



# FINDING ALTERNATIVE ROUTES FOR CONTAMINATED SEDIMENTS

## Augean Plc

Specialist services focussed on managing hazardous and more difficult to handle wastes

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## PROVIDING INSIGHT INTO AN ALTERNATIVE DISPOSAL ROUTE

Contamination in ports, marinas and dry docks is becoming a prevailing issue for authorities and users alike. All maritime owners and operators need to seek alternatives to disposal at sea for such contaminated material. The question:

What can be done to dispose of contaminated materials resulting from dredging activities?

This paper outlines a route for the treatment and disposal of material otherwise not suitable to go to sea.

This paper was produced by Augean Plc in association with the British Ports Association.



The British Ports Association's 'Port Futures' programme is a series of thought leadership and horizon scanning papers and projects, examining areas of importance and interest to the ports industry. Many of the BPA's 100+ port members have significant duties and responsibilities for conservancy and dredging and many will have experience in dealing with contaminated sediments. Often this is the legacy of past industrial activity that ports today need to manage carefully. The BPA works closely with Government on environmental matters, advising on the impact of policy decisions and acting as a conduit between officials and industry. As environmental regulation becomes every tighter across the UK, we are keen to explore and share ideas and experiences in dealing with common issues such as these. We are pleased to work with Augean in the preparation of this paper looking at potential alternative methods for dealing with contaminated sediments.

**Mark Simmonds**

*Head of Policy & External Affairs, British Ports Association*



The maritime industry is facing a potential change in technical policy with reference to the classification of material suitable for disposal at sea. As the sector leader in modernising hazardous waste management providing sustainable, compliance-led waste management solutions, we at Augean believe in expanding the management of wastes otherwise difficult to handle and look to provide the necessary support and guidance to industry leaders. We hope that by sharing our knowledge and expertise in waste management we might better prepare the maritime industry, when dealing with materials unsuitable for sea disposal, and provide guidance as to the alternatives available to them. We have teamed up with the BPA to offer you this white paper, detailing the processes used at our own facilities, demonstrating how contaminated materials can be treated in a compliant, cost effective and efficient way.

**David Bumpstead**

*Business Development Manager, Augean Plc*

Since March 1995, the UK action level guidance utilised by UK licensing authorities, has consisted of two chemical action levels – Action Level 1 (cAL1) and Action Level 2 (cAL2). These chemical Action Levels were originally proposed by the Centre for Environment, Fisheries and Aquaculture Science (Cefas) and have since shaped regulators' approach to licencing dredging activities. In 2015, Cefas began a high-level review of Action Levels, demonstrating where the UK sits in an international context and how proposed changes to Action Levels might impact the industry. As of 2020, this work is still ongoing.

Current guidance recommends that samples below Action Level 1 (cAL1) are generally considered acceptable for disposal at sea, pending considerations such as physical suitability for the disposal site and potential beneficial uses. Samples above Action Level 2 (cAL2) are considered unacceptable for uncontrolled disposal at sea without special handling and containment, and there are no current guidelines or procedures in place regarding samples which fall between Action Level 1 (cAL1) and Action Level 2 (cAL2) or evidence that should be considered to evaluate these.

Cefas' high-level review identified Action Level 1 (cAL1) as generally more conservative than other international standards, whilst Action Level 2 (cAL2) was found to be one of the least conservative of the OSPAR countries (i.e. the second highest values). As such, Cefas has concerns over the potential for failing to prevent the issue of disposal at sea licences for sub-lethally or acutely toxic sediments.

Though the outcome of Cefas' review is pending, it is prudent for owners, operators, occupiers and users of Ports and Harbours to expand their networks and explore alternatives to disposal at sea. By doing so, stakeholders can better secure their future dredging operations and pre-empt a potential change in technical policy.

## **An alternative to disposal at sea**

We at Augean believe that there is a misconception relating to land-based disposal routes for sediments derived from coastal dredging. To this end, it has been a key priority for Augean to develop strong relations with the Port and Harbour community in the UK, providing both insight and access to an alternative disposal route we have to offer. We believe this misconception has portrayed inland disposal routes as costly and inefficient, incapable of handling large volumes of wet sediment in short timeframes. This is not the case.

Disposal at sea has long been and continues to be a desirable route for sediments derived from coastal

maintenance and capital dredging activities. However, sediments exceeding the Cefas' guideline Action Levels have seen common issues relating to environmental impacts, complications in handling and the containment of contamination during disposal at sea if permissible by the regulator in the first place. Augean has developed physical assets and a process by which large volumes of wet dredged sediments can be received, stored, treated and disposed of within the same Augean facility. This provides a simple auditable in-house solution, capable of handling a significant volume of dredgings at competitive rates.

By utilising purpose-built dredging lagoons for short-term storage pending treatment, Augean's facilities are capable of receiving large volumes of dredged material in short timeframes. Augean operates facilities ideally located at Teesside near to the River Tees, and also near Peterborough, enabling discharge of dredged sediment by vessel and via HGV by road.

The availability of these permitted lined storage lagoons enables the provision of continued service, avoiding delays to dredging activities often faced when land spreading or disposing at sea occur during bad weather events. In addition to our lagoons, Augean has excellent relationships with bulk logistics specialists to transport dredged sediment in bulk across land and water. This allows for sediment discharge from site without the need for de-watering. These efficient operations remove the need to seek a licence for disposal or storage from the regulators.

Following receipt of dredged sediment at one of our sites and de-watering within our purpose-built lagoons, we transfer the sediment to our adjacent on-site permitted treatment areas where a dehydration and solidification process is undertaken using lime-based material. Once treated, the dredged material is tested and assessed, using our own UKAS accredited laboratory, in order to determine the levels of contaminants and then it is safely and compliantly disposed in an on-site cell.

As mentioned, all waste is stored, treated and re-used / disposed of within the same Augean facility. This gives clients a proven, robust, cradle-to-grave auditable in-house solution for their dredged sediment should the Environment Agency or Scottish Environment Protection Agency wish to know where the waste has gone, its treatment process and its final destination.

To demonstrate this, we have provided a couple of examples of the work we have done with inland and coastal organisations for your interest.



# Titford Pools Dredging Project

Lucy Lee, Contracts Manager from Land & Water commented:

*"Utilising Augean's facilities for the storage, treatment and disposal of wet dredgings helped us complete the Titford Pools project both on time and on budget. With Augean's ability to accept material wet we were able to bypass the de-watering process, saving both time and money."*

## Executive Summary

Working with Land & Water during Autumn 2019, Augean assisted in the transformation of Titford Pools in Birmingham.

Titford Pools is a small reservoir, which was built in the 1770s, originally constructed to feed the Titford Canal, and today feeds the wider local canal network and Edgbaston Reservoir in Birmingham.

Being located under the M5, Titford Pools has suffered from inflows of poor water quality, resulting in a lack of biodiversity and a need to dredge, treat and dispose of contaminated sediments.

## The Solution

As part of this £3.1million project, Augean worked alongside Land & Water providing treatment and disposal for over 31,000 tonnes of contaminated sediment, dredged and loaded directly onto specialist road haulage vehicles, avoiding time consuming and costly dewatering procedures.

Augean subsequently treated these dredgings at its storage, treatment and disposal facilities located near Peterborough and Middlesbrough.

David Bumpstead, Business Development Manager for Augean, commented: *"We were very pleased to partner Land & Water on the Titford Pools dredging's project. Augean's facilities located near Peterborough and Middlesbrough provided a compliant, cost-effective solution for the storage, treatment and disposal of a large volume of wet dredgings from Titford Pools over a relatively short period of time."*

Following these works, Titford Pools has benefited from improvements to the towpath network and the installation of some new bank protection, enabling easier and better access for local communities and visitors in making use of this fantastic open space.



# Dredging Deep-water Quays on the River Tees

Maurice Dawson, Chairman of AV Dawson said at the time

*“Working with Augean was a pleasurable experience and their positive can-do attitude solved many problems. I believe that both Augean and AV Dawson have benefited from the work. Augean was able to use the dredged material to help dehydrate the wet dredgings, whilst providing AV Dawson with an affordable means of disposal”*

## Executive Summary

Augean supported AV Dawson during the excavation and disposal of river dredgings for its £3.2 million deep-water quay development projects.

AV Dawson is situated on the River Tees, south of Middlesbrough and attracted several offshore support companies to set up a permanent marine base at its quays. The growing demand for this business led to a £3.2 million deep-water quay development project.

Once completed the deep-water quay was 150 metres long and 14 metres deep at high tide. A number of delivery stages had been required to achieve this and Augean provided specialist support for the removal and treatment of the dredgings.

## The Solution

The project required Augean to coordinate transport and achieve efficient turnaround times when handling the off-loading of the dredgings. This involved constant communication with the site staff, specialist haulage contractor and the client to adapt to the characteristics of the dredgings that were excavated.

Jason Mockett, Augean’s Head of Construction and Soils Strategic Development Manager said, *“Finding out the consistency of dredgings is vital. When dredgings have high water content the turnaround times between sites are impacted because the material must remain stationary in the haulage vehicle until it settles. Specialist vehicles are used to transport this difficult material safely and securely.”*

*“Once the dredgings reach our site we have a highly qualified specialised team that handle hazardous and difficult waste streams” said Jason. “Our team ensures the waste is efficiently transferred to the appropriate location onsite and that all required paperwork is promptly checked and signed before the hauliers return.”*



## Summary

Augean has worked alongside many key stakeholders within the inland dredging industry, providing and perfecting the process and procedures to manage, treat and re-use/dispose of large volumes of dredged sediments, both hazardous and non-hazardous, in a compliant, cost effective and efficient way. We have the permitted assets in place for the storage and subsequent treatment and disposal of hazardous and non-hazardous dredged sediment, both wet and dry, in large quantities over short periods of time.

Facing a potential change in technical policy, it is vital that Port and Harbour owners, operators, occupiers and users take the necessary steps to prepare for what comes next. By exploring complementary alternative options to disposal at sea for all dredging activities, capital or maintenance, contaminated or not, is one step towards security in operations at Ports and Harbours.

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Specialist services focused on  
managing hazardous wastes