm is raised onsite (during operational hours) or offsite (out-of-hours) and the Site Manager (or other designated person) is notified. A prescribed emergency response procedure is escalated to reduce the risk of a fire.
- 4.1.12 The shredder hopper, product conveyor and inlet ducting before the dust collector are all fitted with a spark detection and fire extinguishing (water deluge) system. Further information is provided in Section 4.3.



4.2 Fire Suppression

Fire Extinguishers

- 4.2.1 There will be a number of portable extinguishers placed at key strategic locations around the site. The number of portable extinguishers needed at the site and their locations will be assessed by a competent contractor prior operation starting. A check of the fire extinguishers (discharged/full, service in date etc) is undertaken as part of the site weekly checks. All fire extinguishers are subject to annual testing by an approved accredited supplier.
- 4.2.2 All fire extinguishers conform to British Standard EN 3 and are located on wall brackets with the base of the extinguisher at a suitable height, or they are sited in permanent fire points. The extinguishers are of a suitable size and weight for use by site staff.

Fire Suppression System

- 4.2.3 A Helios fire suppression system is fitted to the shredder and its inlet conveyor belt, which includes spark detection and a misting system.
- 4.2.4 Whenever a spark or ember is detected inside the shredder hopper or post-shred exit conveyor, it is immediately automatically extinguished with a short bursts of water mist and an audio alarm is sounded to the operator. The system automatically stops the intermittent misting when the fire has been extinguished, so the process can continue uninterrupted without manual reset.
- 4.2.5 Additionally, the shredder is fitted with an active air extraction system which negatively extracts air from the plant and workshop to a Local Exhaust Vent System (LEV) de-dust stack and carbon filter. The LEV is fitted with an 'ATEXON® VR18Z Spark Detection and Extinguishing System' at the inlet ducting to the dust extraction. The system works similarly to the Helios system to extinguish fires as soon as a spark or ember is detected.

Fire Hydrants and Lagoon

- 4.2.6 According to Northamptonshire Fire Service, the nearest fire hydrant is located on Sidegate Lane, approximately 350m southeast of the site boundary. A second hydrant is located approximately 450m southeast of the site boundary on Wellingborough road (A510).
- 4.2.7 The site benefits from a surface water lagoon which is readily accessible for the need of fire suppression water. The lagoon is engineered to retain surface water to a capacity of 500m³. Water from the surface water lagoon will be used to flood ISO containers where a fire has been detected, if safe to do so.

4.3 Fire Fighting Techniques

4.3.1 Managing waste storage is a key factor, not only in preventing fires, but in mitigating the impact, should a fire break out.



- 4.3.2 Providing access to the site in the event of a fire is a key consideration in containing a fire. Contact details in the event of an emergency are clearly displayed on site.
- 4.3.3 The emergency access routes to waste storage and quarantine area in the event of a fire are shown in Figure 6.
- 4.3.4 The firefighting procedure detailed in Section 5 must be adhered to if a fire should break out on site.

4.4 Water Supply

- 4.4.1 The water supply for firefighting will primarily be provided from the existing public hydrants and the site's surface water lagoon. The surface water lagoon on site holds a 500,000 litre capacity. Fire hoses fed from the pond will be connected directly to the ISO containers, ready to deploy in the event of a fire.
- 4.4.2 The surface water pond will be maintained and its level will be checked on a weekly basis or immediately after being used following an incident on site. This will be undertaken by the site operation team and the findings will be recorded as part of the site inspections. The surface water pond is fitted with a gauge and the site operation team will ensure that the gauge level will not go below the red line which will ensure a minimum of 200m³ of water supply. The surface water pond will be topped up with mains supplied water in the event that the gauge level is below the red line.
- 4.4.3 Anglian Water have stated that the fire hydrants within the proximity of the site are each capable of delivering 360,000 litres over a 3-hour period.

4.5 Fire Water Management

Fire water volume

- 4.5.1 The Environment Agency Fire Prevention Plan requirements state that for a 300m³ pile of waste, 2,000 litres per minute are required for a minimum of 3 hours.
- 4.5.2 The maximum volume of waste to be stored in one place in the site is within the ISO container storage area in the northern external yard. Each of these containers will hold around 33m³ of waste, and two containers may be stored together 6m apart from the next pair creating a maximum total volume of 66m³.
- 4.5.3 A maximum total volume of 66m³ of combustible waste equates to a water supply requirement of 440 litres per minute, and an overall 3-hour water supply of c.80,000 litres (c.80m³).

Fire Water Management

- 4.5.4 The site will benefit from an impermeable surface that will prevent infiltration of any spent fire water.
- 4.5.5 All areas of hardstanding, impermeable pavement, storage areas and containers are visually inspected at least weekly to ensure continuing integrity and fitness for purpose. The inspection and any necessary maintenance subsequently required will be recorded.



- 4.5.6 Based on the largest stockpile of 66m³ of combustible materials located at the site it is estimated that 80m³ of fire water will need to be stored in the worst case scenario.
- 4.5.7 Fire water is proposed to be retained on site. The northern yard area will drain to the surface water lagoon which has a volume of 500m³ so it has enough capacity to be able to retain spent firewater especially as surface water from the lagoon will be recirculated as it will be used to tackle the fire.
- 4.5.8 In addition the area located in front of the site building drains to a Class 1 full retention interceptor (9,000litres) through gullies and drains. The system is equipped with a penstock valve to allow any contamination to be contained. A proposed drainage plan is provided in Figure 7.
- 4.5.9 Firewater draining to the interceptor will be taken away via tanker to a suitable disposal place. Fire water containment will be supplemented with the use of booms and drain matts where necessary.
- 4.5.10 Containers storing waste within the site building will hold very small volumes (<1m³) therefore any firewater for extinguishing waste internally will be retained in the building using the roller-shutter doors.

4.6 Contingency Plan in the Event of a Fire

- 4.6.1 In the event of a major fire, the emergency procedures will be followed which includes notifying the Fire and Rescue Service and Environment Agency. A business continuity plan is in place and this includes contingency planning in the event of a major fire. In such an event, the following contingency action plan will be implemented:
 - Remove all staff off site to a safe place.
 - Depending upon the scale of the fire, operations on site will be suspended whilst the fire is extinguished.
 - Close site and await further instruction from the authorities.
 - Inform nearby residents and businesses. This will be done via SUEZ's communications team.
 - Direct waste deliveries/ customers to alternative facilities.
 - Any burnt waste or material will be segregated and contained on site, either on site or within containers. This will then be assessed and disposed of to a suitably permitted facility.
 - Any firewater produced as a result of fighting a fire would be contained on site. This would then be removed from site via tanker for subsequent processing at a suitably permitted facility.
 - The site will be cleaned prior to operations recommencing.
 - Internal plant checks may also be required prior to recommencement of operations.
- 4.6.2 Fire damaged wastes will be disposed of at a suitably permitted facility.
- 4.6.3 Operations will only recommence once the Fire Service have advised that it is safe to do so.



4.7 Out of hours Response

- 4.7.1 A fire pack is located in a box at the entrance of the site, clearly marked for the Fire Rescue Service (FRS) to access in the event of attending site in the absence of personnel on site. The pack will contain
 - Information relating to hazardous materials and their location
 - Drainage plans and location of interceptor shut-off valve and run off.
 - Contact details for key holders.
 - Instructions on how to manually override the roller shutter door mechanism.
- 4.7.2 In the event of an out of hours fire when there was no SUEZ presence at site, the FRS would enter site (by force if necessary) and will gain access to the site via the normal site access route. The FRS would follow the instructions to manually override the roller shutter door mechanism. The FRS can attend site in less than 10 min, and following a callout, site personnel would attend site as early as possible but within 30 min of receipt and acknowledgment of notification.



5 FIRE FIGHTING PROCEDURE

The following procedure must be adhered to if a fire should break out on the site.

ALL FIRES ON SITE MUST BE TREATED AS SERIOUS AND MUST BE REPORTED TO THE SITE SUPERVISOR AND/OR MANAGER AS SOON AS POSSIBLE.

- 5.1.1 It is considered unlikely that a fire will occur but if this should happen then any outbreak of fire will be regarded as an emergency and immediate action will be taken to extinguish the fire. No one should attempt to fight a fire unless they have received training in the use of fire extinguishers and then only if this can be done without risk.
- 5.1.2 If it is safe to do so, attempts should be made to extinguish a fire. This can be done by using site machinery to move any non-burnt material away from the smoulder or source of fire or using water, working from the edge of the fire inwards. Plant and machinery must never be driven into the centre of any fire; this will place both the driver and the machine in danger. If possible, extinguish the fire with a portable extinguisher or water.
- 5.1.3 Should the fire be successfully extinguished by this action, a check should be kept of the area to ensure that the fire does not re-ignite. The area should be vacated until it is obvious that there is no further danger of the fire restarting.
- 5.1.4 If the above action FAILS to extinguish the fire, prohibit all entry to the area, then summon emergency services immediately. Close the site to all members of the public. Any persons already on the site should leave. The Fire Service will be contacted to deal with major fire incidents. Site staff will not be deployed to deal with major fires.
- 5.1.5 Telephone the Fire and Rescue Service (FRS) Dial **999**. Give the exact details including the site address and telephone number.
- 5.1.6 Before the Fire and Rescue Service arrives staff will:
 - ensure operators of appropriate machinery are standing by in a safe location to help create fire breaks, under the direction of the FRS when they arrive
 - Appoint a clearly identified person to liaise with the emergency services on site. They should identify themselves to the FRS as soon as they arrive
 - ensure access routes are clear
 - use pollution control equipment to block drains and/or divert firewater to a containment area and/or operate any pollution control facilities, such as drain closure valves/or penstocks where safe to do so
- 5.1.7 On arrival the FRS should be met by the identified responsible person who must update them with relevant information that will assist them in dealing with a fire more effectively.



- 5.1.8 The designated Assembly Point is in the car park facing the operations yard on the other side of the exit route. All persons must wait at the Assembly point for further instructions. A Fire Warden will ensure that unauthorised persons do not enter the premises and that no one re-enters the site until given permission by a Fire Warden.
- 5.1.9 Upon the outbreak of fire, the receipt of waste at the site is to be suspended and not resumed until authorised by the Site Manager.
- 5.1.10 In the event of a major Fire, the Site Manager should notify the Environment Agency immediately by telephone on the incident hotline: 0800 80 70 60. The Agency must also then be informed in writing as soon as is practicable.
- 5.1.11 Communication with local businesses and residents identified in the sensitive receptor table (Table 1 Section 2.6) will be undertaken in the event of a fire to reduce any environmental damage and risks to human health associated with smoke and dust.
- 5.1.12 All incidents must be reported in the daybook and on SUEZ's EcoOnline system. The Environment and Industrial Risk (EIR) Manager should be informed so that in turn, full details of the event can be reported to the Environment Agency.
- 5.1.13 Site operations will not be recommenced until deemed safe to do so by the Local Fire Authority and the Environment Agency.



Appendices



Appendix A – Waste Storage Details



Sidegate Lane Battery Recycling Facility – Waste Storage Plan

APPENDIX A – WASTE STORAGE DETAILS

Waste Type	Location within Site	Storage Detail	Bay or Container Dimensions	Approximate Volume of Waste (m3)	Maximum Storage Time on Site	
External Storage (Northern External Yard)						
Lithium-ion batteries	ISO Container Storage Area (1-6)	Stored in UN approved packaging within 40ft ISO Containers	Container size: 12.2m (L) x 2.4m (W) x 2.4m (H) (66m³ internal volume)	33m³ (Maximum half full)	6 months	
Lithium-ion battery material	ISO Container Storage Area (1-6)	Stored in UN approved packaging within 40ft ISO Containers	Container size: 12.2m (L) x 2.4m (W) x 2.4m (H) (66m³ internal volume)	33m³ (Maximum half full)	6 months	
Pre-shredded lithium-ion battery	ISO Container Storage Area (1-6)	Sealed FIBCs within 40ft ISO Containers	Container size: 12.2m (L) x 2.4m (W) x 2.4m (H) (66m³ internal volume)	33m³ (Maximum half full)	6 months	
Aluminium (disassembled case metals)	External yard (Area 9)	40yd RORO Skip	Container size: 5.8m (L) x 2.4m (W) x 2.7m (H) 30m³ approximate volume	30m ³	6 months	
Hard plastics	IBC Container Storage area (Area 10)	Stored in Covered IBC	Container size: 1m (L) x 1m (W) x 1m (H)	1m³ x 12	6 months	
Copper bus bars	IBC Container Storage area (Area 10)	Stored in Covered IBCs	Container size: 1m (L) x 1m (W) x 1m (H)	1m³ x 12	6 months	
Cables/wiring	IBC Container Storage area (Area10)	Stored in Covered IBCs	Container size: 1m (L) x 1m (W) x 1m (H)	1m³ x 12	6 months	
Shredded Case metal and plastics (output from density separator)	ISO Container Storage Area (7and 8)	Stored in 1m ³ FIBCs within 40ft ISO Containers	Container size: 12.2m (L) x 2.4m (W) x 2.4m (H) (66m³ internal volume)	33m³ (Maximum half full)	6 months	
Black mass (0- 250µm fraction)	ISO Container Storage Area (7 and 8)	Stored in UN approved packaging (205l drums) within 40ft ISO Containers	Container size: 12.2m (L) x 2.4m (W) x 2.6m (H) (66m³ internal volume)	33m³ (Maximum half full)	6 months	
Black mass (250 - 500μm fraction)	ISO Container Storage Area (7 and 8)	Stored in UN approved packaging (205l drums) within 40ft ISO Containers	Container size: 12.2m (L) x 2.4m (W) x 2.6m (H) (66m³ internal volume)	33m³ (Maximum half full)	6 months	



Waste Type	Location within Site	Storage Detail	Bay or Container Dimensions	Approximate Volume of Waste (m3)	Maximum Storage Time on Site
Copper and aluminium (0.5 - 3mm fraction)	ISO Container Storage Area (7 and 8)	Stored in UN approved packaging (205l drums) within 40ft ISO Containers	Container size: 12.2m (L) x 2.4m (W) x 2.6m (H) (66m³ internal volume)	33m ³ (Maximum half full)	6 months
Compacted plastic outputs	ISO Container Storage Area (7 and 8)	Stored in FIBCs within 40ft ISO Containers	Container size: 12.2m (L) x 2.4m (W) x 2.6m (H) (66m³ internal volume)	33m ³ (Maximum half full)	6 months
Batteries (non lithium-ion)	External yard (Area 11)	Stored in battery container within 20ft ISO container	Container size: 5.9m (L) x 2.4m (W) x 2.6m (H) (33m³ internal volume)	Maximum 5m ³	6 months
Fluorescent tubes	External yard (Area 12)	Specialised container	Container size: 2.5m (L) x 1.2m (W) x 1.2m (H)	3.6m ³	6 Months
Internal Storage (Site Building)					
Hard plastics	Dismantling stations (Area 13)	Stored in IBCs	1m (L) x 1m (W) x 1m (H)	1m ³ x 5	6 months
Copper bus bars	Dismantling stations (Area 13)	Stored in IBCs	1m (L) x 1m (W) x 1m (H)	1m ³ x 5	6 months
Cables	Dismantling stations (Area 13)	Stored in IBCs	1m (L) x 1m (W) x 1m (H)	1m ³ x 5	6 months
Case metal and plastics	Density separator output area (Area 14)	Stored in FIBCs	1m (L) x 1m (W) x 1m (H)	1m³	6 months
Black mass (0 - 250µm fraction)	Shaker/screen output area (Area 15 & 16)	Stored in 205l drum	0.6m (L) x 0.6m (W) x 0.9m (H)	205l (0.2m³)	6 months
Black mass (250 - 500µm fraction)	Shaker/screen output area (Area 15)	Stored in 205l drum	0.6m (L) x 0.6m (W) x 0.9m (H)	205l (0.2m³)	6 months
Copper and aluminium (0.5 -3mm fraction)	Shaker/screen output area (Area 15)	Stored in 205l drum	0.6m (L) x 0.6m (W) x 0.9m (H)	205l (0.2m³)	6 months
Compacted plastic outputs	Shaker/screen output area (Area 15 & 16)	Stored in 205l drum	0.6m (L) x 0.6m (W) x 0.9m (H)	205l (0.2m³)	6 months



Figures



Figure 1 – Permit Boundary Plan

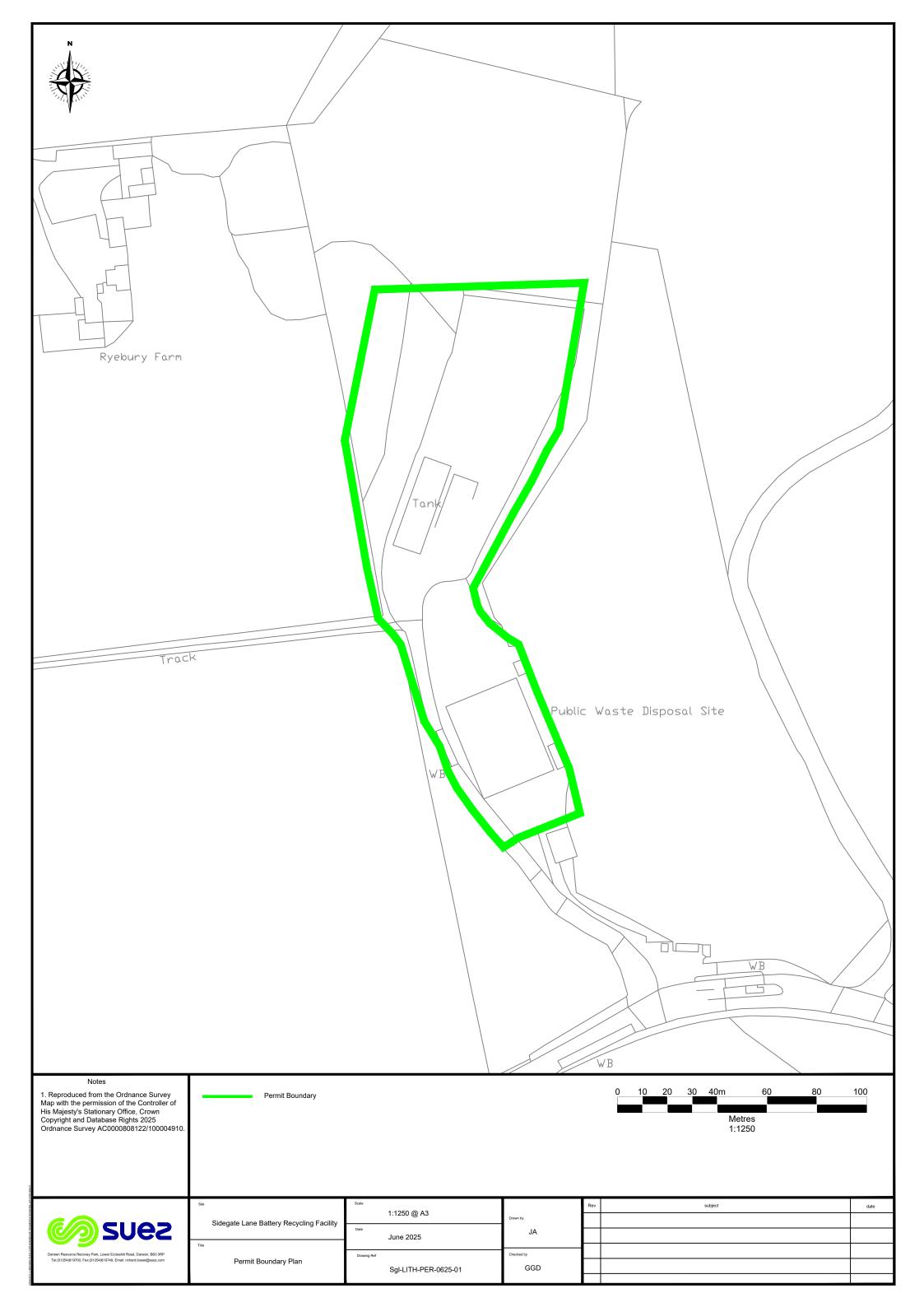




Figure 2 – Site Location Plan

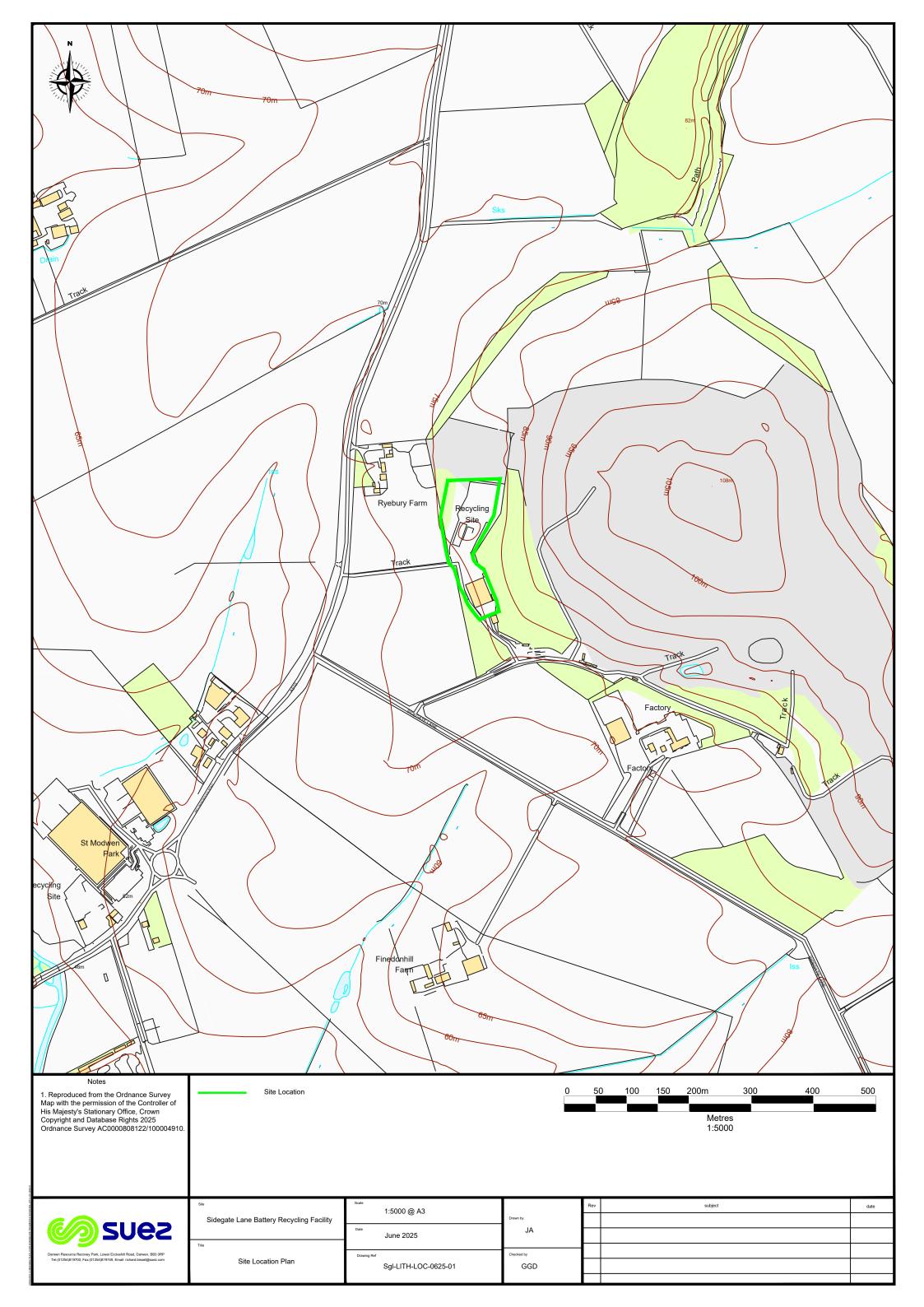




Figure 3 – Site Layout Plan

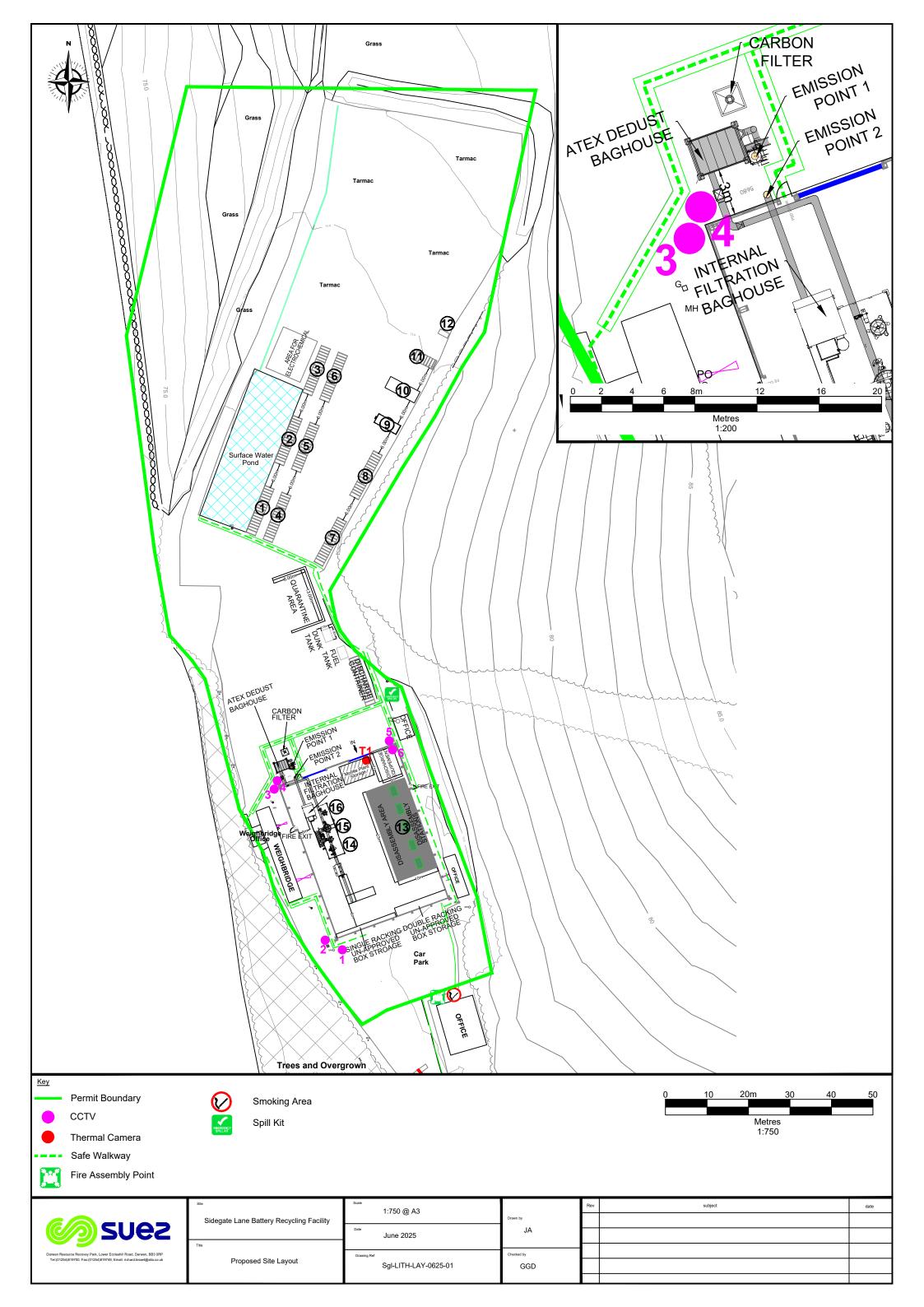




Figure 4 – Receptor Plan

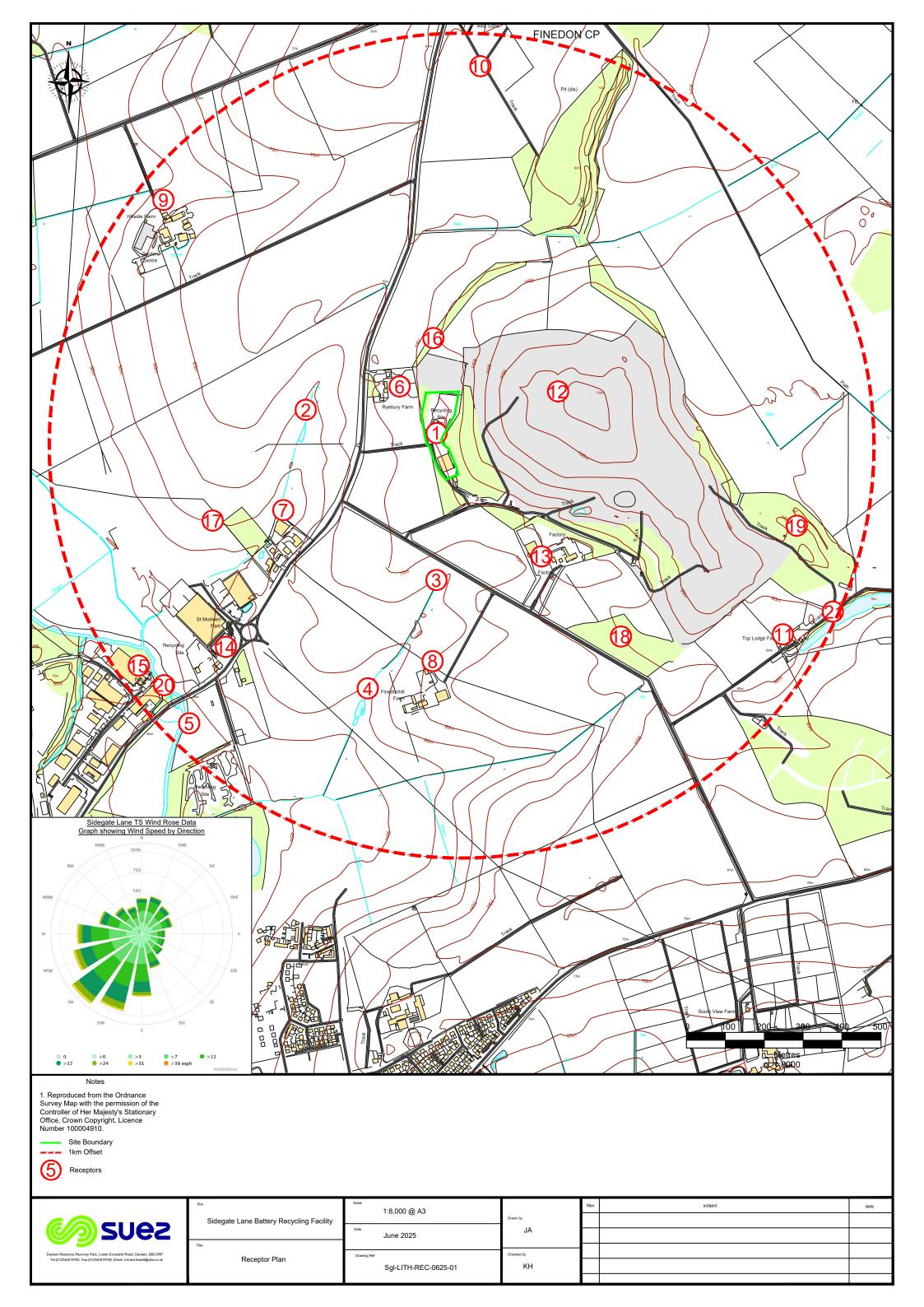




Figure 5 – CCTV Location

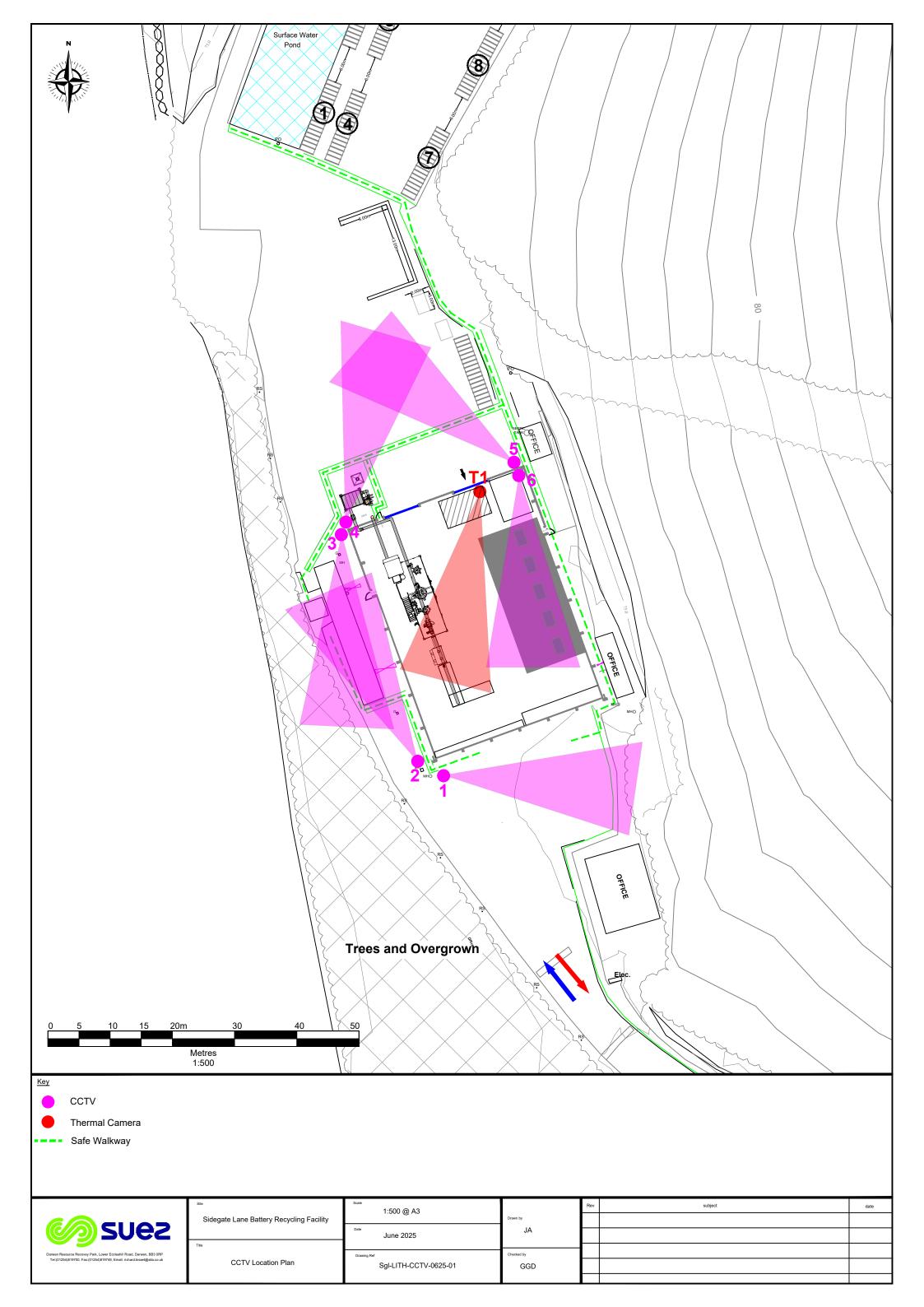




Figure 6 – Emergency Access Route Plan

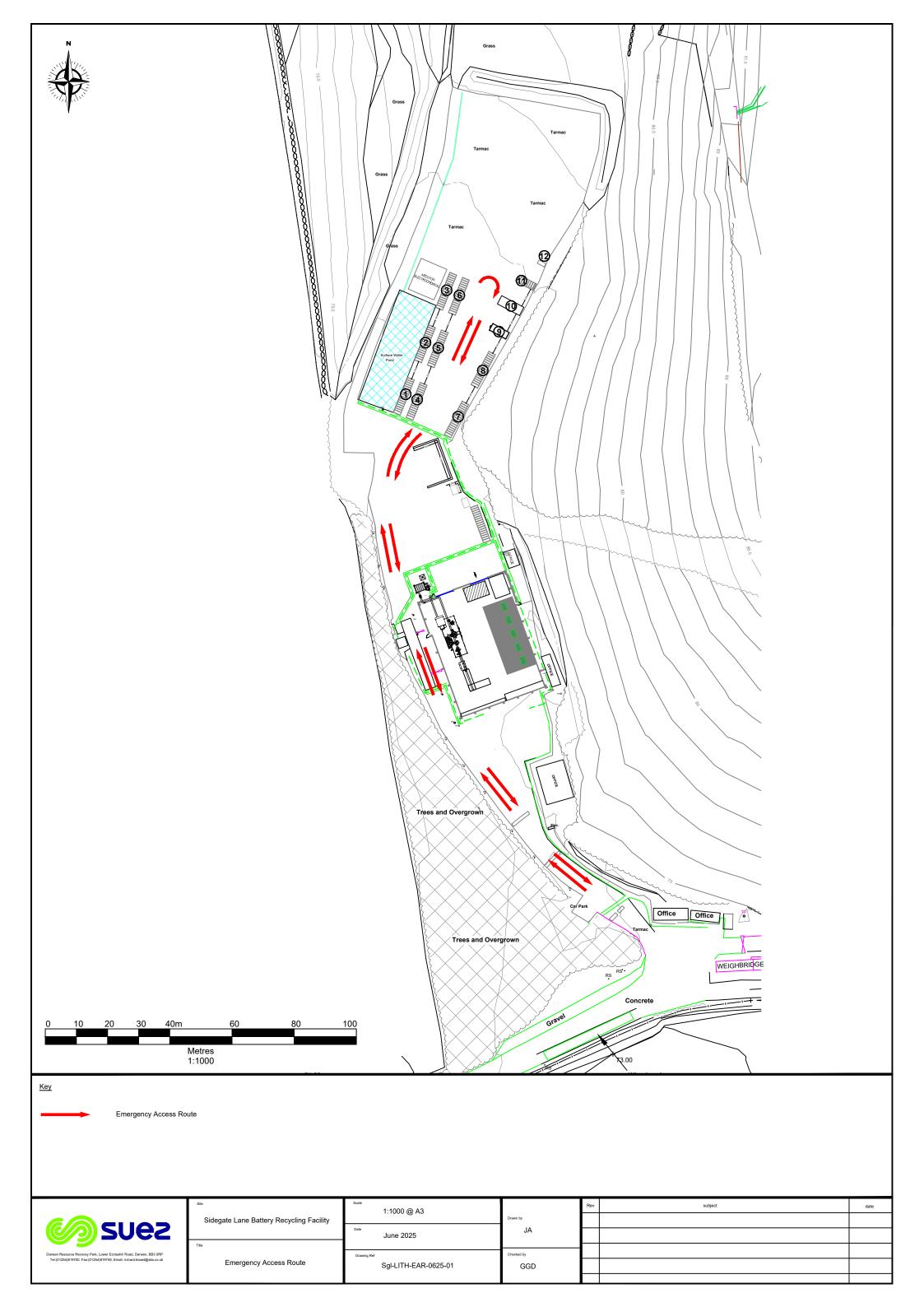




Figure 7 – Proposed Site Drainage

