



SPECIALIST METAL RECOVERY SERVICES

- + COPPER RECOVERY
- + MERCURY RECOVERY
- + NICKEL RECOVERY
- + AMMONIA RECOVERY



CELEBRATING
20 YEARS
OF AUGEAN

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WHO WE ARE

AUGEAN IS LEADING THE WAY THROUGH RECYCLING AND RECOVERY SOLUTIONS FOR WASTES GENERATED THROUGH INDUSTRIAL PROCESSES

GROUP PROFILE

Augean specialises in managing hard to handle wastes.

We have UK waste treatment and disposal infrastructure, and we focus on delivering best environmental outcomes.

We service the Renewable Energy, Infrastructure and Construction, Nuclear and Radioactive, Processing and Manufacturing, and the Oil and Gas sectors.

Our Specialist Metal Recovery plant at Berwick-upon-Tweed offers various recycling and recovery solutions for wastes generated through industrial processes.

KEY FIGURES

2004

Incorporated

600

Employees (circa)

£133m

Total revenue (2023)

22 sites

Across the UK

THE IMPORTANCE OF SPECIALIST METAL RECOVERY

Over recent years, Augean has witnessed a steady increase in the amount of waste diverted from disposal towards treatment and recovery operations.

This is an encouraging development, as it signifies a growing commitment to adopting more sustainable waste management practices that prioritise material reuse, recycling or recovery, so that landfill is limited to wastes where it represents the best environmental option.

This shift not only helps conserve finite natural resources and reduces environmental impact, but also reintroduces recovered materials back into the supply chain, thereby contributing to our circular economy.



We are resource recovery experts, focused on closing the loop on finite resources.

Through the development of innovative recovery processes, Augean contributes to securing future supply chains.

INDUSTRIES WE SERVE

Augean operates a range of processes to enhance the recovery of metal-bearing wastes from the following industries:



METAL PLATING



CIRCUIT BOARD MANUFACTURING



CATALYSTS



CHEMICAL MANUFACTURING



METAL FORMING AND FABRICATION



STEELWORKS



PHARMACEUTICAL



PETROCHEMICAL



AEROSPACE



AUTOMOTIVE

How Specialist Metal Recovery supports Augean's ESG values

Multiple benefits can be attained where it is safe and feasible to divert metal-rich hazardous wastes to treatment and recovery from disposal – it reduces the hazardousness and enables the recovery and reintroduction of materials back into the market, and contributes to achieving the Circular Economy, which supports our Environmental, Social, and Governance (ESG) aspirations.

Through Augean's innovative Specialist Metal Recovery processes, customers can also improve their overall business model, whilst supporting the circular economy, preserving UK based supply chains and reducing potential exposure to conflict materials.

ADDING VALUE THROUGH OUR UK-WIDE SERVICES

Responsiveness: Thanks to Augean's UK-wide coverage, our highly skilled teams have the capacity and capability to respond quickly and compliantly to sites with contaminated wastes or spills.

Support: Our team is able to suggest solutions on the safest course of action, from investigation, sampling and testing, through to decontamination, specialist industrial cleaning, and subsequent, compliant treatment, transfer, recovery and disposal routes.

Established recovery and disposal routes: Augean is uniquely placed to deal with hard to handle metal-bearing wastes, thanks to established partnerships which allow transfer to Europe (TFS).



INDUSTRY-LEADING LABORATORIES

We are proud of our industry-leading laboratories and degree-qualified chemists.

To support recycling and recovery operations, our fully equipped laboratory includes state-of-the-art analytical hardware (including ICP, GCMS, Calorimetry, XRF) necessary to ensure quality control protocols. This gives confidence to the value-adding nature of Specialist Metal Recovery activity and assurances to our customers, both upstream and downstream.

All necessary external quality accreditations are maintained as a strict requirement of our customers.

OUR IN-HOUSE CAPABILITIES

Our in-house capability can treat and recover the following metals from aqueous solutions, spent and waste catalysts, filter cakes and contaminated solids:



COPPER



NICKEL



COBALT



MOLYBDENUM



TIN



PLATINUM



TUNGSTEN



PALLADIUM



MERCURY

*In an industry where waste production is significant, I sought a **sustainable solution**. Collaborating with **Augean** provided me with access to their **expertise** and **network**, which proved **invaluable** in navigating the lengthy and complex process of hazardous materials recovery.*

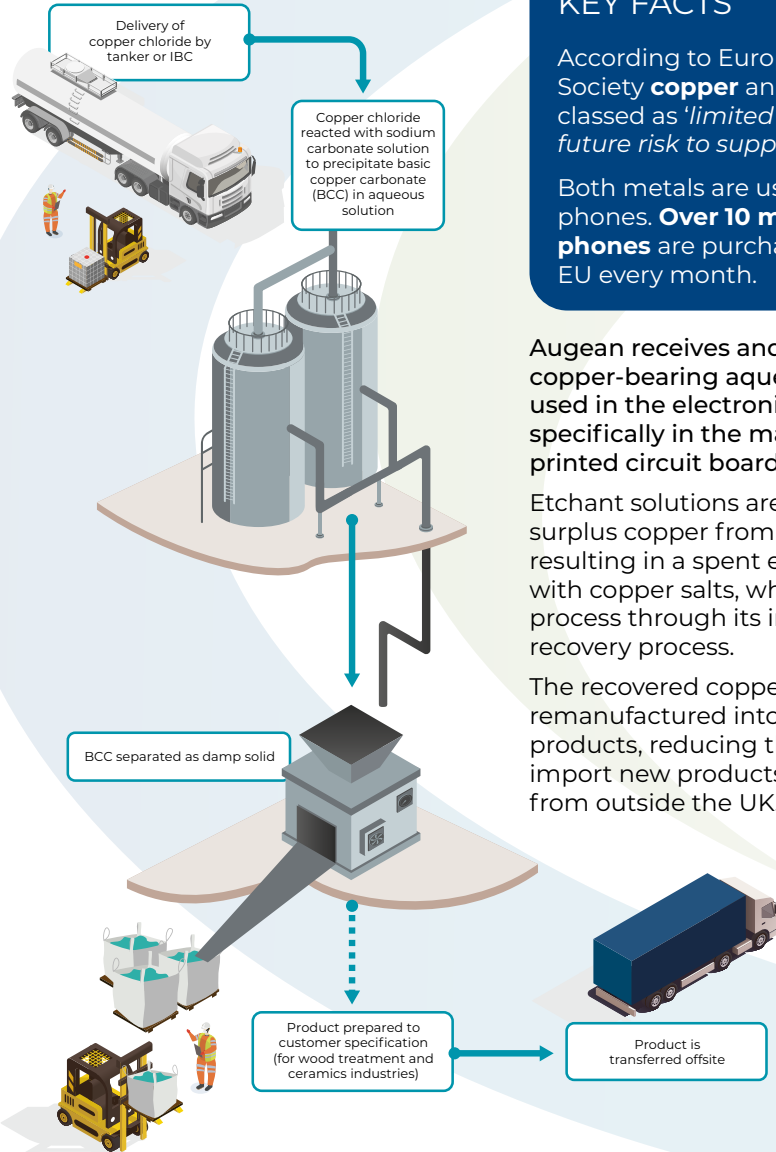
*Their **professionalism** and **commitment** to customer service are **exceptional**, and I wholeheartedly recommend their services.*

- Supply Chain Lead, E V Metals

COPPER RECOVERY

ELIMINATING THE NEED TO IMPORT
RESOURCES FROM OUTSIDE THE UK

COPPER RECOVERY PROCESS:



KEY FACTS

According to European Chemical Society **copper** and **nickel** are classed as 'limited availability: future risk to supply'.

Both metals are used in mobile phones. **Over 10 million smart phones** are purchased in the EU every month.

Augean receives and processes copper-bearing aqueous wastes used in the electronics industry, specifically in the manufacture of printed circuit boards.

Etchant solutions are used to strip surplus copper from circuit boards, resulting in a spent etchant saturated with copper salts, which Augean can process through its innovative copper recovery process.

The recovered copper is remanufactured into regenerated products, reducing the need to import new products or resources from outside the UK.



COPPER RECOVERY SPECIALISTS

Our expertise extends to processing other copper-bearing materials to manufacture copper compounds, notably copper oxide and basic copper carbonate.

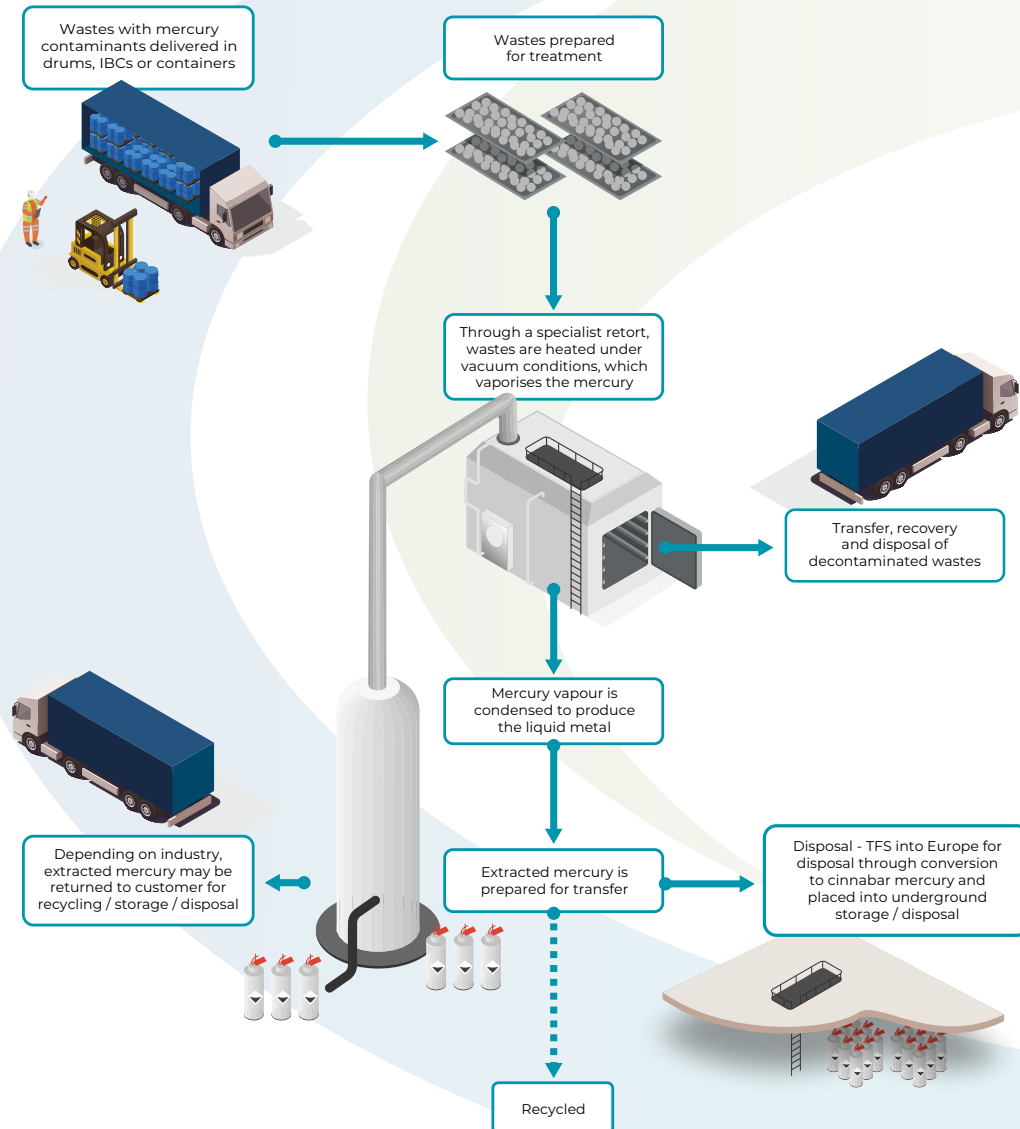
We undertake investigational programs to develop processes from the laboratory through to pilot plant and full-scale operations. This work is supported by our in-house expertise in chemical plant design and the preparation of documentation for relevant authorisations and licensing.

The success of our copper etchant recovery has led to further investigations into the recovery of other materials linked to the electronics, metal plating and chemical manufacturing industries, such as recovering iodine from contaminated solids.

MERCURY RECOVERY

AUGEAN OFFERS A COMPREHENSIVE
**RECOVERY AND DECONTAMINATION
SERVICE** ACROSS THE UK

MERCURY RECOVERY PROCESS:



TOTAL WASTE MANAGEMENT SOLUTION

Our teams provide a comprehensive mercury recovery process, decontamination and spill response service across the UK.

Legislation concerning recovery, disposal, storage and export of mercury and mercury-containing wastes is complex and requires specialist knowledge and expertise.

We have established partnerships, which permit transfer through Transfrontier Shipment (TFS) of the recovered mercury to mainland Europe, where it is converted to a stable form (cinnabar) suitable for long term underground storage. Augean provides a solution for mercury-contaminated wastes which meets the Best Available Techniques (BAT) through its mercury recovery plant in Berwick-upon-Tweed.

The mercury recovery plant is based on the breakdown of mercury compounds into metallic mercury followed by vacuum distillation to leave a residual processed material which is suitable for recovery or disposal.

The typical recovered mercury fraction is 99.99% pure.

THE WASTES WE CAN TREAT

Augean operates a range of processes to enhance recovery of mercury-bearing wastes such as:

- + Catalysts / absorbents
- + Mercury-contaminated sludge
- + Fluorescent lamp powder
- + Filter residues and filter media
- + Contaminated equipment and pipework
- + Inorganic mercury lab smalls
- + Mercury-contaminated soil, thermometers, sphygmomanometers, PPE, plant and equipment
- + Dental amalgam
- + Batteries and button cells
- + Activated carbon contaminated with mercury

OUR SERVICES TO INDUSTRY

- + Surface decontamination
- + Pipe cleaning
- + Investigations
- + Emergency spills
- + Sampling and testing of plant and equipment
- + Decontamination of plant and equipment
- + Contaminated land

NICKEL RECOVERY

OUR **INNOVATIVE TECHNIQUES**
EXTRACT **MAXIMUM VALUE** FROM
A RANGE OF WASTES

The treatment and recovery of waste materials is a crucial step towards sustainability and environmental protection, but the full benefits are not always realised. Often there are challenges and limitations that prevent the complete optimisation of these processes, resulting in metal-bearing by-products.

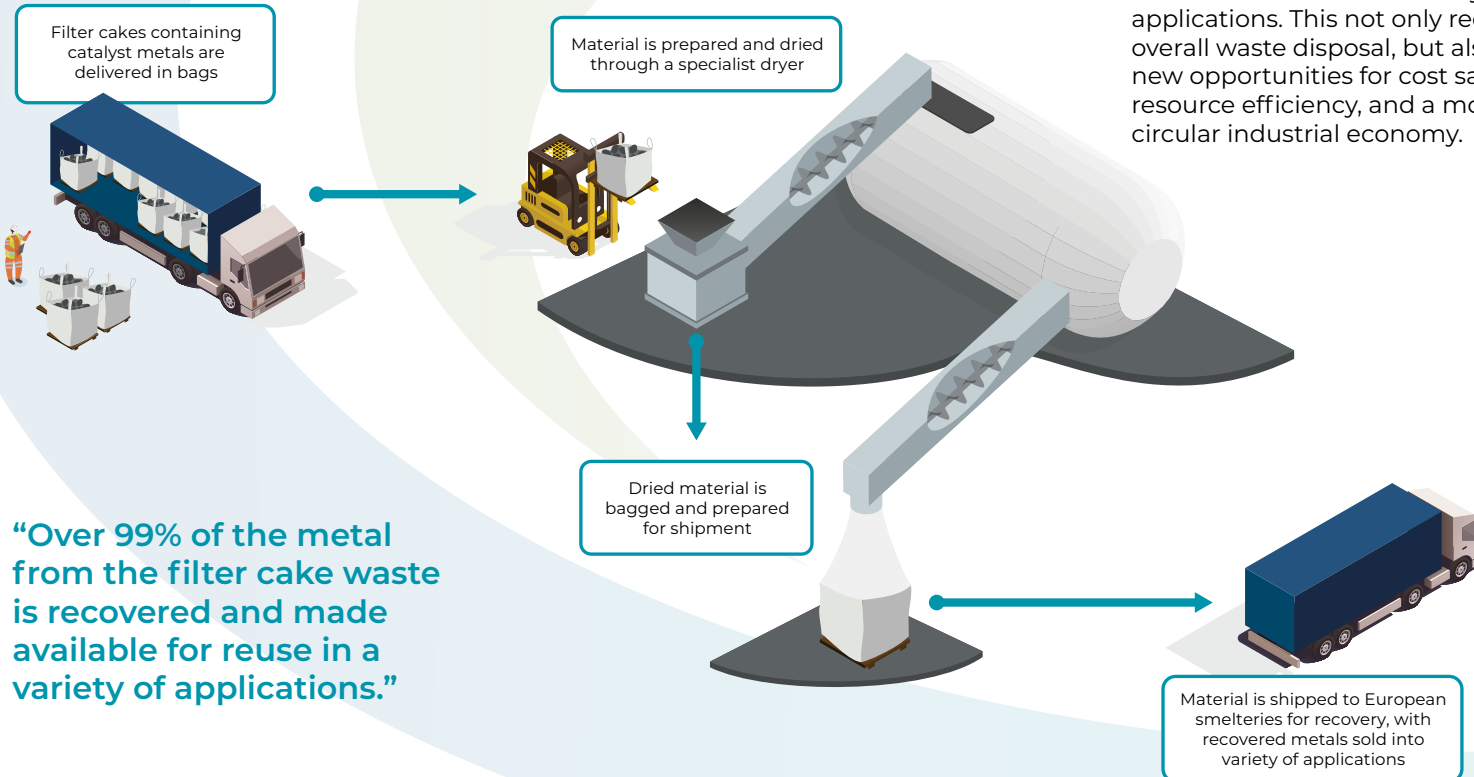
Augean has developed innovative techniques to extract maximum value from various waste streams. One approach involves the specialist processing of filter cakes - the solid waste by-products generated across a range of industrial sectors.

At our Berwick-upon-Tweed facility, we have tailored processing methods for these diverse filter cake waste streams. We are able to remove a high proportion of the moisture, enabling our recovery partners to efficiently process the residues and extract environmental value that would otherwise be lost.

Over 99% of the metal from the filter cake waste is recovered and made available for reuse in a variety of applications. This not only reduces overall waste disposal, but also creates new opportunities for cost savings, resource efficiency, and a more circular industrial economy.



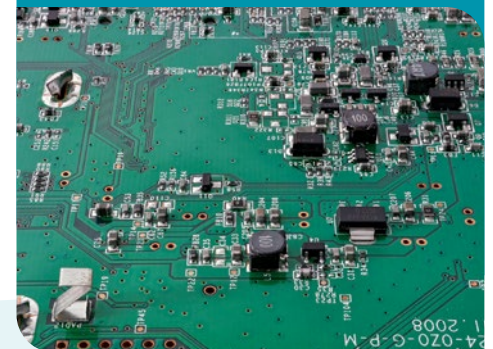
NICKEL RECOVERY PROCESS:



INDUSTRY EXAMPLES

The **metal plating industry** produces filter cakes containing valuable metal compounds that can be reused and recovered, rather than discarded.

Similarly, the **manufacture of circuit boards** leaves behind filter cakes rich in precious metals like gold, silver, and copper, which can be recovered through advanced processing.



SPECIALIST RECOVERY

OUR CIRCULAR APPROACH **MINIMISES WASTE**
AND **MAXIMISES RESOURCE RECOVERY**

CATALYSTS

Augean specialises in recovering a wide range of spent catalyst materials.

Our catalyst recovery service ensures valuable resources are diverted from landfills and instead recovered and repurposed through pyrometallurgical treatment.

We handle an impressive array of spent catalysts, including nickel, molybdenum, tungsten, copper, platinum, and cobalt variants, as well as raney nickel catalyst scrap. By consolidating these diverse catalyst wastes from our UK customers, we achieve significant operational efficiencies and economies of scale through our technical and commercial competencies.

This allows us to transport and transfer these spent materials to our extensive network of European partners and processing facilities. Advanced recycling and recovery technologies are then employed to extract the precious metals and other reusable components.



AMMONIA RECYCLING AND TREATMENT

Industrial processes and electronic / plating operations often generate waste streams with high concentrations of ammonia.

At our Berwick-upon-Tweed facility, we operate an ammonia processing system to treat these ammonia-contaminated solutions.

Depending on the specific waste, the recovered ammonia solution may undergo further treatment for reuse, recovery, or disposal through secondary processes at our Berwick-upon-Tweed plant.

The treated gas is recovered for reuse, saving on raw materials costs, and the end product of this technology is a concentrated salt solution.

“Our closed-loop, circular approach aligns with the cradle-to-cradle philosophy, minimising waste and maximising resource recovery.”



ESG

AUGEAN IS COMMITTED TO MEETING ITS ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) OBLIGATIONS

Since the company's inception, Augean has followed best practices in environmental stewardship, social responsibility, and corporate governance as well as the continuous development of ESG standards, which is an integral part of the company's growth.

Our company values, policies and management systems reflect this. Since 2005, we have produced an annual Corporate Sustainability Report (CSR), in which our ethos and operating practices are explained and our performance against selected criteria is disclosed.

ENVIRONMENTAL criteria consider how a company performs as a steward of nature, and Augean recognises the important role it plays in the environment and communities within which it operates.

SOCIAL criteria examine how we manage relationships with employees, suppliers, customers and the communities where we operate. The health, safety and wellbeing of our employees, compliance with regulations and acting as a good neighbour by minimising the impact of our operations on the wider community, are continuing business priorities.

GOVERNANCE deals with a company's leadership, pay, audits, internal controls and shareholder rights. Maintaining the highest standards of governance is integral to the effective delivery of our strategy. It ensures that the Board take decisions that create sustainable long-term value for the mutual benefit of our customers, the communities we serve, our employees and shareholders.



OUR TESTIMONIALS

We welcome the opportunity to recommend the services provided by Augean for the **removal and treatment** of a broad range of chemical wastes.

Augean brings a **high level of professionalism** to the table.

They take **considerable care** in the services they provide to ensure that all waste is removed from our site in a **safe manner**, as well as having due consideration for the **safety of our employees**.

We have been very impressed by their **proactive approach** in developing a programme to remove and treat our historical waste, as well as recognising the cost implications to our business within the process.

We have **no hesitation** in recommending the services of Augean and their **importance** to our business.

- Director, Flexible Surface Technology

Augean Berwick is a **pleasure** to do business with. Their Business Manager and Operational Team are **supportive and responsive**, able to be **flexible**, and retain a **personal touch** with their customers.

- Operations, Calachem

In an industry where waste production is significant, I sought a **sustainable solution**.

Collaborating with Augean provided me with access to their **expertise and network**, which proved **invaluable** in navigating the lengthy and complex process of **hazardous materials** recovery. Their **professionalism and commitment** to customer service are **exceptional**, and I wholeheartedly recommend their services.

- Supply Chain Lead, EV Metals

I have worked with Augean for a number of years and have always found them to be **extremely professional** and operate to a **very high standard**. The support from both the technical and sales team is **first rate**.

- Supply Chain Manager, Axil

It has been a **pleasure** dealing with Augean. They provide a **complete hazardous waste solution**, offer a **great service** with **excellent collections**.

- Business Development Manager, CH Middleton Ltd

Augean have **supported** GSK Ware for several years now. Often due to production issues we have required **quicker responses**, Augean have **never let me down**.

- Head of Operations, GSK/Veolia

THE SECTORS WE SERVICE



Renewable Energy



Infrastructure & Construction



Nuclear & Radioactive



Processing & Manufacturing



Oil & Gas



OUR MEMBERSHIPS & CERTIFICATIONS



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