WCS Group

Safe Efficient Compliance

MARLOWE Critical Services

- WATER TREATMENT
- WASTEWATER
- WATER HYGIENE
- AIR HYGIENE
- WATER ENGINEERING
- TRAINING SERVICES
- ASBESTOS

Water Treatment and complete water lifecycle management

Case studies

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services

From the biggest picture to the smallest detail, **no-one understands and embraces Water Treatment and control improvement quite like WCS Group**

WCS Group is the leading water treatment, chemical supply, water engineering and wastewater specialist and leads the water treatment division of Marlowe Critical Services. We manage water throughout the lifecyle. We operate through local service delivery teams covering every UK postcode and the Republic of Ireland. We have multiple accreditations which can be viewed at **www.wcs-group.co.uk/accreditations-respository**. We work extensively across NHS and Care Home sites, Leisure & Hospitality, MoJ and HM Prison sites, schools and universities, national retailers, manufacturing and industrial sites. We are the UK No.1 for FM service delivery.

We provide technical consulting, trouble shooting, water chemistry, extensive water testing and interpretation to help you understand risk to closed and open water systems, potable water, human health, system integrity and asset lifecycle. We're straight-talking and provide expert water engineering and water treatment. We also manufacture and toll blend our own chemicals in the UK (over 1,700 formulations).

Water treatment, process and control is not easy. New technology is continually evolving and we embrace and introduce it. At WCS Group, we're known for outstanding commercial and industrial water treatment, system improvement, enhanced safety and operational efficiencies.

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services

At a glance

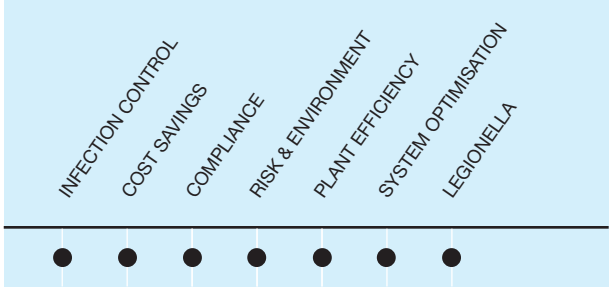
We have catalogued case studies by relevance in the following categories: Infection Control, Cost Savings, Compliance, Risk & Environmental, Plant Efficiency, System Optimisation, Legionella.

	INFECTION CONTROL	COST SAVINGS	COMPLIANCE	RISK & ENVIRONMENT	PLANT EFFICIENCY	SYSTEM OPTIMISATION	LEGIONELLA
Sugar and animal feed producer	●	●	●	●	●	●	●
Subsea test and research facility	●	●	●	●	●	●	●
FTSE100 commercial property company	●	●	●	●	●	●	●
Plastics manufacturer	●	●	●	●	●	●	●
Business school and University	●	●	●	●	●	●	●
Industrial and engineering company	●	●	●	●	●	●	●
Manufacturer and distributor of metals	●	●	●	●	●	●	●
Large salad and veg processor	●	●	●	●	●	●	●
Centre for Process Innovation	●	●	●	●	●	●	●
Commercial broadcaster	●	●	●	●	●	●	●
Manufacturer of engineering components	●	●	●	●	●	●	●
UK commercial bakery	●	●	●	●	●	●	●
National hotel chain	●	●	●	●	●	●	●
UK commercial pie and food processor	●	●	●	●	●	●	●
Higher education	●	●	●	●	●	●	●
Soft drinks manufacturer	●	●	●	●	●	●	●
Communications provider	●	●	●	●	●	●	●
Frozen potato products manufacturer	●	●	●	●	●	●	●
Food canning manufacturing plant	●	●	●	●	●	●	●
Fresh vegetables supply and preparation	●	●	●	●	●	●	●
Global food brand	●	●	●	●	●	●	●
Dairy	●	●	●	●	●	●	●

WCS Group

The H_2O experts

MARLOWE Critical Services



Case study
Sugar and animal feed producer

Overview

The company maintains 4 x state-of-the-art UK production sites that operate 24/7 365 days a year. They're incredibly complex and produce sugar, aggregate, animal feed, bioethanol, electricity, top soil, tomatoes and lime. The company's water usage is huge and management of water affects day-to-day operations, H&S, hygiene and production costs.

Legionella and other risks from water systems are regarded by the company as a high priority strategic risk to their business.

Our approach

We have been working for over four years delivering a highly structured solution;

- We carry out frequent water testing in collaboration with on-site laboratories
- We help maintain optimal system efficiency and full and exacting compliance
- Chemical usage is reviewed continually to reduce environmental impact and cost
- Water hygiene compliance is monitored and managed through an eLog Book

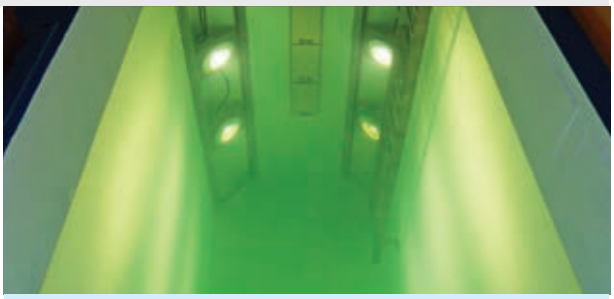
Outcome

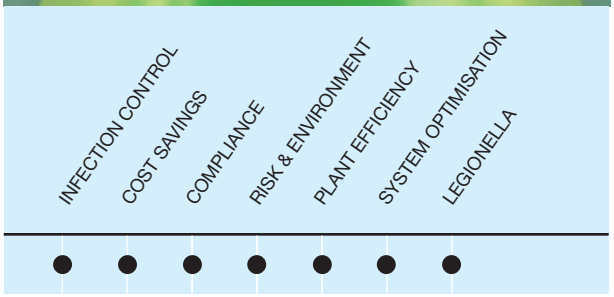
Reduced chemical usage has enabled cost savings and improved environmental impact.

Improved visibility of monitoring data has increased compliance and control of risk.

Several HSE audits and inspections have been carried out, all with successful outcomes.

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services





Case study

Subsea test and research facility

Overview

The company is a leading provider of flow equipment products, systems and services to worldwide oil, gas and process industries – especially drilling companies and process owners. They use deep test water pits (exceeding 90,000 litres) to help research pressure and flow outcomes for clients worldwide.

Our approach

We were brought in over five years ago to help treat and manage water and improve plant and chemical dosing

- Water is tested daily to combat bacterial growth and research a 're-set'
- 'Smart' filtration is used to recycle water and drive significant efficiencies
- We have tested and created a unique blended dosing solution
- We have introduced regular training, automated on-line monitoring and corrosion solutions to support hydro and gas testing sites and equipment

Outcome

Water quality has been transformed resulting in optimal re-use and a 10% reduction in mains water use.

Multi-media filtration with automatic backwash, WebMaster monitoring, inhibitor dosing, tailored dosing, skimming systems and corrosion monitoring has been combined alongside extensive training and the creation of a full management programme, to help the customer control and manage water.

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services

Case study
FTSE100 commercial property company

Overview

The company acquired what was Leeds Shopping Plaza and converted it to a modern office block. The site has three closed systems (LTHW, Chilled and Condensate). The FM manager required water treatment and hygiene services including quarterly monitoring for pH, Conductivity, Corrosion, Iron and Glycol. Areas within the LTHW, Condensate and Chilled system were found to have major blockages through build-up of sediment and sludge, which revealed unacceptable bacteria growth, foul smelling and discoloured water. We were required to stabilise and improve all systems reliably and quickly.

Our approach

We were able to provide indicative benchmark guidelines and a rapid recovery plan;

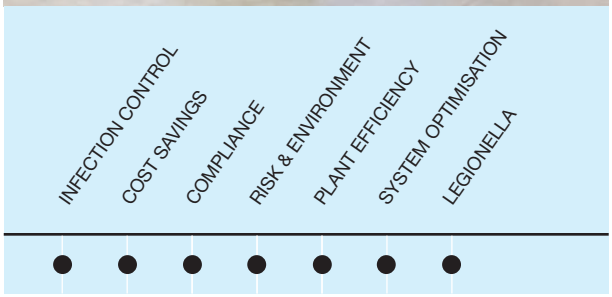
- We tested and analysed samples and created a photo document for systems, piping and key equipment
- We installed strainers on all three systems alongside the use of a solid chemical online cleaner
- We reduced iron levels with the use of 50 micron down to 5 micron filter bags over the course of a 5-month period
- We introduced a solid chemical biocide to penetrate and remove biofilms
- We re-tested and refined dosing, delivery and chemical cycles to achieve optimal water hygiene and compliance

Outcome

All three systems showed significant improvements within weeks 3 and 4. Iron levels fell from 4.0 to 1.5 (Chilled and Condensate). Nitrate and Molybdate levels were gradually increased over the course of the operation. Suspended solids were reduced from 350 to virtually nil (Chilled) within two weeks and maintained.

WCS Group still maintain the system providing water treatment and water hygiene testing and monitoring. Bacteria levels are under control. Total and dissolved iron levels are down. Nitrite levels now provide appropriate protection. All three systems are operating efficiently to optimal and safe standards.

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services



Case study
Plastics manufacturer

Overview

The company is a leading design and manufacturer of custom injection and blow moulded packaging for multi-national FMCG customers in personal care, household, food and beverage, healthcare and cosmetic markets.

The 240,000 square metre site uses significant water and energy in a climate-controlled manufacturing environment. The company requires 'best-in-class' water control and process to optimise plant and equipment efficiency, reduce water usage, manage legionella risk and make better systems management decisions.

Our approach

- We created new cooling tower, domestic and chilled water systems service plans
- We set improved water system KPIs to drive efficiency, reduce chemical use and optimise cycles
- We have introduced corrosion monitoring and control, 'smart' chemical dosing and web-based data recording
- We support with weekly testing, monthly analysis and 6-month 'deep-dive' assessments and regular training
- Chemical selection and cycle changes have also helped deliver plant and equipment efficiencies
- We have reduced maintenance and admin time whilst enhancing compliance and risk management

Outcome

Significant reduction in water and chemical use.

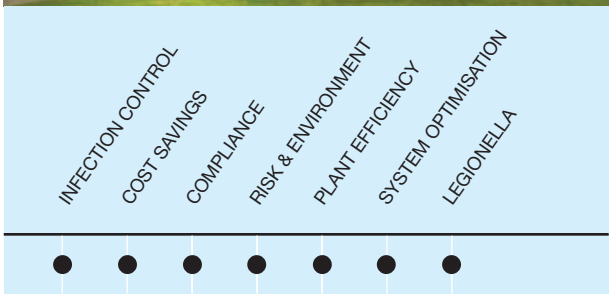
Water and Chilled water systems seamlessly integrated.

Water and cooling systems run harder, for longer, more efficiently with prolonged service life.

Site is ACoP L8 compliant and highly optimised.

" Water treatment is no longer a headache and we have total peace of mind about our systems processes and efficiencies secured. Thanks for the reminder about attending a Legionella refresher course!"

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services



Case study
Business School and University

Overview

The institution is a recognised leading world business school. Over 4,000 students, state-of-the-art facilities including a Crash Impact Centre, National Wind Tunnel Facility, Airborne Atmospheric Measurement Facility and many other transformational research facilities in technology and management.

They selected us over 10 years ago to handle water cooling tower programmes, tailored water treatment for specialist process and fluid engineering labs, cleaning, disinfectant and water hygiene management. The institution wanted "excellence" and shared knowledge.

Our approach

We tailored a 'fit for purpose' programme around bespoke H&S policy standards, HSE and L8 (ACoP L8) guidelines as well as summer periods where facilities were in less demand;

- Cooling tower cleaning, maintenance and performance is monitored by WCS Group to agreed KPIs
- We attend every month and analyse all water-connected systems and performance, producing both a visit report covering scale and corrosion inhibitor use and effectiveness, biocide and bacterial control, cleaning and chloride, automated dosage and control and legionella screening
- WCS Group monitor weekly bacteriological dipslide testing, conductivity, pH and oxidising data and regularly review Log Books
- Particular attention is paid to manage microbial populations in recirculated cooling systems
- Full water hygiene, legionella risk management, control and training is maintained

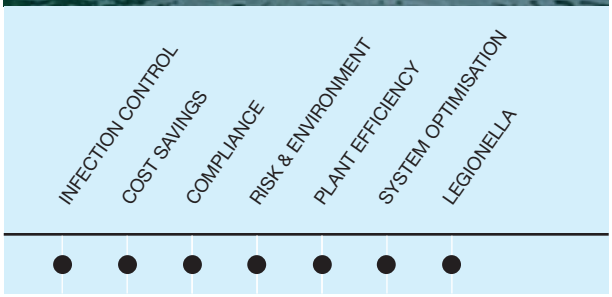
Outcome

The institution and its water management programme was commended for "exemplary standards" at a recent HSE inspection.

All buildings, water systems, heating and cooling is maintained to exacting operating, performance and safety standards well above HSE and L8 guidelines.

" Professional, always on hand to provide expert knowledge but their contribution whenever required has been exemplary"

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services



Case study
Industrial and engineering

Overview

The company is a global leader of solutions for performance-critical applications – in pumps equipment, rotating equipment services and chemtec. Guidance was required on the management of a new sub-sea test facility to test the performance of multi-phase pumps (oil and gas sector). A 1 million litre water tank was open to the environment, requiring bacterial and corrosion control.

Our approach

We designed and installed the following equipment;

- A filtration system (four cyclone filters, a sand filter and circulation pump) to process 1m litres of water every 24 hours maintaining clarity, removing debris and ensuring 100% operational effectiveness for 24/7 testing. Pneumatic motorised values are fully automated and linked to the site's centralised operating system computer
- A 200 litre dosing tank, sacrificial corrosion coupons and dosing pump to circulate a carefully selected corrosion inhibitor (COOLCHEM C252), bacterial control to meet conductivity and Redox KPIs
- A 15Mw cooling tower to remove generated heat from the pump under test

Outcome

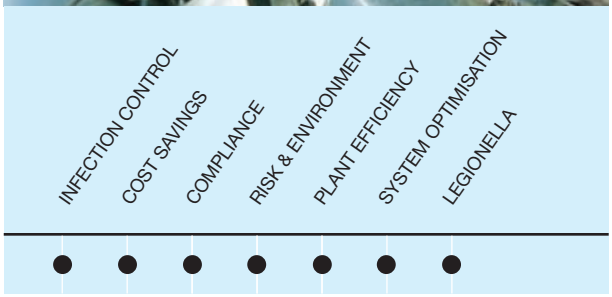
Water clarity is controlled and reliably maintained ensuring the test facility can operate uninhibited.

Chemical control and cycles are bespoke for plant and operation.

The cooling tower has been brought in-line with two other cooling towers on site, and all are managed, cleaned, disinfected and now incorporate improved control and new technology.

The company is able to maximise testing as a result of 'smart', best practice, reliable water control and processing.

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services



Case study
Manufacturer and distributor of metals

Overview

The company is a specialist manufacturer and distributor of ingots, bars, forgings and heavy wall pipes. They recycle carbon reinforced plastics and raw materials for the stainless steel industry and have high ecological and economic aims.

We were commissioned to take over all water control and cooling system management and address inherited HSE improvement notices.

Our approach

Our rapid response team had all 11 notices made "satisfactory" by HSE within two weeks of appointment including:

- Cleaning and chlorination of water cooling towers and services
- Approved Legionella training
- Comprehensive Legionella risk assessment and control implementation
- Plant and equipment efficiency was benchmarked and significant improvements were identified. Water fill packs were replaced, water flow was transformed with new fit for purpose pumps, process water cooling was improved, chemical dosing and delivery was transformed
- A 'double-cool' filtration plant was designed and installed to reduce the build up of contaminants and sludge

Outcome

Water control, management and safety was made a high priority.

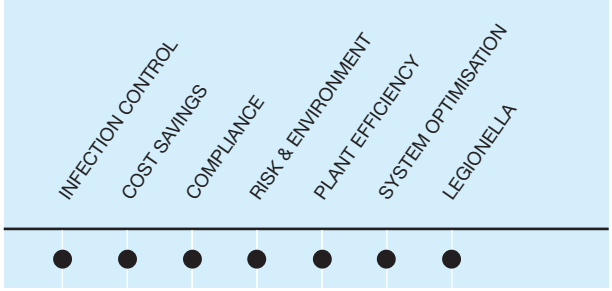
HSE "unsatisfactory" notices that were inherited before WCS Group became involved, were dealt with quickly.

Control, process and cooling improvements were identified and met transforming water use and plant efficiency.

Training was conducted enabling the company to demonstrate ACoP L8 compliance.

New technology, system control and processes have enabled new competitive advantages.

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services



Case study
Large salad and veg processor

Overview

A large north of England salad and vegetable processor commissioned an independent risk audit to verify water control performance and Legionella risk and ACoP L8 compliance. They suspected significant improvements were possible and also wanted to reduce the number of Log Books that had to be kept whilst increasing compliance.

Our approach

The audit highlighted 21 areas for improvement and a demo of WCS Group online Log Book:

- An eLog Book was installed enabling appropriate automated data reporting and record keeping
- A new chemical dosing controller unit, housing and repositioned flow pipework improved dispersion within the cooling tower saving 5m^3 of water per day instantly
- Chemical usage was reduced because over dosing was eliminated
- Water sampling was reduced across plant and domestic systems because the WCS Group explained ACoP compliance didn't require such extensive testing

Outcome

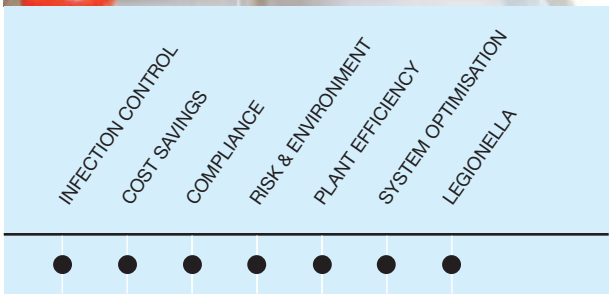
Water control, management and safety were brought up to date.

Water cooling, chemical cycles and dosing were improved.

Water usage and chemical expenditure were cut significantly.

The client received appropriate ACoP L8 Legionella training, water testing time was cut and a 'smart' web-based electronic data recording and assessment system reduced the number of Log Books and administration whilst improving compliance simultaneously.

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services



Case study
Centre for Process Innovation

Overview

The company is a UK-based tech innovation centre that uses applied science and engineering combined with high tech facilities enabling their clients to develop next generation products and processes. Management required Legionella awareness training and remedial works to the chilled water system.

Our approach

- Chilled water system repair and maintenance was carried out
- Legionella awareness and control training was completed ('Legionella Control for Everyone' WCS Group refresher course)
- We were asked to quote and take over management and maintenance of the water cooling tower. A fault was identified which had resulted in water drainage for some time, costing excessive water and chemical use
- We repaired the fault and cleaned and disinfected the cooling tower

Outcome

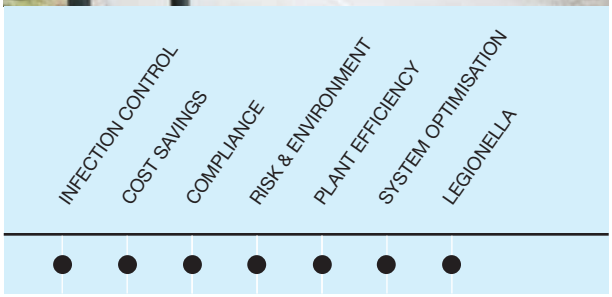
The chilled water system was restored to full health and working order without fuss.

Staff with responsibility for water systems and ACoP L8 compliance received a refresher Legionella awareness and control training course.

Water cooling tower maintenance and management was transferred under contract to us and we immediately brought about improvements which reduced water and chemical use.

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services

Case study
Commercial Broadcaster



Overview

Along with a national facilities management provider, we managed water hygiene and water treatment for a commercial broadcaster's property portfolio in the north of England. New sites and maintenance of closed and chilled water systems were added in 2014 including chlorine dosing on the set of Emmerdale village where water is drawn from a bore hole. At the time, the site reported a strong chlorine smell.

Our approach

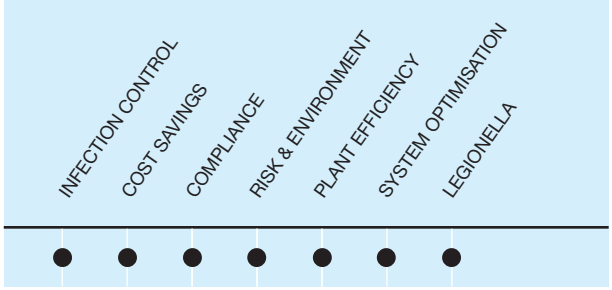
- We uncovered significant over-dosing (around 25 L of Sodium Hypochlorite had been introduced before WCS Group became involved over a 24 hour period) via a basic dosing pump linked to a water meter
- We introduced a solid chemical MICROCHEM M101 which, when mixed with water, produces a high purity method of controlling bacterial growth – safe to drink
- We introduced a new dosing control system with in-line chlorine sensing linked to a Walchem control unit
- Work was completed quickly in conjunction with the FM provider and around the filming schedule and completed within four days

Outcome

Water treatment and water hygiene was assessed, the fault diagnosed and a solution designed and installed within four days.

The site now enjoys safe, reliable drinking water. Water treatment and water hygiene is fit for purpose and more robust.

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services



Case study
Manufacturer of engineering components

Overview

The company is a multi-billion manufacturer of engineered components and products including residential furnishings, commercial fixtures, components and industrial materials. UK management wanted better water treatment control and management for their site in Barnsley and to upgrade the cooling system.

Our approach

- We were brought in under contract to make good historic water treatment maintenance shortfalls and manage two BAC VXT150 cooling towers and on site domestic water services within a structured improvement plan
- The cooling towers were relined to remedy extensive corrosion before fresh mastic and several coats of polyurethane paint were applied
- We replaced the old manual dosing system with a new, automated 'smart' dose control system and introduced a new corrosion scale inhibitor for better pH control
- We introduced two Walchem WD7410 control units and a new Iwaki pump to provide tighter control of pH, oxidising biocide and non-oxidising biocide
- We installed a new corrosion rack to meet legislation and monitor corrosion
- We addressed client concerns over contaminants entering the water system by installing a cyclone filter to improve water quality and reduce cooling water temperatures

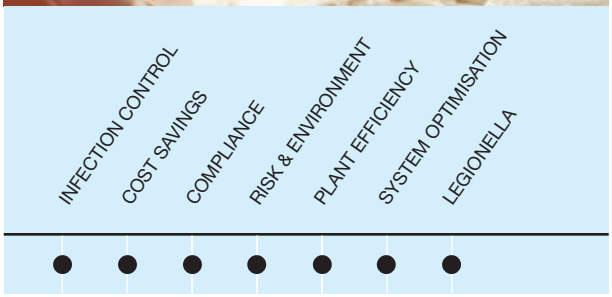
Outcome

Water systems, control, process and treatment have been transformed.

Cooling systems have been upgraded and enhanced.

We are now in the process of rolling out similar 'best in class' management across other UK client sites – however solutions are tailored to plant and equipment at each respective site.

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services



Case study
UK commercial bakery

Overview

A large UK bakery was experiencing time-consuming record keeping whilst operating steam boilers and water cooling towers and trying to fulfil ACoP L8 requirements for water hygiene monitoring. They required a more efficient and interactive system to provide evidence of compliance and 'smarter' water control.

Our approach

- We recommended and installed a WebMaster control system coupled with Walchem analytical sensors and integrated communication equipment
- 'Smart' remote monitoring and control provided safe, secure and reliable data and reporting with system configuration to the site operation KPIs
- Data is now automatically recorded and logged in a centralised analytical system which monitors water use, chemical cycles and information can be instantly printed and inserted in to Log Books
- The system also enables greater control and has enabled the company to be seen to comply and meet customer inspections and audits

Outcome

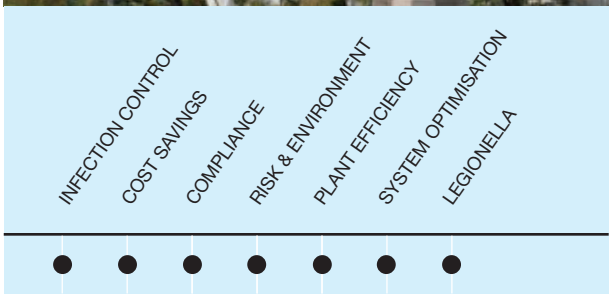
Water control, management and operating systems have been automated.

More sophisticated control systems have been introduced.

Significant time has been saved for maintenance and operations staff.

The company can also answer customer questions and meet audit information demands with ease.

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services



Case study
National hotel chain

Overview

The company is part of a top London and Shanghai hotel, wedding, conference and events group that defines luxury. The Maintenance Manager wanted a "top flight" water treatment and systems company to undertake a risk assessment and propose and install a water softener system as well as train appropriate staff about legionella awareness and control. The heating system had been upgraded and Maintenance wanted to protect the investment.

Our approach

- We conducted a water system risk assessment including the electromagnetic softeners already installed – low cost, chemical free and addressing water hardness but not solubles (such as calcium, magnesium suspended particles) and are not generally effective corrosion defence
- Tests demonstrated that scale was already a potential problem which also increases the risk of Legionella bacteria and can contribute to blockages, reduced heat transfer and increased fuel consumption (1mm of scale on a boiler tube can require 10% additional heating)
- We recommended and installed a duplex water softener to provide a constant supply of softened water throughout the hotel and help fight scale using an ion exchange resin in sodium form
- We conducted Legionella awareness and risk control training for appropriate staff

Outcome

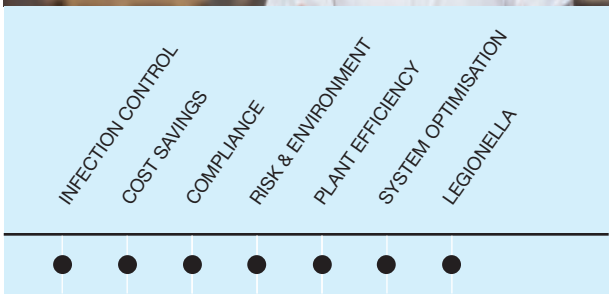
Water treatment and hygiene is 'fit for purpose' and reliable.

The hotel's investment in a new heating system is protected with effective softened water, and corrosion and bacteria control has been carefully managed.

Staff are aware of Legionella risk and have appropriate training.

" Very happy with the advice, quality of work and supervision and on-going results"

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services



Case study
UK commercial pie and food processor

Overview

The company make over 60 million pies annually. They have developed chilled, frozen and unbaked ranges and have elaborate retail and trade distribution. The company have especially high water control and management demands and require adaptive, highly responsive and reliable water systems and hygiene.

Our approach

- We were asked to review water treatment, control and process set-up, especially cooling tower systems and chemical dosing to manage bacterial growth
- We introduced a WebMaster control system providing greater control and sophisticated fine adjustments – particularly useful for conductivity and bromine levels. The system operates to set parameters and manages water for two evaporative condensers on an Ammonia plant
- The system was so effective, it was rolled out across a new refrigerated plant house within a factory extension programme

Outcome

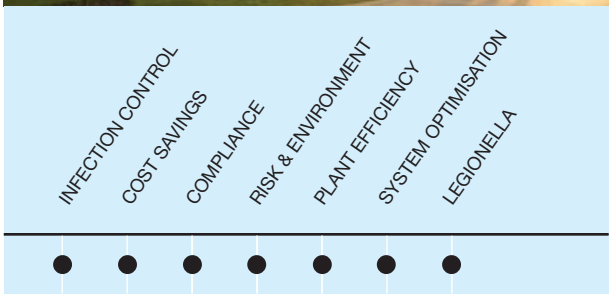
Water control, management and operating systems have been automated.

More sophisticated control systems have been introduced.

Water cycles and chemical use are more tightly managed.

The company can also answer customer questions and meet audit information demands with ease.

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services



Case study
Higher education

Overview

A leading UK Higher Education institution was undertaking a three-year £100m facilities investment programme for its 16,000+ students.

They wanted a 'fit for purpose' Legionella monitoring programme and a tailor-made but flexible water treatment and hygiene strategy based around a large campus and student schedules.

Our approach

We used its extensive HSE experience and applied it for Loughborough.

- We conducted a detailed site audit and created a photo document for systems and equipment and an asset register
- We instigated a rigorous Legionella risk assessment and management programme
- We created daily and on-going maintenance best practice programmes that staff could maintain
- WCS Group have several members of staff on site most weeks carrying out multiple tasks and independent checks including Sentinel checks, tank inspections and cleans, monitoring heating and chiller systems, water dosing systems and chemical cycles
- WCS Group provides on-going water treatment, water hygiene and Legionella Control awareness and training

Outcome

All plant, equipment and systems have been running to optimal efficiency and pre-agreed benchmarks trouble-free for several years.

Legionella awareness is high and risk management and hygiene have been very effective.

Recent HSE inspections have found no problems.

"The outsourced water treatment and hygiene company have communicated clearly with us and aid in the smooth running of our daily programmes. On the ground advice and direction has enabled us to react appropriately at all times".

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services

Case study
Soft drinks manufacturer

Overview

A leading soft-drinks manufacturer required ongoing water treatment and maintenance for its steam boilers and pasteurizers to ensure optimum efficiency in its production plant as well as general water system maintenance across eight other distribution centres and administrative offices in the UK.

Following a competitive tender process, the company enlisted a WCS Group company across the portfolio, recognising us for longstanding expertise in the provision of water treatment solutions and services to the food and beverage sector across the entire water lifecycle.

Our approach

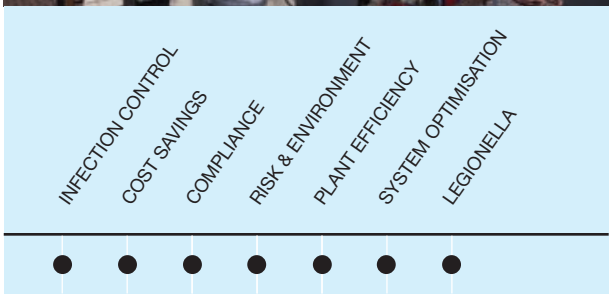
The production facility relies heavily on its steam boilers and pasteurizers. As part of its commitment to maintaining safety and uptime at the site, we implemented a chemical treatment programme to ensure the site's steam boilers were safeguarded against corrosion and the site's pasteurizers were protected against bacteria build-ups and risk of corrosion. We also identified a more appropriate chemical dosing management programme designed to more reliably dose simultaneously reducing chemical usage and optimise boiler running.

Outcome

The production plant now runs more efficiently with our water treatment engineers regularly monitoring and maintaining plant equipment to ensure continued efficiency. Regional offices and the distribution centres are also serviced within a water treatment and control programme.

The risk of Legionella is controlled effectively through our rigorous SafeCare Risk Assessment programme. We work to demanding KPIs, which have been fully delivered on since taking over the contract.

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services



Case study
Communications provider

Overview

A communications provider's flagship site in Central London has six cooling towers located on the 9th floor used for comfort cooling. Nearly 400 x 24Kg drums are carried across elevated walkways and manually decanted. The customer wanted to address safety, manual handling and environmental concerns.

Our approach

We advised on the merits of two solutions. A 200 litre Portachem chemical delivery method and Solid Chemistry. Portachem would reduce the manual handling and drum removal issues, however it would still require liquid chemical deliveries and a small investment, whilst delivering no additional benefits.

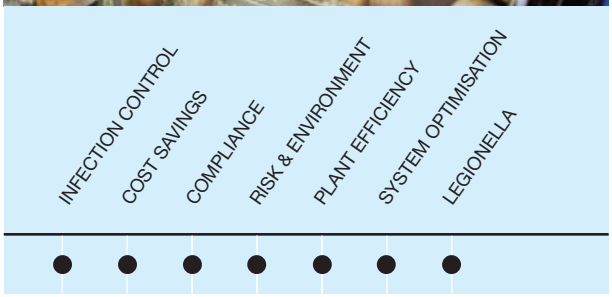
The Solid Chemistry method would remove manual handling of 25kg drums (replaced by 2.5kg jars), lower waste disposal costs, and enable chemical control and dosage to be completely automated through the use of fluorescent tracers in the chemical (in turn reducing chemical and water usage). We worked with the customer and their finance department to show ROI across just 20 months.

Outcome

The Solid Chemistry chemical delivery system and dosing control was installed on time and within budget with tangible predicted results;

- Chemical usage saving (10s of £000s) pa secured in Year 1
- Improved logistics and lower carbon footprint
- Lower usage of plastics
- Site storage requirements reduced
- Improved manual handling and site safety

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services



Case study
Frozen potato products manufacturer

Overview

The food manufacturer specialising in frozen and dehydrated potato products for the Food-service, Fast-food and Retail segments had ambitious corporate goals of reducing water and energy consumption by 50% and 30% respectively. It required a more sophisticated and reliable water management strategy and enhanced expertise.

Our approach

We undertook a site-wide survey of cooling towers, steam boilers, water treatment plant and water process services with the objective of developing proposals to rectify the problems and drive substantial savings.

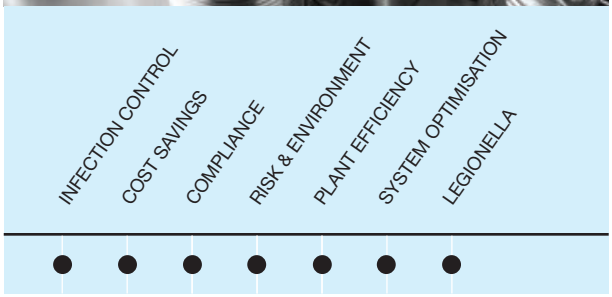
Our SafeCare Risk Assessors and water engineers leveraged the deep technical knowledge we have nationally (300+ food and beverage customers) to develop a series of benefit-weighted proposals designed to improve water treatment, deliver significant water and energy savings, optimise cooling tower and steam-raising efficiencies as well as reduce Health & Safety concerns regarding chemical applications.

Outcome

Working collaboratively with the customer's Health & Safety, Operations and Finance departments, the following changes and savings have been realised;

- Enhanced water treatment programme for condensers
- Pin-point accuracy in chemical delivery and automated blow down control via a new chemical dosing system and switch to Solid Chemistry
- £56,000 of water and chemical usage in just the first 9 months
- Improved management and operation of steam plant with enhanced control and optimised blow-down. £80,000 investment achieved a ROI within 18 months as planned
- £300,000+ savings across site maintenance annually as a result of site-wide Triplex water softening which reduced scale build-up and planned maintenance shut-downs
- A new Reverse Osmosis (RO) unit to support boiler water generated the predicted energy saving of £200,000

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services



Case study
Food canning manufacturing plant

Overview

With a global supply network and a massive portfolio of household branded and customer own-brand products, this customer is one of Europe's fastest growing food and drink groups supplying millions of consumers every day. Water management is a key element of the production process at their North East England site, which is the largest in the UK manufacturing portfolio. Compliance, efficiency and sustainability were key drivers the customer required from a more sophisticated water treatment partner.

Our approach

We were engaged to survey the company's cooling water systems and steam raising plant. Our findings highlighted that there were significant issues with corrosion in the cooling towers and carry over from the steam boilers and the customer engaged us to rectify the problems.

We introduced bespoke corrosion inhibitors via a centralised dosing station plus a localised bromine delivery system.

We identified that better water quality (and the introduction of a Reverse Osmosis system), would generate significant operating efficiencies.

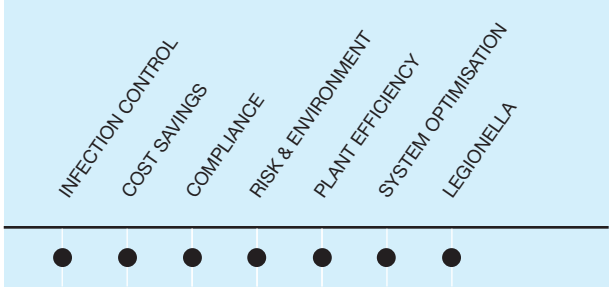
Outcome

Corrosion rates fell from in excess of 21 MPY to less than 1 MPY after just three months.

Further investment into pre-treated water for the site's cooling towers via Reverse Osmosis delivered return on investment of £250,000 per annum on a £50,000 investment.

Six years later, we are still operating the water treatment contract and act as a strategic partner on all water issues throughout the lifecycle.

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services



Case study
Fresh vegetables supplier

Overview

A UK based agribusiness which sustainably produces fresh premium and fleshy prepared seasonal vegetables supplies a large proportion of leading retailers in the UK and internationally. The customer prides itself on sustainable and responsible sourcing and therefore requires water management solutions that help the business to operate sustainably as well as safely and efficiently. The business relies on round the clock cooling in its expansive refrigerated warehouses where produce is stored prior to despatch. The company required a more robust cooling strategy with appropriate corrosion control and tight management of treated water.

Our approach

We advised how best to achieve better cooling performance and guaranteed reliability from a chemical dosing, water management control system and cooling programme. We only had space for a solution fitting in to a 1.2m^2 space.

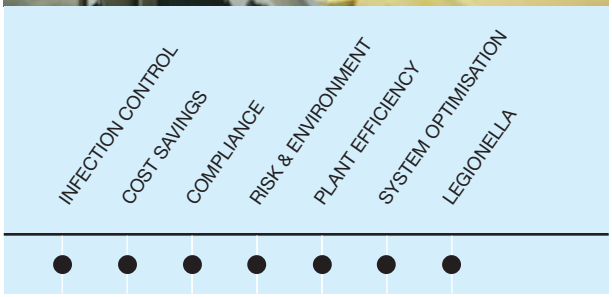
Installed in just two days, a SolidFX Solid Chemical dosing system now provides cooling towers with precise dosing, ensuring greater control through built-in PTSA tagging. This prevents under-dosing and of the system, ensuring consistent levels of protection around the clock. Taking up a small footprint and fitting comfortably into the allocated space, the SolidFX system also provides a safer working environment.

Outcome

The recommended solution met all customer criteria and has contributed to additional operating competitive advantages including but not limited to:

- Demonstrable compliance with official regulations and codes of practice
- Ensuring the extended longevity of the water distribution and cooling system
- SolidFX will safeguard the cooling tower system for 15-20 years (significantly extending the active service life of the asset and putting off an expensive capital purchase of replacement cooling towers)
- The use of Bromine tablets was removed (saving money, chemical usage and reducing corrosion risk)
- Enhanced microbiological control has been demonstrated

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services



Case study
Global food brand

Overview

A world leader in the global food industry, operates a consumer foods division producing branded and unbranded chilled foods consumed by millions of people every day in the UK, Ireland and selected international markets. Their dairy ingredients plant often relies on the local river to supplement its mains water supply as a source of influent water to feed its boilers. This extensive site has a significant water demand with two steam boilers and combined heat and power plant. The customer required more robust water management across the entire lifecycle.

The facility recently had new high-pressure boilers and Combined Heat and Power (CHP) plant installed. The challenge was getting the water composition right to meet the tight water specification required by these new boilers. The CHP plant has an even more demanding water specification.

Alongside meeting the water specifications of the new equipment, the customer wanted to achieve a reduction in both water usage and chemical usage in water treatment. They also wanted to maximise the efficiency of boilers to lower the cost of operation and maximise ROI. In addition, enhanced environmental operating KPIs were sought across water management.

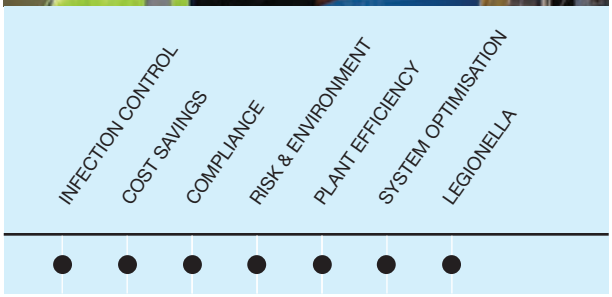
Our approach

We drew upon deep technical knowledge across water chemistry, complete water lifecycle management, water re-use, wastewater, water treatment and chemicals to advise on a justified benefits-weighted response strategy leveraging experience gained across 300+ food and beverage manufacturers.

Outcome

We installed a water treatment package that feeds pre-softened river water through various filters including reverse osmosis treatment. This achieved a low conductivity outcome of approximately eight to ten micro siemens – a significant decrease from the river water's original conductivity of approximately 180 micro siemens. This treated water was then blended with raw water to meet the water specification of the boilers – approximately 50-60 micro siemens depending on each boiler's individual specification.

WCS Group
Safe Efficient Compliance
MARLOWE Critical Services



Case study
Dairy

Overview

This dairy company prides itself on manufacturing some of the UK's best-loved products and the company's dairy facility is integral to its UK operations. When the site's water softening plant consisting of a duplex rooftop mounted water softener began to show signs of intermittent reliability, it was clear they had reached end of life and would need to be replaced to avoid increasing maintenance costs and to minimise the risk of disruption to production.

The site required its softening plant to be operational 24 hours a day, seven days a week, with an expected peak flow volume of 44m³/hr. There is a large process water tank that is primarily filled by the site's Reverse Osmosis recycling system, and the softening plant makes up the difference to the volume of between 200m³ and 700m³ of water per day.

Our approach

Military precision removal of the old roof-top water softening plant, craning it down and removal from site was balanced with assembly, crane, install, commission and bringing to operation of a replacement unit without delay paying close attention to dimensions, electrical supply and logistics.

Outcome

Following the survey, a Fleck 3900 Duplex water softener was specified with vessels to hold 1,000 litres of resin each. The new plant would include a 500 litre brine day-tank to manage the 46 tonnes estimated annual salt consumption of the plant.

Following assembly and installation, we tested the incoming water pressure, hardness and adjusted the plant's control panel settings based on the recorded level of incoming CaCO3. The plant was then programmed to regenerate each time the set water volume has passed through the system.

"Thanks to your speedy installation, we now have a fully operational and reliable softener plant that works around the clock, ensuring production uptime," said the Compliance and Facilities Manager. It was a tricky installation in a confined space located above our facility and we're pleased with how smoothly the entire project process went. I found your service very prompt, transparent, and helpful from the beginning of the survey and quotation right to the end of the installation and commissioning process in what was a tricky but smooth installation."

WCS Group

Safe Efficient Compliance

MARLOWE Critical Services

A Marlowe Critical Services company

WCS Group is the 'Water Treatment and Hygiene' division of the Marlowe Critical Services Group owned by parent Marlowe plc. Marlowe plc provides one access point for specialist 'highest standards' across;

'Compliance & Facilities Software', 'Health and Safety Compliance', 'Retained HR, Employment Law & Health and Safety', 'Occupational Health Services', 'eLearning and Training Services', 'Fire Safety & Security Services', 'Water Treatment & Hygiene Services', 'Air and Ventilation Compliance', 'Asbestos Management Services'.

All nine divisions can be accessed singularly or in combination.

The Group shares many common customers and collectively employs 2,200+ specialists, servicing around 30,000 customers.

Compliance. Assured.

WCS Group core services

WATER TREATMENT

- Cooling Tower Systems
- Evaporative Condensers
- Steam Boilers
- Low and Medium Pressure Heating Systems
- Chilled Water Systems
- Pre-commission Cleaning
- Pre-Treatment Plant, Dosage, Chemical Cycle and Control
- Remote data logging
- Web-based electronic log book
- Swimming pools and Spas

WASTEWATER

- Water Recycling
- Water and Wastewater equipment supply and service
- Wastewater Treatment plant design / supply / install
- Wastewater equipment hire
- Industrial Effluent monitoring and optimisation

WATER HYGIENE

- Legionella Risk Assessment and Water Hygiene Surveys
- Monitoring / Inspection Contracts with Log Book Management
- Remote temperature monitoring
- Cleaning and Disinfectant Works
- Remedial Works
- Asbestos Risk Assessment

AIR HYGIENE

- Air Hygiene Risk Assessment Survey
- Indoor Air Quality Monitoring
- Cleaning and Treatment of Air Handling Equipment

TRAINING SERVICES

- eLearning
- Legionella Control Training
- WCS Group / IOSH / City & Guilds / COSHH training
- On-site training for bespoke needs

WATER ENGINEERING

- Design and specification for water treatment
- Installation
- Reverse Osmosis plant
- Cooling Tower maintenance
- Plumbing and remedial works
- Installation of water softeners
- Pre-treatment plant
- Closed system chemical cleaning
- Waste water management
- Re-purposing and harvesting of water

ASBESTOS

- Asbestos Surveys
- Air Monitoring and 4 Stage Clearance
- Asbestos Bulk Sampling and Analysis
- Fire Risk Assessment
- CDM
- Principle Designer
- Construction Site Safety Audits
- Contractor Assessment

www.wcs-group.co.uk

Enquiries: +44 (0)845 094 4300
alex.winter@wcs-group.co.uk

For a full list of our accreditations please visit: **www.wcs-group.co.uk/accreditations-respository**

WCS Group is a trading name for WCS Environmental Ltd, registered in England and Wales (Number 02184649) at 20 Grosvenor Place, London, SW1X 7HN.
Head Office – 17 Wheatstone Court, Waterwells Business Park, Gloucester, GL2 2AQ. The WCS Group is a portfolio company of Marlowe plc and leads the water division of Marlowe Critical Services.