

Techemet Permit Variation Application Support Document

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1. Non-Technical Summary

Techemet Limited operate a bespoke waste operation permit for a metal recycling site (EPR/CB3006CW). This is however misleading as Techemet do not operate as a typical scrap metal facility their operations are highly specific and tailored to accurately process, sample and recover high value and precious metal bearing wastes such automotive catalytic converters and similar catalyst materials (spent catalyst containing gold, silver, rhenium, rhodium, palladium, iridium or platinum)

Techemet should more accurately be thought of as a precious metal sampling and recovery facility.

Techemet is applying to vary its existing bespoke waste operation permit to an installation. The proposed variation does not introduce new types of processes or fundamentally different activities but does increase the operational areas with the inclusion of Unit 10 and an extension to the existing warehouse building. The increased footprint will allow for an additional processing line and storage of materials.

Techemet are also planning to add additional shifts increasing the operational hours of the facility. The extra hours and process lines will allow Techemet to process and sample more material taking their activities over the installation thresholds. Techemet also wish to add some additional EWC codes to their permit for materials which are essentially the same as current waste stream i.e. metallic/inorganic waste with high value or precious metal content.

The key elements of the permit variation are:

- An application to include installation activities where existing operations exceed throughput thresholds, while continuing to use the same established handling, storage and treatment methods.
- An amendment to the permitted site boundary to include Unit 10 and an extension to the site warehouse area.
- Addition of further waste codes to allow acceptance of a wider variety of high-value and precious metal-bearing wastes that are consistent with wastes already managed at the site.

The proposed changes are not expected to result in a material increase in environmental risk. The waste types proposed under the additional waste codes are similar in nature to those already accepted, are typically handled in relatively small quantities, and remain subject to the same pre-acceptance, inspection, storage and handling controls.

2. Permit Variation Summary

Techemet are expanding their operations on site as detailed below:

- Inclusion of Unit 10 into to the permit
- Building of a new warehouse unit on the current grassed area adjacent to the existing buildings
- Reconfiguring the layout and installing additional sampling and processing equipment
- Increasing the volume of waste materials accepted, processed and stored on site
- This increase will take the operations over installation activity thresholds
- Addition of new EWC codes which are analogous to the types of materials currently handled on site
- Techemet would also like to amend condition 4.2.2 to complete waste returns and consignee return on a quarterly basis

Techemet currently operate below installation activity threshold and the activities carried out on site will remain the same but on a larger scale due to additional equipment, extra space and increasing operating hours with extra work shifts. This increase requires that many of the activities on site are varied to installation activities.

The existing metal recycling operation will still be required for the non-hazardous wastes handled on site and this variation seeks to add required installation activities to the permit. These are detailed in **section 2.2**.

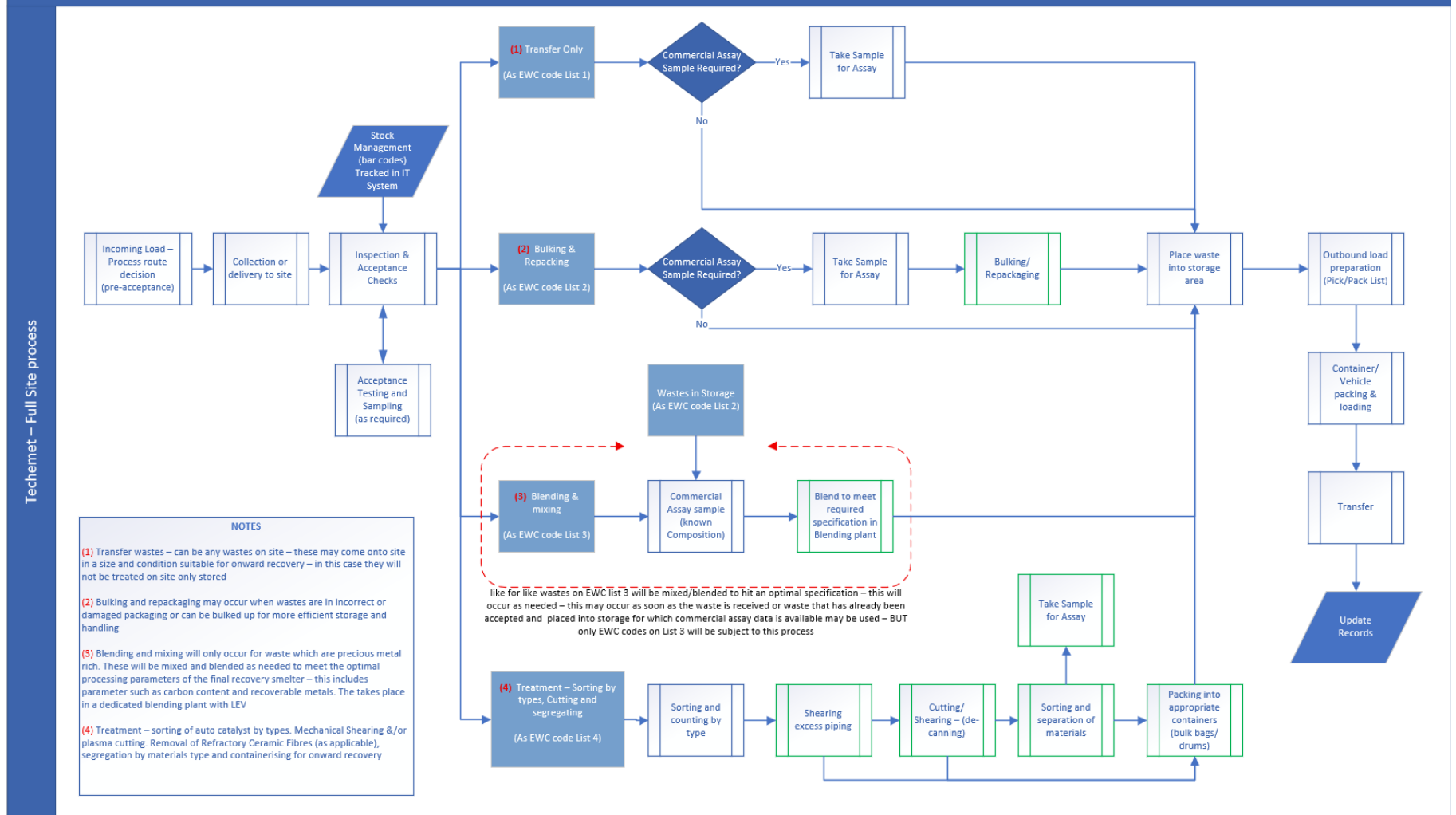
In addition to the installation activities Techemet are also seeking to add additional EWC codes to the permit as shown in **section 2.3**.

It is important to note that all of the additional EWC codes are related to high value and precious metal fractions only. Techemet are a sampling facility that specialises in recovery of high value and precious metal bearing wastes. Although the codes are from a diverse range of industries they are analogous to the waste streams currently handled from a treatment and recovery perspective and do not present significant additional risks.

See **Appendix A** and **Section 2.1** for a high level process map showing the different activities and the processes on site also shown below and **Appendix A.1** for the EWC code lists associated.

2.1. High Level Process Map

Techemet – High Level Process Map



2.2. Additional Activities Table

EPR Schedule	Activity	Activity description	Variation Detail
n/a	metal recycling site 5-25k - As Current	Current site permitted activities - still required but treatment and storage of hazardous wastes will be moved to installation activities	Extension of the existing site boundary to cover the unit 10 building and the main site extension
S5.6	Storage temporary storage of hazardous waste with a total capacity exceeding 50 tonnes pending any of the activities listed in Sections 5.1, 5.2, 5.3 and paragraph (b)	Activities will be the same as the current permitted activities with some new EWC codes and to cover storage up to 400 tonnes of hazardous waste	New Activity
S5.3(a)(ii)	(a)Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities— (ii)physico-chemical treatment;	New Activity to cover treatment of catalytic converters - comprised of sorting, cutting segregation of materials such as catalyst material, Ferrous metals and RCF	New Activity
S5.3(a)(iii)	(a)Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities— (iii)blending or mixing prior to submission to any of the other activities listed in this Section or in Section 5.1;	New activity to cover the blending of wastes to optimise the recovery by blending like materials to meet the optimal smelter infeed requirements	New Activity
S5.3(a)(iv)	(a)Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities— (iv)repackaging prior to submission to any of the other activities listed in this Section or in Section 5.1;	New activity to cover the repackaging of Hazardous Wastes	New Activity

2.3. Additional EWC Codes

The table below is a full list of all the additional EWC codes Techemet wish to add as part of the variation.

Please note that this table includes some “99” codes. Techemet require these codes as they have received enquiries for materials which fall under 99 codes such sludges from refineries containing Rhodium reforming catalysts. The producers classify the material as 99 codes as their technical assessments determine it to be the most appropriate code for the material. These are typically one off or ad hoc enquires for example when a refinery has catalyst build up in a system or a spillage to effluent treatment system. These enquiries are typically low volume 20kg to a 1000ltr IBC.

Techemet propose that these codes be allowed on their permit to allow them to recover these precious metal fractions but recognise this would need to be on a case by case basis specific to each producer. Due to the ad hoc and potentially one off nature of these arising it is not possible provide this information in advance. Techemet would like to be able to agree these materials on a case by case basis with the Environment Agency as they occur via notification and agreement with their local officer and/or technical authorities.

EWC	Hazardous	EWC Description	Indicative waste streams
05 01 99	No	Wastes not otherwise specified	Precious and high value metal containing fractions. Specifically catalyst materials
10 07 01	No	slags from primary and secondary production	Precious and high value metal containing fractions
10 07 02	No	dross and skimmings from primary and secondary production	Precious and high value metal containing fractions
10 07 03	No	solid wastes from gas treatment	Precious and high value metal containing fractions
10 07 04	No	other particulates and dust	Precious and high value metal containing fractions
10 07 05	No	sludges and filter cakes from gas treatment	Precious and high value metal containing fractions
10 07 99	No	wastes not otherwise specified	Precious and high value metal containing fractions
16 08 04	No	spent fluid catalytic cracking catalysts (except 16 08 07)	Precious and high value metal containing fractions
17 04 07	No	mixed metals	mixed metal fractions from construction and demolition
19 10 02	No	non-ferrous waste	high value metals such as Copper, Precious metal containing wastes
16 05 09	No	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08	high value metals such as Copper, Precious metal containing wastes. For example laboratory catalysts
01 03 05*	Yes	other tailings containing hazardous substances	Precious and high value metal containing fractions
05 01 03*	Yes	tank bottom sludges	Precious and high value metal containing fractions. Specifically catalyst materials

			which may be present in the tank bottoms
05 01 09*	Yes	Sludges from on-site effluent treatment containing hazardous substances	Precious and high value metal containing fractions. Specifically catalyst materials which may be present in fractions recovered from effluent treatment
11 01 09*	Yes	sludges and filter cakes containing hazardous substances	Precious and high value metal containing fractions
16 08 05*	Yes	spent catalysts containing phosphoric acid	Precious and high value metal containing fractions
16 08 06*	Yes	spent liquids used as catalysts	Precious and high value metal containing fractions
16 11 05*	Yes	linings and refractories from non-metallurgical processes containing hazardous substances	linings and refractories with recoverable levels of precious and high value metals
17 04 09*	Yes	metal waste contaminated with hazardous substances	Precious and high value metal containing fractions
19 01 11*	Yes	bottom ash and slag containing hazardous substances	Precious and high value metal containing fractions
16 05 06*	Yes	laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals	high value metals such as Copper, Precious metal containing wastes. For example laboratory catalysts
16 05 07*	Yes	discarded inorganic chemicals consisting of or containing hazardous substances	high value metals such as Copper, Precious metal containing wastes. For example bulk catalysts

2.4. Activities and Consolidated EWC codes

This section contains a consolidated list of the EWC codes applicable to the different activities as section 2.3.

For clarity each table has a status column which shows if the EWC code is a new waste to be added as part of the variation or an existing one.

2.4.1. Non-hazardous Waste Operation EWC Codes

Status	EWC	EWC Description
New	01 03 05	other tailings containing hazardous substances
New	05 01 99	Wastes not otherwise specified
New	10 07 01	slags from primary and secondary production
New	10 07 02	dross and skimmings from primary and secondary production
New	10 07 03	solid wastes from gas treatment
New	10 07 04	other particulates and dust
New	10 07 05	sludges and filter cakes from gas treatment

New	10 07 99	wastes not otherwise specified
New	16 08 04	spent fluid catalytic cracking catalysts (except 16 08 07)
New	17 04 07	mixed metals
New	19 10 02	non-ferrous waste
New	16 05 09	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08
Existing	16 01 17	ferrous metal
Existing	16 01 18	non-ferrous metal
Existing	16 01 22	components not otherwise specified
Existing	16 02 14	discarded equipment other than those mentioned in 16 02 09 to 16 02 13
Existing	16 02 16	components removed from discarded equipment other than those mentioned in 16 02 15
Existing	16 06 04	- alkaline batteries (except 16 06 03),
Existing	16 06 05	other batteries and accumulators
Existing	16 08 01	spent catalysts containing gold, silver, rhenium, rhodium, palladium, iridium or platinum (except 1
Existing	16 08 03	spent catalysts containing transition metals or transition metal compounds not otherwise specified
Existing	16 11 02	carbon-based linings and refractories from metallurgical processes other than those mentioned in 16
Existing	16 11 04	other linings and refractories from metallurgical processes other than those mentioned in 16 11 03
Existing	16 11 06	lining and refractories from non-metallurgical processes other than those mentioned in 16 11 05
Existing	17 04 11	cables other than those mentioned in 17 04 10
Existing	19 12 02	ferrous metal
Existing	19 12 03	non-ferrous metal
Existing	19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those
Existing	20 01 36	discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and
Existing	20 01 40	Metals

2.4.2. Hazardous Waste Storage and Transfer

Status	EWC	EWC Description
new	01 03 05*	other tailings containing hazardous substances
new	05 01 03*	tank bottom sludges
new	05 01 09*	sludges from on-site effluent treatment containing hazardous substances
new	11 01 09*	sludges and filter cakes containing hazardous substances
new	16 08 05*	spent catalysts containing phosphoric acid

new	16 08 06*	spent liquids used as catalysts
new	16 11 05*	linings and refractories from non-metallurgical processes containing hazardous substances
new	17 04 09*	metal waste contaminated with hazardous substances
new	19 01 11*	bottom ash and slag containing hazardous substances
new	16 05 06*	laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals
new	16 05 07*	discarded inorganic chemicals consisting of or containing hazardous substances
existing	16 01 21*	hazardous components other than those mentioned in 16 01 07 to 16 01 11 and 16 01 13 and 16 01 14
existing	16 02 13*	- discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16
existing	16 02 15*	- hazardous components removed from discarded equipment,
existing	16 06 01*	lead batteries
existing	16 06 02*	- Ni-Cd batteries,
existing	16 06 03*	- mercury-containing batteries,
existing	16 06 06*	- separately collected electrolyte from batteries and accumulators,
existing	16 08 02*	- Spent catalysts containing hazardous transition metals or hazardous transition metal compounds.
existing	16 08 07*	Spent catalyst contaminated with hazardous substances.
existing	16 11 01*	carbon-based linings and refractories from metallurgical processes containing hazardous substances
existing	16 11 03*	other linings and refractories from metallurgical processes containing hazardous substances
existing	16 11 05*	linings and refractories from non-metallurgical processes containing hazardous substances
existing	17 04 10*	- cables containing oil, coal tar and other hazardous substances,
existing	19 02 04*	- premixed wastes composed of at least one hazardous waste,
existing	19 12 11*	other wastes (including mixtures of materials) from mechanical treatment of waste containing hazardous substances
existing	20 01 35*	- discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 2

2.4.3. Hazardous Waste – Blending

Status	EWC	EWC Description
New	16 11 05*	linings and refractories from non-metallurgical processes containing hazardous substances
New	19 01 11*	bottom ash and slag containing hazardous substances
Existing	16 01 21*	hazardous components other than those mentioned in 16 01 07 to 16 01 11 and 16 01 13 and 16 01 14
Existing	16 08 02*	- Spent catalysts containing hazardous transition metals or hazardous transition metal compounds.
Existing	16 08 07*	Spent catalyst contaminated with hazardous substances.

Existing	16 11 01*	carbon-based linings and refractories from metallurgical processes containing hazardous substances
Existing	16 11 03*	other linings and refractories from metallurgical processes containing hazardous substances
Existing	16 11 05*	linings and refractories from non-metallurgical processes containing hazardous substances
Existing	19 12 11*	other wastes (including mixtures of materials) from mechanical treatment of waste containing hazardous substances

2.4.4. Hazardous Waste – Repackaging

Status	EWC	EWC Description
new	16 11 05*	linings and refractories from non-metallurgical processes containing hazardous substances
new	17 04 09*	metal waste contaminated with hazardous substances
new	19 01 11*	bottom ash and slag containing hazardous substances
Existing	16 01 21*	hazardous components other than those mentioned in 16 01 07 to 16 01 11 and 16 01 13 and 16 01 14
Existing	16 02 13*	- discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16
Existing	16 02 15*	- hazardous components removed from discarded equipment,
Existing	16 08 02*	- Spent catalysts containing hazardous transition metals or hazardous transition metal compounds.
Existing	16 08 07*	Spent catalyst contaminated with hazardous substances.
Existing	16 11 01*	carbon-based linings and refractories from metallurgical processes containing hazardous substances
Existing	16 11 03*	other linings and refractories from metallurgical processes containing hazardous substances
Existing	16 11 05*	linings and refractories from non-metallurgical processes containing hazardous substances
Existing	17 04 10*	- cables containing oil, coal tar and other hazardous substances,
Existing	19 02 04*	- premixed wastes composed of at least one hazardous waste,
Existing	19 12 11*	other wastes (including mixtures of materials) from mechanical treatment of waste containing hazardous Substances
Existing	20 01 35*	- discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 2

2.4.5. Hazardous Waste – Physico-Chemical Treatment

Status	EWC	EWC Description
Existing	16 01 21*	hazardous components other than those mentioned in 16 01 07 to 16 01 11 and 16 01 13 and 16 01 14
Existing	16 08 02*	- Spent catalysts containing hazardous transition metals or hazardous transition metal compounds.
Existing	16 08 07*	Spent catalyst contaminated with hazardous substances.

2.5. Waste Activity Volumes

Schedule 1 or other references	Description of the activity	Activity Capacity - Tonnes	Annex I (D codes) and Annex II (R codes) and descriptions	Hazardous Waste Treatment Capacity	Non - Hazardous Waste Treatment Capacity
n/a	metal recycling site 5-25k - As Current	75	R4, R5, R8, R13	N/A	N/A
S5.6	Storage temporary storage of hazardous waste with a total capacity exceeding 50 tonnes pending any of the activities listed in Sections 5.1, 5.2, 5.3 and paragraph (b)	843	R4, R5, R8, R13	N/A	N/A
S5.3(a)(ii)	(a)Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities— (ii)physico-chemical treatment;	60	R4, R5, R8, R13		N/A
S5.3(a)(iii)	(a)Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities— (iii)blending or mixing prior to submission to any of the other activities listed in this Section or in Section 5.1;	60	R4, R5, R8, R13		N/A
S5.3(a)(iv)	(a)Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities— (iv)repackaging prior to submission to any of the other activities listed in this Section or in Section 5.1;	25	R4, R5, R8, R12, R13		N/A

2.6. Annual Waste Volumes

Item	Tonne
Total Storage Capacity (Haz/Non)	1299
Total Hazardous Storage Capacity	843
Annual Throughput - Hazardous	22000
Annual Throughput - Non Hazardous	24999

2.6.1. Waste Volumes Calculation

Techemet are expanding operations on site to increase throughput which requires the facility to become and installation.

This sections gives an explanation of the increases in volumes handled.

Techemet are:

- Upgrading their existing processing line
- Adding additional processing shifts
 - Planned to be 2 shifts with the option to go to 3 shifts for 24/7 operation
- Adding new warehousing space
- Adding a new processing line with approximately 50% more capacity than the existing line

This gives the following capacities:

- 60 tonnes per day of hazardous waste (primarily automotive catalyst) subject to physico-chemical treatment
 - 20 tonnes of materials processed per shift
- The processing lines have the ability to blend materials as such the blending limit has been set to the same as the physico-chemical treatment activity
- Repackaging would be limited to 1 full load per day and as such has been set to 25 tonnes
- Annual hazardous waste throughput has been set to 22,000 tonnes per annum
 - $60 \times 365 = 21,900$ (rounded to 22k)
- Non-hazardous waste remains the same as the current permit

Overall the additional process lines and shifts give the site a theoretical capacity increase of over 6 times the current capacity.

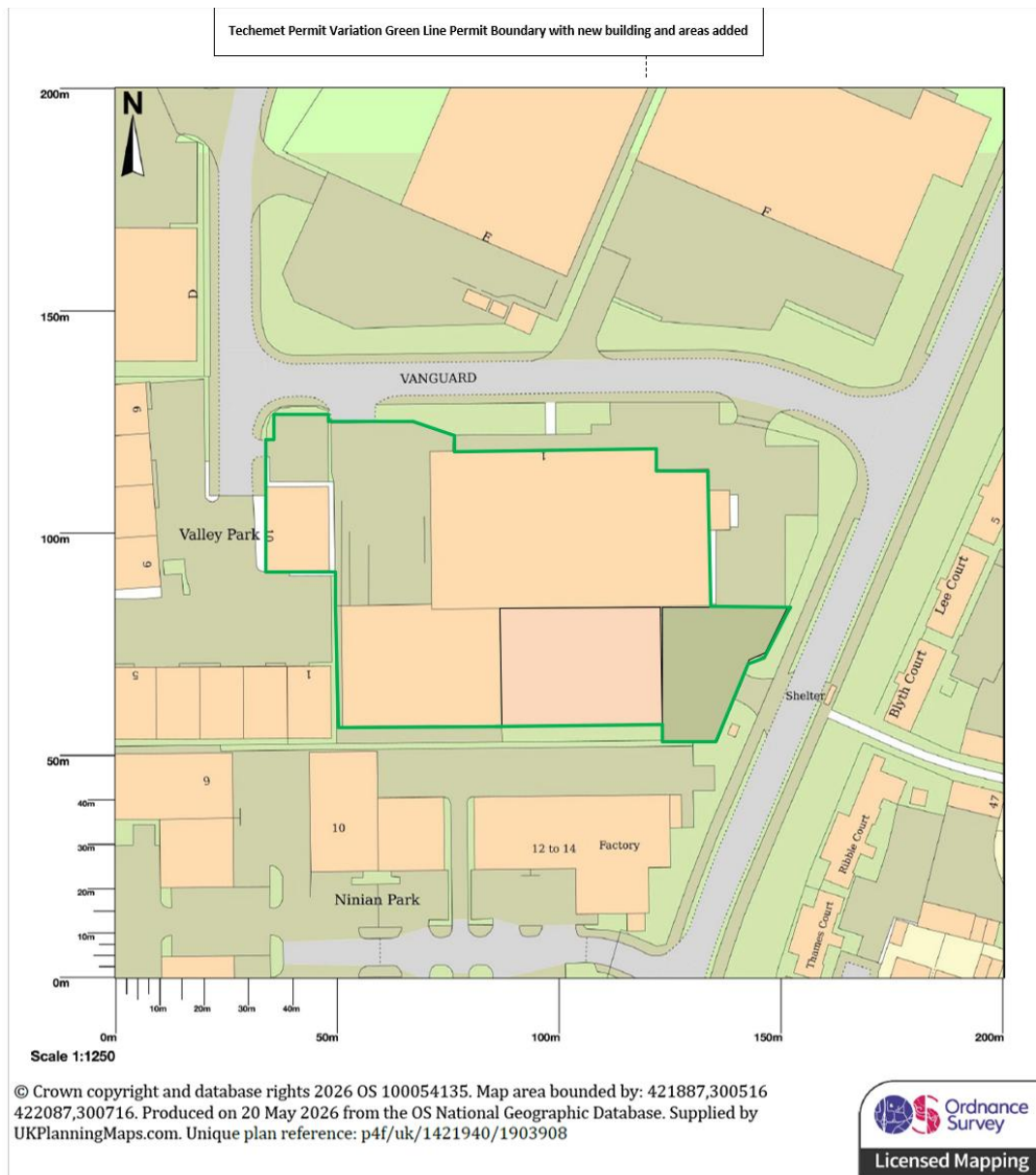
3. Site location, layout and Drainage

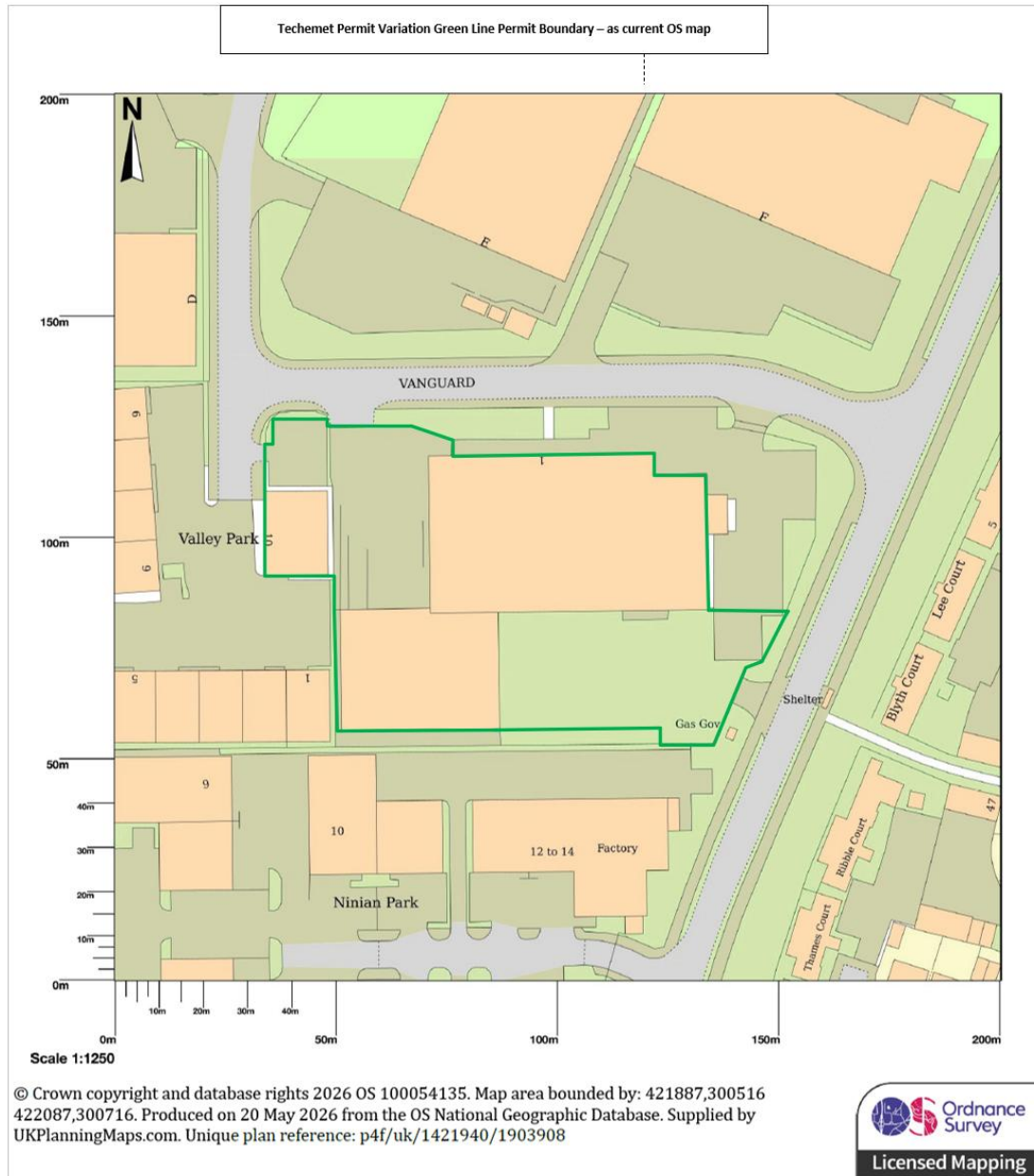
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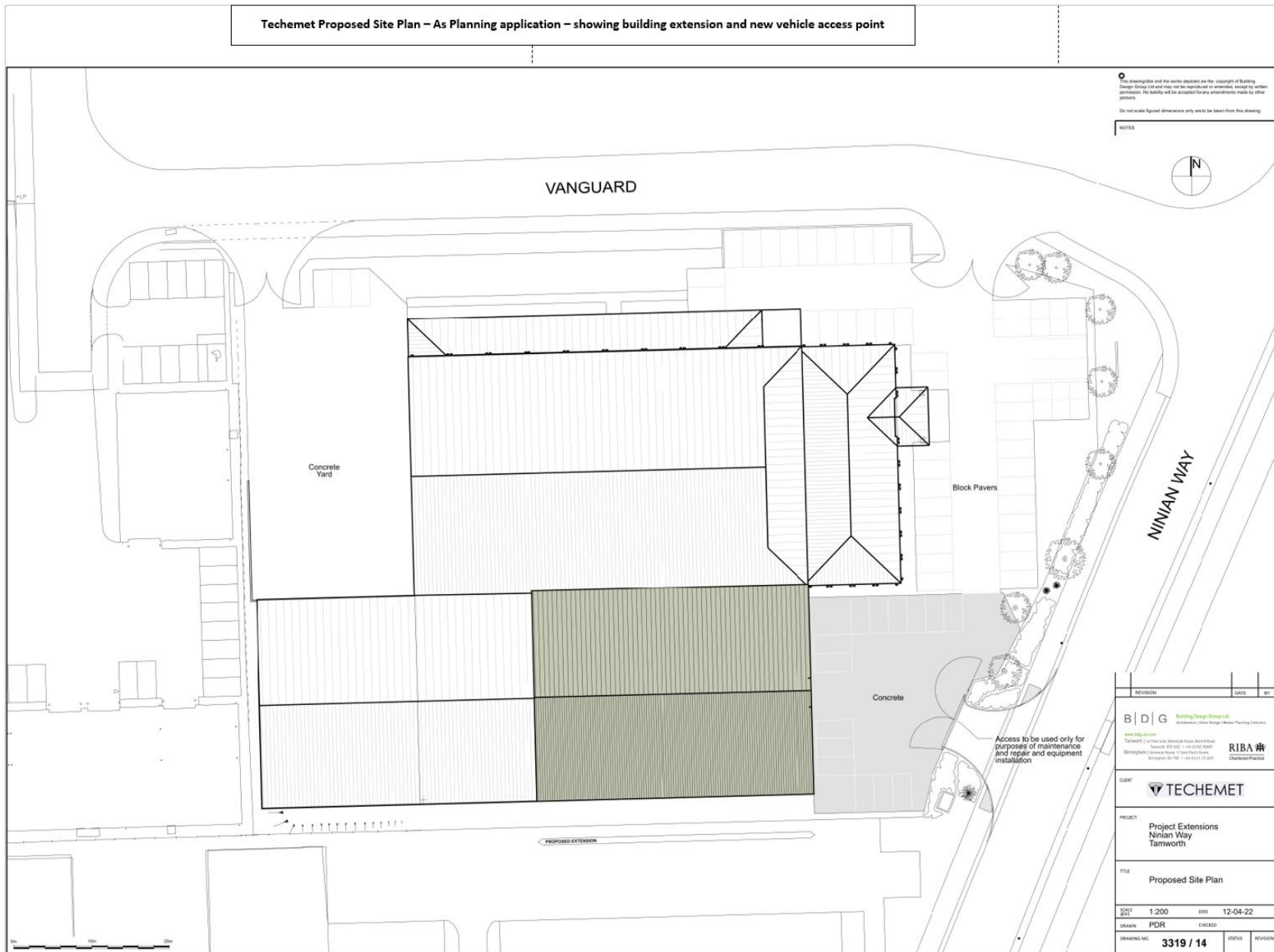
- The site location and permit green line boundary
- The site layout and storage areas 2 drawings:
 - Area layout showing the uses and activities of each area.
 - Storage volumes and approximate location for each area

This drawing are included as **Appendix B**

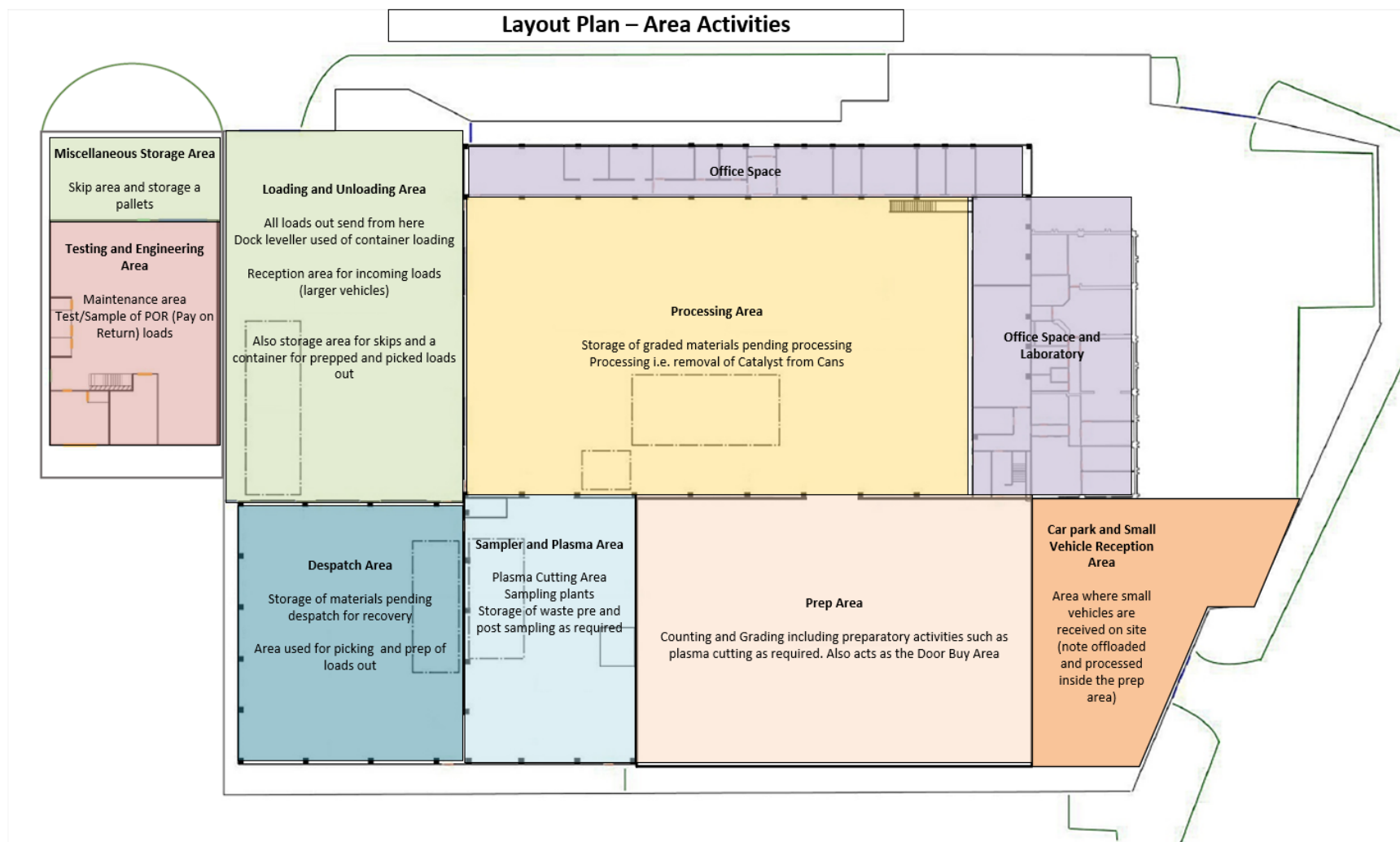
3.1. Site location

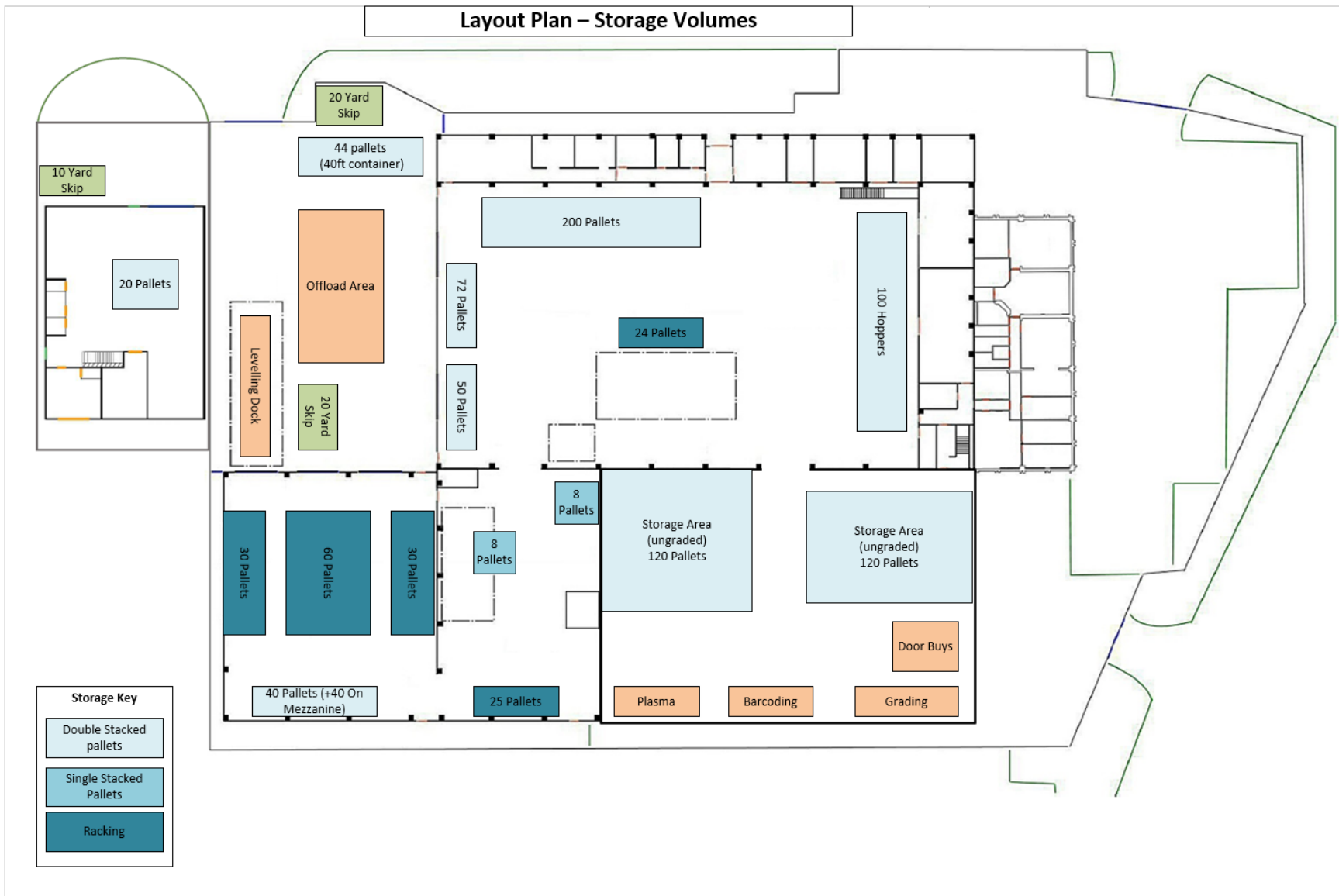






3.2. Site Layout and Storage Volumes





Material flow through the facility

- Small vehicles and door buys enter through the right hand entrance and are offloaded inside the building
- Larger vehicles are received in the rear yard in a designated offload area where initial inspection and acceptance checks will take place
- Material is then transferred to the Prep area where is graded/sorted and barcoded as required for further handling
- Material then flows to the Processing area for any treatment or storage depending on material
- Material is then moved to the Sample area – if sampling is required
- Finally material arrives in the Despatch area where it is collated in container loads for onward recovery
- Flexibility to carryout processes in other areas is required but the above is the general flow
 - The proposed layout and flow is the optimal process flow through them plant but:
 - If an item of plant is out of service for example a cutting platform then cutting activities may occur at an different location where they have other cutters of the same type.
- Unit 10 is a small sampling and processing unit for POR (Pay on Return) materials – these are typically individual cat units which required processing, weighing and sampling to determine the value – typically received for individuals or small companies
 - All activities take place within the unit

3.3. Site Drainage

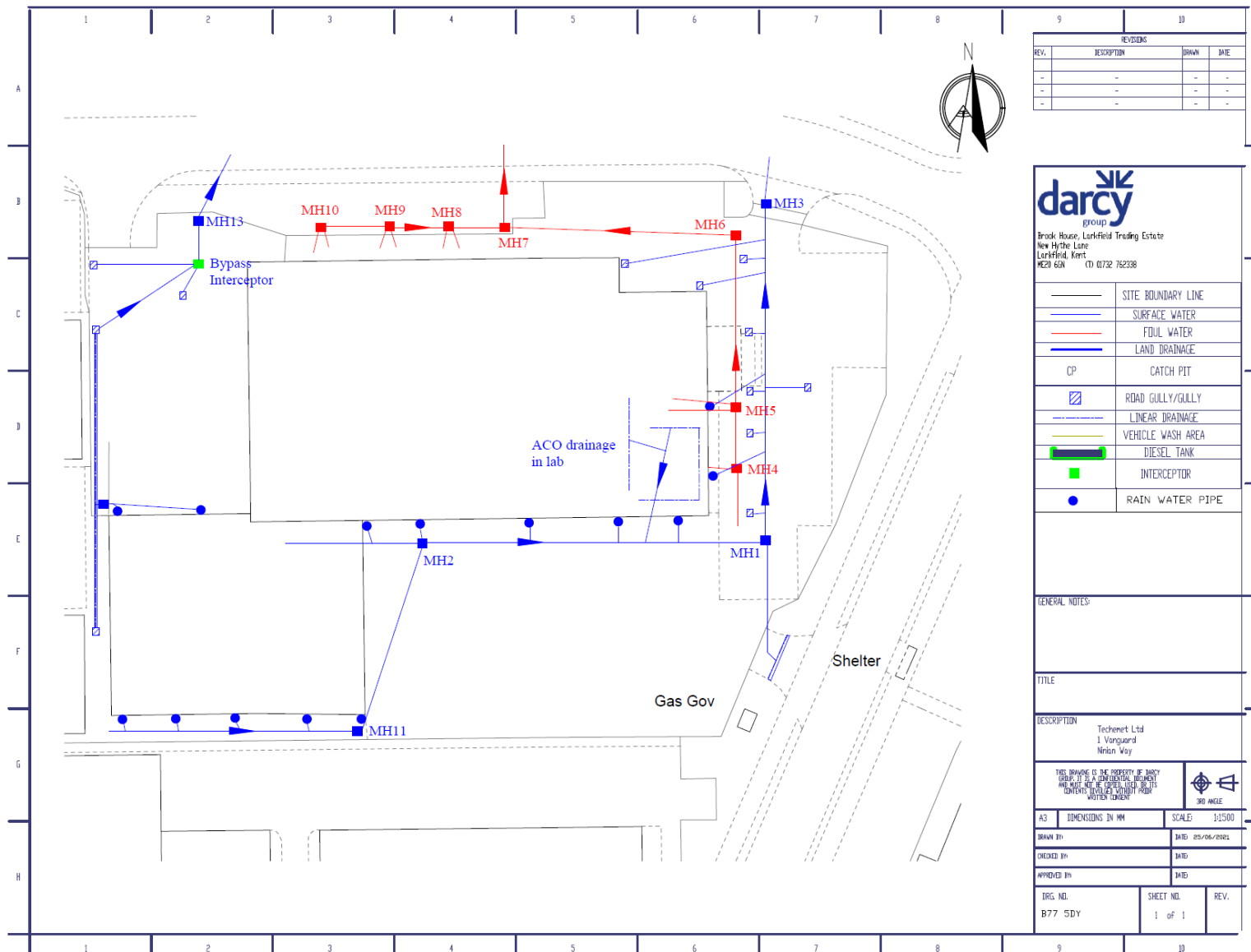
This section contains 3 drawings as below:

- Current site drainage (Included as **Appendix C.1**)
- Unit 10 site drainage (Included as **Appendix C.2**)
- New warehouse drainage (Included as **Appendix C.3**)

Key drainage arrangements:

- All site areas drain to a class 1 interceptor
- The current site area is fitted with drain stoppers to seal the site in event of spillage or fire
- There is a fall/flow direction in the yard areas and the internal storage areas towards the dock leveller
 - The dock leveller is a sealed concrete pit and access ramp to allow container vehicles to be loaded directly from the despatch building
 - The dock leveller has a volume of approximately 19.8m³
 - Surface water is pumped from a sump to the drainage channel/interceptor
 - The dock leveller will be used for fire water or spillage containment
- The new building drainage as shown in 3.3.3 connects to the drainage as shown in 3.3.1 at MH11
- Unit 10 has its own drainage system which is fitted with an interceptor class 1 interceptor
 - Waste is only stored inside at unit 10
 - The Unit 10 external yard area is only used to store a metal skip and pallets which do not present a risk to surface water

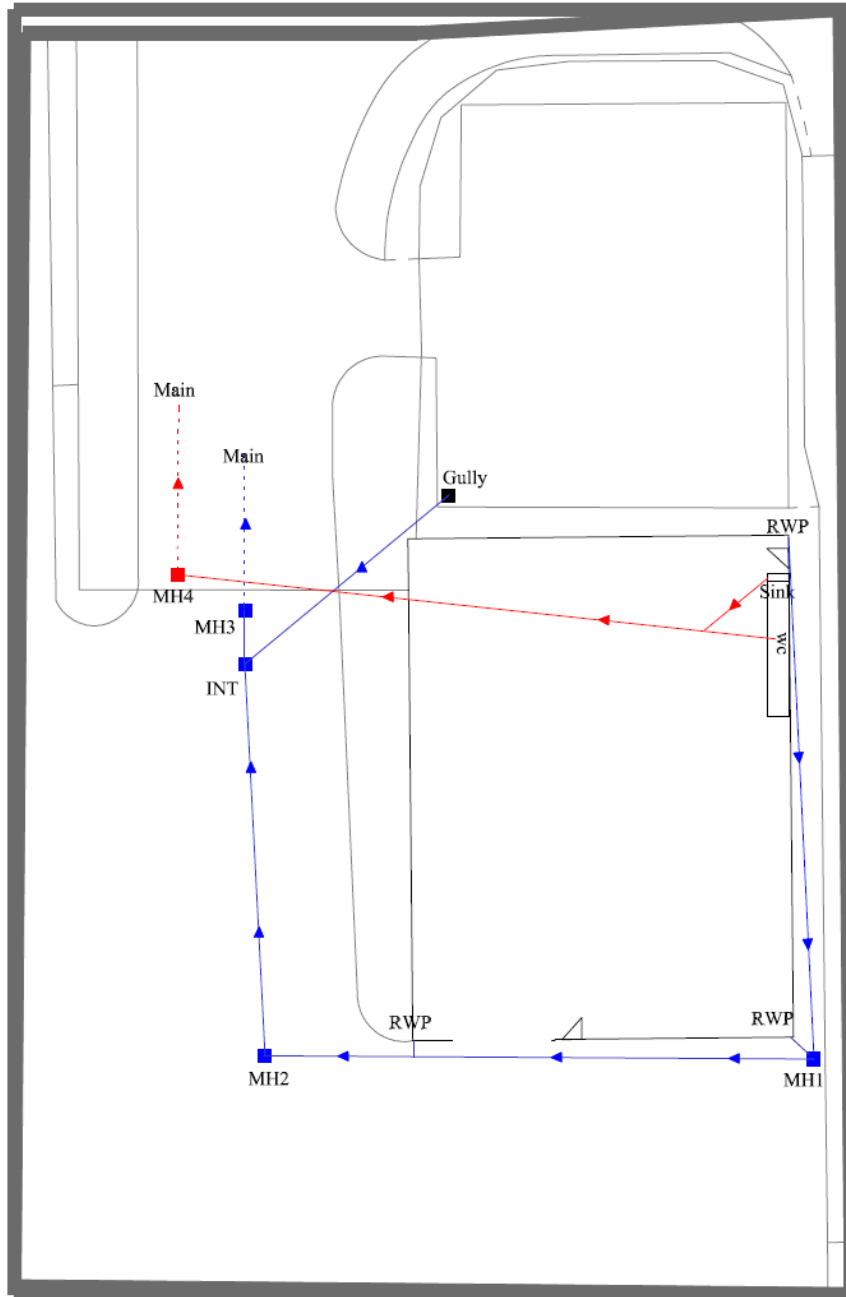
3.3.1. Current Site Drainage



3.3.2. Unit 10 Drainage

Techemet Ltd
www.techemet.com
Recycling centre in Tamworth, United Kingdom
1 Vanguard, Tamworth B77 5DY

Key
 Surface Drain
 Foul Drain
 RWP Rain water pipe



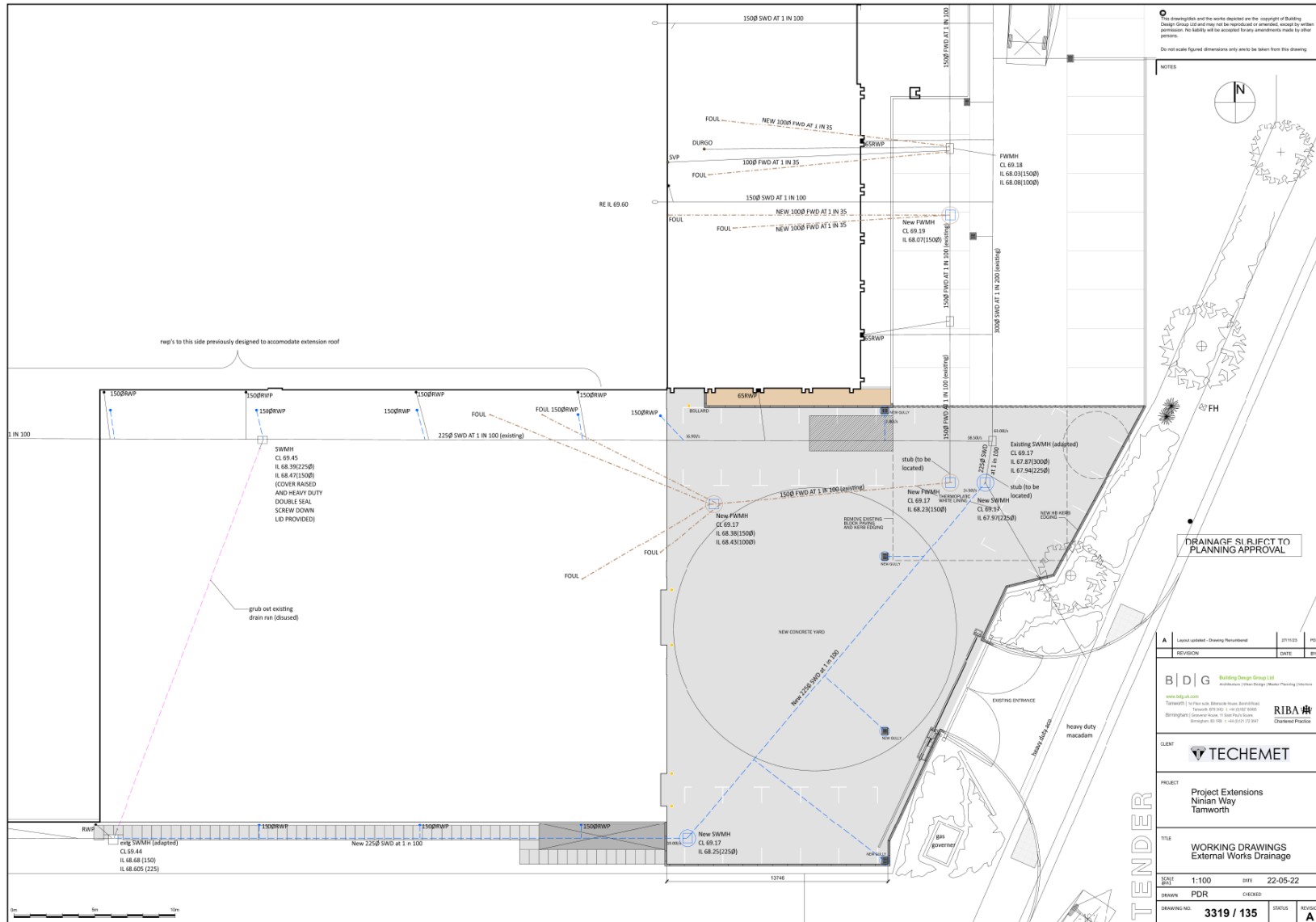
NTS

0 2 4 6 8 10
metres

N
↑



3.3.3. New Building Drainage



4. BAT Assessment

A Best Available Techniques (BAT) assessment has been undertaken to support this application in accordance with the Industrial Emissions Directive (IED) and relevant Waste Treatment BREF conclusions. The BAT assessment is included as a standalone document – **Appendix D**

The BAT assessment reviews the applicability of BAT to the activities carried out at the site and demonstrates how BAT is achieved or, where not applicable, provides appropriate justification.

The sections below are a simple summary of the key areas for quick review and context.

4.1. Applicability of BAT to site activities

The site undertakes mechanical and physico-chemical waste treatment activities associated with the sorting, grading, cutting, sampling and preparation of catalytic converters and high-value and precious metal bearing wastes. These activities fall within the scope of the Waste Treatment BREF and the relevant BAT conclusions have been reviewed accordingly.

BAT conclusions relating to high-temperature treatment, thermal oxidation, incineration, or large-scale chemical processing are not applicable, as such activities are not undertaken on site. Where BAT conclusions are not relevant, this has been clearly identified and justified within the BAT Assessment.

4.2. Environmental Management System

Techemet operate an ISO14001 certified EMS that incorporates waste acceptance controls, operational procedures, training and competence requirements, emergency preparedness, incident management and continuous improvement mechanisms.

These arrangements demonstrate compliance with BAT relating to management systems, organisation, staff competence and environmental performance monitoring.

Techemet also operate the EU Skills Competence Management System form of technical competence for the facility – see **Appendix K**

4.3. Waste acceptance, tracking and storage

BAT conclusions relating to waste characterisation, pre-acceptance, acceptance, tracking and storage are addressed through:

- formal pre-acceptance and acceptance procedures,
- segregation of wastes by type and compatibility,
- electronic tracking of waste movements through receipt, processing, storage and dispatch,

- defined storage areas and limits

BAT conclusions relating handling and storage are managed via optimised storage areas and process flows and procedure for the facility which are operated under a competence management system of technical competence and are part of the EMS.

4.4. Treatment operations and operational control

Treatment activities are limited to low-risk mechanical and physical processes, including cutting, sorting, grading, blending and sampling. Operations are undertaken in defined areas using appropriate plant and equipment, supported by housekeeping controls and maintenance regimes.

There are no waste water streams other than clean surface water discharged via interceptors.

There are no channelled emission from the waste activities as all LEV systems are fitted with HEPA filters and discharge clean air back into the facility.

Techemet do not shred waste on site – only cutting using shears, saws and/or plasma cutters.

5. Operating Techniques and Appropriate Measures

5.1. Technical Standards and Appropriate Measures

EPR Schedule	Activity	Activity description	Appropriate measures (AM) & Technical Standards
n/a	metal recycling site 5-25k - As Current	Current site permitted activities - still required but treatment and storage of hazardous wastes will be moved to installation activities	Waste Treatment BREF - BAT Conclusions AM - End of life vehicles (ELVs) AM - Waste electrical and electronic equipment (WEEE) AM – Waste Batteries AM – Non Hazardous and Inert Wastes
S5.6	Storage temporary storage of hazardous waste with a total capacity exceeding 50 tonnes pending any of the activities listed in Sections 5.1, 5.2, 5.3 and paragraph (b)	Activities will be the same as the current permitted activities with some new EWC codes and to cover storage up to 200tonnes (Check new building?)	Waste Treatment BREF - BAT Conclusions AM - End of life vehicles (ELVs) AM - Waste electrical and electronic equipment (WEEE) AM – Waste Batteries AM – Chemical Waste Appropriate Measures
S5.3	(a)Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities— (ii)physico-chemical treatment;	New Activity to cover treatment of catalytic converters - comprised of sorting, cutting segregation of materials such as catalyst material, Ferrous metals and RCF	Waste Treatment BREF - BAT Conclusions AM - End of life vehicles (ELVs)
S5.3	(a)Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities— (iii)blending or mixing prior to submission to any of the other activities listed in this Section or in Section 5.1;	New activity to cover the blending of wastes to optimise the recovery by blending like materials to meet the optimal smelter infeed requirements	Waste Treatment BREF - BAT Conclusions AM - End of life vehicles (ELVs)
S5.3	(a)Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities— (iv)repackaging prior to submission to any of the other activities listed in this Section or in Section 5.1;	New activity to cover the repackaging of Hazardous Wastes	Waste Treatment BREF - BAT Conclusions AM - End of life vehicles (ELVs) AM – Chemical Waste Appropriate Measures

Only the sections of the Appropriate Measures (AM) relevant to the activities being carried out on site will apply for example:

- Techemet are not treating/sorting WEEE only storing and transferring on for recovery.
- Techemet are not sorting Batteries only placing into a storage container like for like and sending for recovery.
- Chemical Waste AM would only apply if the materials being handled are not WEEE, Batteries or ELV components – for example high value precious metal fractions from Bottom Ash or Laboratory catalyst products

5.2. Operating Techniques – Process Flow

A detailed process review and mapping exercise was carried out to produce a process flow diagram for the facility showing how site operates and manages waste which is included as **Appendix E**

Key notes:

- The diagram is a swimlane diagram that separates the activities into the different activities and stages of the process.
- The following sections mirror the swimlanes and provide additional information and explanation

5.2.1. Pre-acceptance and acceptance controls

Prior to waste being received on site pre-acceptance is carried out via the IT system which hold the expected information for a particular load/customer. Some wastes are collected by Techemet staff or are Door Buys (individuals or small companies) bringing automotive catalytic converters to site. This area checked by Techemet staff before collection or purchase to ensure they are suitable for the facility

Incoming wastes are:

- visually checked on arrival,
- confirmed against pre-acceptance information,
- entered onto the site IT system,
- labelled to maintain traceability through the process.

Where applicable, radiation detection and packaging checks are undertaken before waste is offloaded into the designated reception area.

5.2.2. Receipt, counting and grading

The bulk of the waste received on site are automotive catalytic converters which once accepted are counted and graded with individual units are inspected to determine the appropriate processing route. Other wastes are limited in scope and typically articles such as WEEE waste and batteries. Other waste such as high value metal waste (catalyst powders etc) are inspected and sampled as required to determine composition.

Records of acceptance checks are retained within the site IT system.

5.2.3. Treatment and physical processing

Treatment activities are primarily based on sorting (grading) automotive catalytic converters into types and then cutting activities using mechanical shears and/or plasma cutters/ Bandsaw

Once cut materials such catalyst powders/mesh and refractory ceramic fibres are separated and packaged into appropriate containers. Fractions are then place into storage or sent for sampling as required.

All fraction weights and containers are recorded in the site IT system.

5.2.4. Sampling and quality control

Where required, wastes are subject to sampling to confirm composition and value. Particularly for automotive catalytic converters and high-value or precious-metal-bearing materials.

Samples are taken using sampling plants which are designed to take highly accurate multi increment composite samples to ensure accuracy. Manual sampling may be carried out on some materials depending on properties but for automotive catalytic converters the plants are used.

All sample records are record in the site IT system.

5.2.5. Storage prior to dispatch

Following processing and sampling, materials are stored in designated storage areas appropriate to their material types.

Storage arrangements vary by material type but are mostly palletised bulk bags in dedicated floor areas or racking .

Storage areas are managed to prevent mixing of incompatible materials and to maintain safe access, inspection and housekeeping standards. Storage durations are controlled in line permit requirements but are typically much short at <1 month.

5.2.6. Blending and repackaging (where applicable)

Where required, compatible materials may be blended or repackaged to optimise recovery routes or meet optimal recovery requirements.

Blending activities do not change the nature of the waste they are designed to blend batches of similar material to achieve a desired specification. For example blending catalyst with 2 different Loss on ignition values to hit an optimal value for the recovery facility

5.2.7. Transfer and dispatch

Final stages of the process involves the transfer of materials off site for recovery. The bulk of wastes are transferred via international waste shipment for recovery and are loaded into cargo containers via the dock leveller. Detailed packing lists are generated of each load out and records are stored in the IT system.

Other waste such as WEEE and Batteries are stored until there is a full container and then transferred to local waste management facilities with all records stored in the site IT system. These wastes are incidental to the main activities of sampling and recovery of precious metals.

6. Facility and Technology

The Techemet facility is a bespoke designed treatment and sampling plant specifically for automotive catalytic converter and other related high value and precious metal bearing wastes. Techemet also carry out transfer activities for a small volume of waste such as WEEE and batteries which is typically offered to carry out a complete service to customers with auto cats.

It is important to note that Techemet are not a scrap yard they are a facility specifically designed to handling and sample high value materials. As such the design of the site is aimed at capturing and retaining as much of these materials as possible.

All processing and sampling equipment where there is a risk of dust/emissions exposure are fitted with abatement.

Techemet also operates an inhouse laboratory which carries out Loss on Dry, Loss in Ignition, fusing and analysis of samples.

The inhouse laboratory ensure a fast turnaround on analysis which enable the site to despatch materials for recovery in a timely manner

The sections below detail the processing technology/techniques used and the emission management system and controls

6.1. Processing and Handling Technologies

Waste treatment and preparation activities use a combination of manual and mechanical equipment appropriate to the materials handled.

Technologies employed include:

- Sorting and segregation equipment
 - Including counting machines to tally materials as they are sorted
- Cutting equipment
 - Fixed mechanical shears
 - Manual shearing/cutters
 - Plasma cutters
 - Bandsaw
- Sampling and processing equipment
 - Hoppers and conveyors
 - Vibrating screens
 - Picking line
 - Paddle mixer
 - Sample splitter (multi increment composite samplers)
 - Mill crushers
 - Chain crusher
 - Jaw crusher

- Bagging plant (FIBC – bulk bags)
- Weighing systems
- LEV
 - Primary filtration (bag/cartridge filters)
 - Secondary filtration – HEPA filters – clean air discharge into building
- Mobile LEV

6.2. Emissions management and control

Mechanical processing, cutting and sampling activities have the potential to generate dust or fine particulate matter. To control this risk, the site employs local exhaust ventilation (LEV) and air management systems linked to high-efficiency particulate air (HEPA) filtration.

Air extracted from processing and handling equipment is:

- All activities are carried out in the enclosed buildings
- Captured at source using LEV systems
- Passed through primary filtration media
- Further treated using HEPA filters to remove fine particulates
- Returned to the internal building environment rather than discharged externally

This approach ensures that there are no channelled emission from the waste operations and that all the high value materials (present in the dusts) are captured in the filter systems. The filter media and HEPA filters are then sent for recovery.

All materials processed are solid in nature and treatment activities take place inside the enclosed buildings.

7. Environmental Risks

This section provides a high-level summary of the environmental risks associated with the proposed permit variation and explains how those risks are identified, assessed and controlled. Detailed risk evaluation is provided in the standalone Environmental Risk Assessment see **Appendix F**

The proposed variation does not introduce and fundamentally different types of waste or any significantly different operational processes. The variation reflects the increased throughput over installation thresholds, additional waste codes and an extended permit boundary.

Environmental risks therefore remain consistent with those previously assessed for the existing site, subject to updated controls and management arrangements.

A summary of the key environmental risks and how they are managed is provided below:

7.1. Odour

The waste types handled at the site are predominantly solid metallic wastes and articles. Techemet will not accept any odorous wastes on site. The processes carried out on site do not generate any odours or use odorous materials.

Odour risk is therefore negligible and additional odour management plans and controls are not required.

7.2. Noise

Noise associated with site activities arises primarily from vehicle movements, material handling and mechanical processing (including cutting and sorting operations).

A dedicated Noise Assessment has been prepared for the facility as **Appendix J**.

The assessment concludes that noise impacts are acceptable and can be adequately controlled through existing and proposed operational measures.

Noise controls are supported by:

- Predominantly internal processing
- Activity limitations depending on the time of day
- Management controls implemented through the EMS

7.3. Emissions

Potential emissions from the site are principally associated with dust and particulate release during handling, cutting, sorting and sampling of materials, including the potential release of fine catalyst dusts or refractory ceramic fibres.

There are no channelled air emission from the waste management activities - risks are addressed through a combination of engineering controls as below:

- All activities are carried out in the enclosed buildings
- Captured at source using LEV systems
- Passed through primary filtration media
- Further treated using HEPA filters to remove fine particulates
- Returned to the internal building environment rather than discharged externally
- House keeping

Large vehicles are loaded and unloaded in the rear yard area in a designated location where the containers are inspected and labelled ready for transfer into the facility for processing.

Clean surface water from the yard areas are discharged via interceptors. There are no external waste treatment activities carried out.

8. Environmental Management System

Techemet operate an Environmental Management System which is ISO14001 certified as **Appendix I**

This section summarises the Environmental Management System (EMS) in place at the site and explains how it supports effective environmental control for the permit variation.

The EMS provides the overarching framework through which environmental risks are identified, assessed, controlled and reviewed, ensuring compliance with permit conditions and continuous improvement in environmental performance

8.1. Risk Management Procedures and Operational Control

Environmental risks are managed through a combination of documented procedures, operational controls and training requirements implemented under the EMS. Key elements include:

- Waste pre-acceptance and acceptance procedures to ensure wastes are suitable for the permitted activities
- Identification and management of environmental aspects and impacts
- Controlled handling, storage and internal movement of waste materials
- Maintenance and inspection regimes for plant, equipment, surfaces and drainage
- Record-keeping and traceability through site IT systems
- Incident reporting, investigation and corrective action processes

8.2. Risk Assessment and Review

Environmental risks associated with site activities are systematically identified and reviewed through the Environmental Risk Assessment process, which forms part of the EMS framework. The risk assessment considers sources, pathways and receptors, and identifies management and engineering controls required to minimise risk.

The EMS provides mechanisms for:

- Periodic review of environmental risks
- Updating procedures following changes in activities, waste streams or site layout
- Reviewing incidents, near misses and non-conformances
- Implementing corrective and preventive actions where required

8.3. Training, Competence and Responsibility

The EMS defines roles, responsibilities and competence requirements for personnel involved in waste management activities. Training and awareness arrangements ensure that staff understand:

The site has also implemented the Competence Management System form of technical competence which works in conjunction with the EMS to ensure training and competence incorporated into all activities - see **Appendix K**

8.4. Continuous Improvement and Compliance

The EMS incorporates monitoring, internal review and management oversight to support continual improvement in environmental performance. Performance is assessed through inspections, audits and management review, with actions tracked to completion.

Compliance with environmental legislation and permit conditions is supported through:

- Documented procedures
- Integration of BAT and Appropriate Measures relevant to the permitted activities into the EMS and related procedures
- Regular review and update of legal requirements

9. Fire Prevention Plan

A site-specific Fire Prevention Plan (FPP) has been prepared for Techemet Ltd in accordance with the Environment Agency guidance “*Fire prevention plans: environmental permits*” and is submitted as part of this application – see **Appendix G**

The wastes managed at the site are predominantly **inorganic and non-combustible**, including catalytic converters, refractory materials and other high-value or precious-metal-bearing fractions. These wastes do not exhibit properties associated with self-combustion and do not constitute a significant inherent fire risk

Combustible materials present on site are limited and consist primarily of:

- packaging materials (e.g. bulk bags and pallets),
- small quantities of WEEE and waste batteries,
- ancillary materials associated with site operations (e.g. oils and consumables).

Packaging and other combustible materials are present only where operationally required and are minimised at individual work areas.

The extension of permitted activities including the new EWC codes and extension of the permit boundary including Unit 10 and the warehouse extension does not introduce waste streams with higher fire risk characteristics.

Activities proposed within these additional areas are consistent with those already undertaken elsewhere on site and are subject to the same storage controls, inspection regimes and management procedures.

Potential ignition sources associated with site operations have been identified and assessed within the Fire Prevention Plan, including:

- electrical systems and fixed plant,
- mobile plant and vehicles,
- hot-work activities,
- handling and storage of waste batteries.

Control measures include planned inspection and maintenance regimes for plant and electrical equipment, formal hot-work permitting and post-work fire watches, controlled battery handling arrangements, and strict housekeeping standards to prevent accumulation of loose combustible materials.

These measures are implemented through the site’s Environmental Management System and associated operational procedures.

Fire detection, alarm and emergency response arrangements are proportionate to the waste types handled and measures include:

- fire detection and alarm systems within buildings,
- provision of appropriate fire-fighting equipment,
- defined fire-fighting, evacuation and emergency response procedures,
- maintained access routes for emergency services.

Fire-water management and pollution prevention measures are addressed within the Fire Prevention Plan and associated drainage documentation to ensure that any fire-related runoff can be appropriately contained and managed.

The Fire Prevention Plan assesses potential impacts of a fire on off-site receptors, including neighbouring industrial land, residential receptors, surface waters and groundwater.

Given the predominantly non-combustible nature of the wastes, limited external storage and the containment and management measures in place, the likelihood of a fire resulting in significant off-site pollution or environmental harm is considered low.

Security measures, including controlled site access, perimeter fencing and CCTV coverage, further reduce the likelihood of arson or unauthorised access leading to a fire incident.

10. Site Condition Report

Appendix H contains site condition report and related information and sub appendices as shown in the list below

- Appendix H.1 - Site Condition Report - Environmental Management Consultants Ltd
 - Appendix H.2 - Techemet SCR - App D SI Report
 - Appendix H.3 - Techemet SCR - App B9 HistoricalLandUse 2500
 - Appendix H.3 - Techemet SCR - App B1 GeologyDatasheet
 - Appendix H.3 - Techemet SCR - App B3 Coal Authority Report
 - Appendix H.3 - Techemet SCR - App B4 SoilGeochemistry
 - Appendix H.3 - Techemet SCR - App B5 WaterEnvironment
 - Appendix H.3 - Techemet SCR - App B6 SiteSensitivity10000
 - Appendix H.3 - Techemet SCR - App B7 SiteSensitivity 2500
 - Appendix H.3 - Techemet SCR - App B8 Historicallanduse chronology
 - Appendix H.3 - Techemet SCR - App B10 HistoricalLandUse 10000
 - Appendix H.3 - Techemet SCR - App B11 EnvirocheckDatasheet
 - Appendix H.3 - Techemet SCR - App B12 LandStabilityDatasheet
 - Appendix H.3 - Techemet SCR - App B13 UXB risk
 - Appendix H.3 - Techemet SCR - App B14 Techemet RadonReport
 - Appendix H.3 - Techemet SCR - App B2 GndStability

The Site Condition Report (SCR) has been prepared by Environmental Management Consultants Ltd on behalf of Techemet Ltd.

The SCR has been undertaken in accordance with the Environment Agency H5 Guidance – Site Condition Reports, and establishes the baseline condition of land and groundwater at the site.

The SCR will be updated with a consolidated drainage diagram (figure 5) once works are complete and the drainage layout is confirmed. Planned drainage arrangement are shown in **section 3.3**

11. Energy Efficiency

The Techemet facility operates using electricity and mobile plant such as forklift trucks have been changed to electric power. As part of the upgrades to the facility solar panels will be fitted to the new building roof.

Techemet have also identified possible future upgrades could include the use of battery storage for any excess power generated. This will be reviewed as part of the EMS and permits continuous improvement.

Appendices List

Appendix A - Techemet - High Level Process Map
Appendix A.1 EWC code lists
Appendix B - Site location and layout - Techemet - All Areas
Appendix C.1 - 1 Vanguard Techemet UK - Existing Site Drainage Plan
Appendix C.2 Drainage Unit 10 Vanguard Techemet-Ltd
Appendix C.3 - 3319_135 - Proposed Site Plan Drainage
Appendix D - BAT Assessment
Appendix E - Techemet Process Flow Diagram
Appendix F - RA 65 - Environmental Risk Assessment 30 01 2026
Appendix G - CPOL56v4 - Techemet Fire Prevention Plan
Appendix H.1 - Site Condition Report - Environmental Management Consultants Ltd
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Appendix H.3 - Techemet SCR - App B3 Coal Authority Report
Appendix H.3 - Techemet SCR - App B4 SoilGeochemistry
Appendix H.3 - Techemet SCR - App B5 WaterEnvironment
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Appendix H.3 - Techemet SCR - App B13 UXB risk
Appendix H.3 - Techemet SCR - App B14 Techemet RadonReport
Appendix H.3 - Techemet SCR - App B2 GndStability
Appendix I - 14001 certificate
Appendix J - Noise Report 16523A-20-R01-02-F
Appendix K – CMS cert