

# Alpheus

an awg company



## **INTRODUCTION TO ALPHEUS ENVIRONMENTAL**

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## INTRODUCTION TO ALPHEUS

Alpheus Environmental Ltd offers both industrial and commercial customers a specialist service in water and wastewater asset management. Alpheus is part of the AWG group of companies, a £1.8 billion turnover Infrastructure Group. As a wholly owned subsidiary of AWG, Alpheus has access to considerable technical resources including Anglian Water, Morrison Utilities and Morrison Construction and Purac.

Alpheus was formed 13 years ago to specialize in the operation and maintenance of industrial water and wastewater treatment plant and now employs c.75 staff nationwide. The Head Office is based at Bedford, with regionalised depots at strategic locations across the country.

We currently manage or maintain the water related assets of a wide range of blue-chip companies and have developed extensive technical and operational knowledge of a broad range of physical, chemical and biological processes. Much of this knowledge derives from real experience of operating and maintaining water treatment facilities.

Key customers include Shell, Texaco, BP Oil UK, Buxted Chicken Limited, Arla Foods, Milklink, Brecklands District Council, Derby City Council, Travelrest Restaurants and various MoD sites. We are an ISO 9001 and ISO 14001 accredited company with the backing of Anglian Water's engineering, scientific and laboratory services as well as Europe's largest telemetry system. Our skilled operational and management staff offers a 24-hour National emergency service and dedicated Help Desk.

As part of a large utilities company, we work closely with, and have access to the substantial resources of our parent company, including Morrison Construction, PURAC, and AWG utility Services.



## Experience and Technical Ability

Alpheus Environmental have over 13 years of experience in industrial water and wastewater treatment. We operate across a broad range of industrial applications and processes; from the Operation and Management of small package treatment plants right through to the supply of high purity water via membrane technologies. The diversity of applications ensures that we have developed excellent Mechanical and Electrical skills and experience as well as the technical expertise needed for the operations of complex chemical, physical and biological processes.

One of our current applications involves the provision of high purity water derived from sewage effluent via a multi-award winning scheme to the Peterborough Power Station:

### HIGH PURITY WATER SYSTEM – PETERBOROUGH POWER STATION



Until late 2000, the 380 MW gas turbine power station at Peterborough used mains water in its de-mineralisation plant for boiler-feed water production. This is a widely used process but there are significant costs associated with chemical regeneration of the

de-min resins, rinse water, pumps and waste chemical and wastewater disposal. Alpheus approached the power station with a proposal to supply high purity water via an innovative membrane process, utilising sewage works final effluent as its raw water source. Re-use of a waste product has achieved massive savings of water and chemical use as well as higher productivity. In addition, the plant has won a number of process and environmental awards.



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## WHIPSNADE WILD ANIMAL PARK

Alpheus has carried out extensive wastewater works throughout the animal enclosures at Whipsnade Wild Animal Park. The first phase, which is now complete, incorporated the penguin, seal and chimp enclosures whilst the hippo and elephant enclosures are also due for redevelopment shortly.

In essence the wastewater is collected from the individual animal enclosures and travels down to a series of attenuation pools and finally to a reed bed system where it is treated nearby lake. The collection of attenuation pools allows the settlement of solids as well and encourages local wildlife e.g. butterflies, insects, plants to thrive in the area. The use of the reed bed system also helps to enhance the environment as it naturally removes pollutants from the dirty water. The first phase of works has now set a precedent for the next two phases of the project.



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## THE SANCTUARY – PRIDE PARK



Until the mid 1990s, Pride Park was an area of contaminated, derelict land east of Derby City Centre. It had been used for industrial and Domestic landfill, a gas and coke works and gravel extraction. The ground had been heavily contaminated with a cocktail of toxic substances. The conditions of the site and levels of contamination were hindering re-development of the land. A 10m deep containment wall was required on two sides of the site and treatment of the leachate before entering the River Derwent.

Alpheus Environmental has been running the Pride Park site on behalf of Derby City Council since 1997. Daily responsibilities include on site include the general running of the treatment plant, managing the utilities, the maintenance of on-line monitors as well as the monitoring of boreholes and grounds maintenance. Successful plant operation has been achieved whilst adhering to tight consent regulations. Significant utility cost savings have been achieved at the Park since the start of this 15-year contract.

The Sanctuary – a Bird and Wildlife Reserve at Pride Park was officially opened in July 2004 by the Rt Hon Margaret Beckett MP. Alpheus Environmental welcomed the chance to advise and assist with the construction of The Sanctuary as part of our on-going commitment to the Park – the Reserve will encourage sustainable development by playing host to a wide variety of birds, the creation of specific pools will also attract dragonflies, frogs and toads.



Some examples of our Contract base include:

- 5-year contract for Operations and Maintenance of a large activated sludge plant at Staplemead Creamery
- 5 year O&M for the water and wastewater assets of 8 Arla Foods and 4 Milklink sites
- Flag Fen – Peterborough Power Station
- 15-year contract with Derby County Council for O&M of Pride Park contaminated groundwater treatment plant (chemical oxidation followed by biological aerated filter)
- 10 year Build, Own, Operate and Transfer (BOOT) scheme for Buxted Chicken effluent treatment plant
- Contract to carry out extensive wastewater works throughout animal enclosures at Whipsnade Wild Animal Park
- Ongoing O&M contract for Bedfordshire County Council – Sundon leachate treatment plant

## **Project Management Services**

Alpheus and its parent group AWG plc have a first class track record of strong project management in many different sectors including utilities, rail, construction, and of course water related. High profile projects such as the Falkirk Wheel for British Waterways, the new funicular railway in the Cairngorns and managing the AMP (Asset Management Programme) at over £350 million have won various industry awards. Often our teams work in potentially hazardous environments with complex technical objectives and a wide range of stakeholders to satisfy. Our project management disciplines are supported by key process knowledge and strengths in planning, cost estimation and control and risk management.

Within Alpheus our project team includes strong engineering and process knowledge with engineers and project managers who are capable



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of troubleshooting, consultancy and extends to include full turnkey projects. Projects range from resolving odour and septicity problems, identifying and proposing capital and process solutions to non-compliant plant as well as design and build of new plant.

In many cases the team now manage our clients whole capital programme for environmental issues, including water infrastructure and treatment schemes. As part of these projects they also undertake negotiation with planners and regulatory bodies for both individual projects and programmes of work and in most cases Alpheus will take the 'Principal Contractor' role under Construction, Design & Management (CDM) regulations and in some instances will also assume the 'Planning Supervisor' role.

As part of an experienced outsourcing and asset management group Alpheus are used to forging partnerships with clients to deliver savings through project flex, better design and value engineering techniques.



## Mobile Engineers

In addition to our technical experience of treatment technologies, we also have extensive experience of mechanical and electrical maintenance. Controlled from our office based in Bedford, we have mobile field crews operating from various locations around the country. These are the engineers that cover the majority of our "Nationals" type contracts, one of which includes a 7-year contract to provide national Planned Preventative Maintenance (PPM) of wastewater assets for over 170 Little Chef restaurants.

Some other examples of our Nationals Contracts include:

- Rolling O&M contract for 568 Greene King restaurants and pubs
- 3 year contract for Whitbread Restaurants and pubs
- 3 year contract for 80 Shell forecourts

As well as servicing our National's contracts, these mobile crews also provide rapid response M&E back-up for our Industrial sites.

Mobile engineers are based in Northallerton, Stalybridge , Lincoln and at other strategic industrial sites throughout the UK. Typically each crew comprises two members, one mechanically trained and one electrically trained, travelling in specially equipped vehicles. On board we carry sufficient equipment and tools to deal with the majority of problems encountered on site.

All our crew members are trained and certified to operate in confined spaces (such as those in wet wells of pumping stations) and carry all of the necessary safety equipment in their vehicle.





## Health and Safety

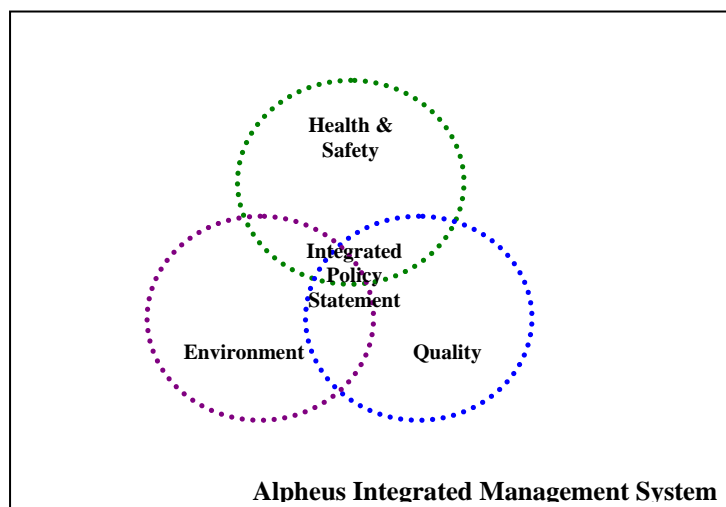
Alpheus view health and safety as integral to the success of our business - this is reflected through our *Integrated Management System*.

## Introducing the Integrated Management System

The services offered by Alpheus Environmental are underpinned by three core values. These are:

- To minimise the company's effect on the environment
- To provide a consistent and reliable service
- To protect and develop our employees

To achieve these core values, all strategic decisions and day to day operations must consider health, safety, environmental and quality aspects with equal importance. The Integrated Management System was introduced to promote an all encompassing approach to operations. The diagram below demonstrates the compatibility and synergy between the management disciplines.



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The Alpheus Integrated Management System is currently accredited to BS EN ISO 9001: 2000 (quality) and BS EN ISO 14001: 1996 (environmental). Although not accredited to OHSAS 18001, the Integrated Management System follows the principles of this standard.

The effective operation of the Alpheus Integrated Management System is dependent on a number of control methods, procedures and management tools which are highlighted below.

## **Compliance with Legislation**

Alpheus operations are significantly affected by health and safety and environmental legislation. It is therefore critical that changes in legislation are monitored and working systems adapted to ensure compliance. The HSEQ Manager regularly reviews developments in UK legislation and maintains a legal register of relevant regulations. The register also outlines the basic requirements so that it can be used as a reference document for employees. Where changes in legislation are believed to impact on Alpheus operations, these are raised with the HSEQ Committee so that appropriate action can be taken.

As well as legal compliance, it is also important to consider the requirements of the client which are just as significant if a contract is to operate correctly. Client specific codes of practice, health and safety policies and procedures and safe systems of work are all identified prior to contract commencement.

In addition to the client's own policies, the Alpheus Integrated Management System must also take into account AWG Corporate requirements. It is therefore aligned with the AWG Health and Safety Governance document which sets out the health and safety standards for companies within the AWG Group.



## **Risk Analysis**

A fundamental principle behind the operation of the Integrated Management System, is risk analysis. At the strategic level, risk analysis is carried out for each Business Unit in order to identify potential areas of concern that may impact on financial, health and safety, environmental and/ or quality aspects of the company's operations. Where issues are identified, appropriate actions are agreed as part of an HSEQ improvement plan to ensure that the principle of continuous improvement is maintained.

Risk analysis carried out prior to the start up of a new contract. This ensures that failures in service are minimised by considering, for instance, communication links with the client and outside agencies, resource requirements and skill levels. The ultimate aim is to ensure total customer satisfaction.

## **Auditing and Inspections**

Internal audits are carried out by the HSEQ Manager and HSEQ Advisor in line with an audit programme. The audits' target legal compliance, best practice and operations in accordance with working procedures. Where shortfalls in the system are identified, these are logged onto the Alpheus Issues Database. Appropriate corrective and preventative actions are identified and assigned to an 'owner' with an agreed completion date so that remedial actions are completed in a timely manner. Results of internal audits are reported monthly by the HSEQ Manager to the Alpheus Board and included on the agenda for the HSEQ Committee.

In addition to the audit programme, key personnel are tasked to carry out site inspections at a defined frequency.



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Those that are required to carry out inspections include area Supervisors, Account Managers, Operation Managers and the company MD i.e. those with an vested interest in the performance of the sites on which Alpheus operate. Inspections are scored in such a way as to allow comparison between crews, contracts and business units. Where significant issues are identified, these are again entered on the Alpheus Issues Database and enter the corrective/ preventative action process.

## **HSEQ Committee**

The HSEQ Committee is made up of individuals across the company who are able to contribute to, and have an impact on, strategic decisions with regard to HSEQ and the implementation of initiatives. The Committee meets on a quarterly basis and is chaired by the company MD. Minutes are available to all employees, either through committee members, or on company notice boards.

## **HSEQ Reporting**

All employees are responsible for reporting HSEQ related issues without fear of recrimination. This open approach encourages all incidents to be recorded which ensures that information used by the HSEQ Manager is reliable and can be regarded as a true representation of the company's performance. Issues to be reported include health and safety accident and incidents, environmental incidents, non-conformances and customer complaints.

The HSEQ Manager records HSEQ performance on a monthly basis and reports directly to the company MD. This information contributes to the monthly board reports. Measured parameters include accident frequency



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rate (AFR), lost days through sickness and accidents, outcomes of audits and inspections, and environmental performance. Data collected is analysed for trends to ensure targeted action where necessary.

### **Communication**

The culture within Alpheus promotes open and honest communications across the company. Employees are able to voice ideas and concerns through a number of avenues including direct contact with the HSEQ Manager and MD, through their appropriate representative on the HSEQ Committee and at departmental meetings with their line manager. Crew 'tool box' talks are carried out monthly and also give operatives an opportunity to feedback to the HSEQ Manager on any issues raised.

Due to the distribution of employees across the UK, significant consideration has been given to ensure that all employees have sufficient information available to carry out their work safely and in accordance with company policy. All employees are issued with an A5 loose-leafed Alpheus Employee Policy and Procedures Manual. The format allows updates and additions to be made as required. The document is quality controlled and employees are required to acknowledge amendments.

HSEQ performance and issues are regularly communicated through the Alpheus internal newsletter, *Solutions*. The newsletter is sent to all Alpheus employees on a monthly basis.

Across the AWG Group, the HSEQ Manager has access to a number of other safety and environmental professionals. These individuals get together on a periodic basis to discuss and promote best practice. A recent example was the AWG IMB Business Excellence Awards where, as a finalist in the safety award category, Alpheus presented a paper on health and safety improvements.





## **Training**

Each job function within Alpheus is assessed for minimum skills and competence requirements. This feeds into the Alpheus Key Skills Matrix which identifies training requirements of all employees. Where training is identified as required for individuals, this will be arranged by the HSEQ Manager. Training may be carried out either internally or by an approved external supplier.

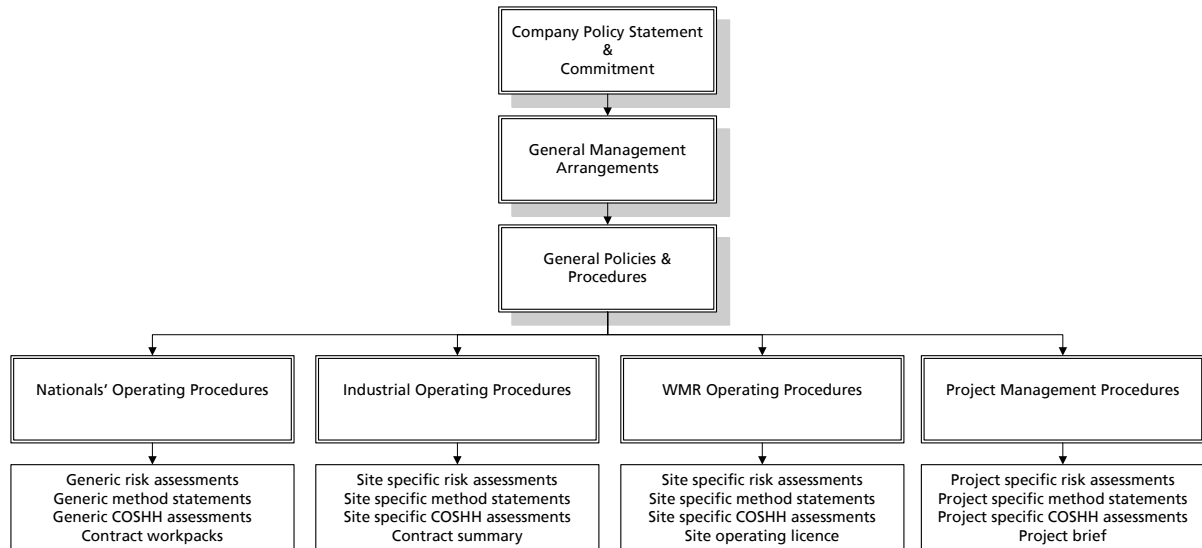
As well as training to meet key skills requirements, personal development issues are highlighted as part of the Joint Performance Appraisal (JPA) process. An individual will discuss with their line manager developmental requirements and where agreed, an appropriate course of action.

## **Contract Health & Safety Documentation**

The principles behind the Alpheus Integrated Management System are transferred to general operational requirements through thorough assessment of the contract, site and those that operate it. The diagram below outlines the structure of the Integrated Management System and how it relates to site level operations.



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## Changes in Legislation

Any changes in legislation or codes of practice may alter certain aspects of this contract including working practices, responsibilities and possibly liabilities. In the event that these alter the way in which Alpheus operate then negotiations would take place to redraft the relevant section of the contract.

## Risk Assessment

Risk analysis carried out on all new contracts prior to operational commencement, to ensure that the requirements of the client are identified and appropriate processes put in place to provide an effective and reliable service that meets the client's expectations.

One of the primary steps taken in the preparation of all tender responses is a routine Health and Safety Audit which is carried out by our HSEQ Manager.



A similar audit is carried out at the start of each of our contracts to identify risks to the health and safety of our personnel, and risks to the environment. Safety and environmental critical equipment and tasks are also identified so that appropriate controls e.g. provision of spares can be implemented.

The findings from the contract start-up audit are used to develop the HSE Operational Manual as part of an HSE Plan.

### **HSE Operational Manual**

All operational tasks must be carried out in accordance with current and future Health & Safety legislation. Alpheus will ensure that all employees working for the company are professionally trained and equipped to carry out the tasks required.

One of the key documents to enable Alpheus employees to operate on site safely and reliably is the HSE Operational Manual. This manual compliments the Technical Operational Manual by providing safety related information. As a minimum, the HSE Operational Manual will contain:

- Contract summary
- Method statements/ safe systems of work for routine tasks
- Safe system of work for non-routine work
- Task based risk assessments
- Site based risk assessments
- COSHH assessments and related MSDs
- Maintenance schedule
- Emergency procedures
- Equipment calibration and testing register



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All Alpheus operatives involved in the operation of the site are expected to be fully conversant with the HSE Operational Manual. The HSE Operational Manual is also complemented by the Alpheus Employee Policy and Procedures Manual.

The Client must inform Alpheus of any planned work or occurrences on site that are likely to impact on the Health and Safety of personnel.

## **Training & Competence**

All Alpheus operatives are measured against the requirements of the Alpheus Key Skills Matrix. All new employees undergo a detailed induction which includes health and safety responsibilities, the Employee Policy and Procedures Manual and an introduction to relevant legislation. In addition, all new employees to site must undergo a site based induction.

## **Emergency Provision**

All operational employees receive training in emergency first aid and have access to first aid facilities. All emergency first aid and safety equipment is maintained as per an inspection schedule. All safety incidents are recorded centrally so that appropriate investigations can take place, and where necessary, corrective and preventative actions implemented.

Where applicable, Alpheus operates a strict lone working procedure where individuals must report to a named individual on a regular basis. Escalation procedures are in place in the event of a missed call.



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Wherever possible, emergency situations are controlled at source through risk analysis and assessment. However, in the event that an incident does occur, emergency procedures are in place as part of the HSE Operational Manual.

### **Occupational Health**

Alpheus employs the services of an Occupational Health provider (Lomack Health Care, Bedford). All new employees must complete a pre-employment health questionnaire with existing employees completing an annual assessment. This ensures that Alpheus can monitor any changes in an individual's status, and where necessary, implement controls through the use of a personal risk assessment.

All employees working in the waste water sector are made fully aware of the risk of Leptosporosis (Weil's Disease). A letter is provided to the employee to keep on their GP's file, as well as an credit card sized information card which can be produced where necessary. Employees are encouraged to gain inoculations against tetanus, polio and Hepatitis A.





## Environment

The core competency of Alpheus is the operations and maintenance of other companies water and wastewater assets. Environmental management is an integral part of the Alpheus Integrated Management System which has been described previously. The system is accredited to BS EN ISO 14001: 1996.

Environmental aspects are considered as part of the contract start-up site audit. Where significant issues are identified, appropriate controls are put in place. Example control methods include process optimisation to reduce the use of chemicals, emergency spill procedures and routine sampling of waste water effluent.

Environmental training is a core part of our training schedule, and includes topics such as legislation and COSHH risk assessments. Many of Alpheus' employees have gained environmentally related degrees and hold membership with related organisations e.g. IEMA and CIWEM.

Many of our contracts are operated under a discharge consent from EA/SEPA. Through experience we have developed a strong working history and well defined communication channels with the regulatory bodies.

