



COMPANY PROFILE AND CAPABILITY STATEMENT

**FLEXIBLE
TURNKEY
SOLUTIONS**

Introduction

CRS Water Pty Ltd (“CRS”) is an Australian-owned engineering and technology company specialising in the design, manufacture, installation, operation and maintenance of turnkey water and wastewater treatment plants. We have developed a strong reputation for engineering high quality systems that combine innovative technologies with robust and proven components.

CRS is widely experienced in delivering flexible water and wastewater treatment solutions that range from modular package treatment plants through to civil infrastructure projects. We aim to exceed client expectations by reducing capital and operating costs without compromising quality.

CRS operate under an ISO9001 accredited Quality Management System and have implemented Work Health and Safety (WHS) and environment management policies and procedures compliant with AS/NZS4801 and ISO14001. We provide customised products and services in four key areas:

Water Treatment

Utilising the latest advances in water treatment technologies CRS produce potable, industrial and recycled water treatment solutions within the municipal, resource, construction and industrial sectors. Typical technologies include:

- Clarification: Conventional and lamella plate
- Filtration: Membrane, media, screen and cartridge
- Desalination: Reverse Osmosis (RO) and Forward Osmosis (FO)
- Disinfection Systems: Ozone, UV, chlorine injection
- Chemical dosing

Sewage Treatment

CRS can offer a variety of sewage treatment solutions designed to cost effectively exceed treated effluent requirements, such as:

- Conventional Activated Sludge Plants (CASP)
- Sequential Batch Reactors (SBR)
- Membrane Bioreactors (MBR)

Sludge Management

We provide cost-effective sludge management solutions, using an innovative range of sludge harvesting and processing technologies, including:

- Dredging and pumping
- Envitube® geotextile dewatering containers
- Mechanical dewatering equipment: Screw presses, centrifuges and belt presses

Equipment Supply

Through an extensive network of local and international suppliers, CRS provides standalone equipment for water treatment, wastewater treatment and sludge management. Equipment supplied includes, but is not limited to:

- Concrete, steel, plastic and FRP tanks
- Pumps and blowers
- Screens and filters
- Membrane modules
- Control panels

To remain at the cutting edge, we are dedicated to the development, testing and piloting of innovative water treatment and resource recovery technologies. Research areas include:

- Selective Salt Recovery
- Zero Liquid Discharge
- Solid-liquid Separation
- Desalination
- Forward Osmosis

Corporate Summary

Company Name:	CRS Water Pty Ltd
Postal Address:	PO Box 6020, Baulkham Hills BC NSW 2153, Australia
Registered Address	1 O'Connell St, Sydney, Australia
Year Registered	2017
ABN	88 617 173 618
Telephone	02 9899 7811
Facsimile	02 9899 7336
Email	crs@watertreatment.net.au
Website	www.watertreatment.net.au
Managing Director	William Kelly
Company Offices:	Head Office: 4/9 Packard Avenue Castle Hill, NSW 2154
Agents – Australia	Perth WA Melbourne VIC Adelaide SA
Agents - Asia	Tuia Group Ltd
Agencies Represented	Clearwater Tech, Inc. (USA) NMC (Belgium) Alamo Water Refiners, Inc (USA) Grundfos Pumps Pty Ltd (Australia) Fontana R s.r.o. (Czech Republic) Toro Wastewater Equipment Industries (Spain)
Bank	National Australia Bank Norwest Sydney
Accountant	Lawler Partners, Sydney
Solicitor	Norton Rose Circular Quay, Sydney

Extent of Capabilities

General

CRS Water designs and installs various water and wastewater treatment facilities for municipal and industrial applications.

We are also capable of providing professional engineering and environmental services in a wide range of areas. A list of these capabilities is as follows:

- Feasibility Studies, including
 - Environmental Impact Statements
 - Reviews of environmental factors
 - Data and sample collection methods
 - Data interpretation and analysis methods
 - Treatment process evaluation and optimisation
 - Economic analysis of treatment options
 - Residuals treatment and disposal
- Project management - from simple to complex projects including performance based Design-Build-Operate (DBO) contract management.
- Trade waste surveys
- General environmental audits
- Research and development of emerging technologies
- Process, civil, electrical, mechanical and infrastructure design
- Specification preparation and tender assessment
- Operation and maintenance assessment and optimisation
- Legislative compliance interpretation and negotiations with regulators
- Preparation of regulatory applications
- Wastewater strategic planning

These capabilities apply particularly, but not exclusively, to the fields of water supply, sewage and trade waste treatment, re-use of treated water and by-products, liquid handling, odours, emissions and noise mitigation, workplace health and safety, and other environmental issues.

Water Treatment

CRS can design and supply a range of water treatment equipment, from pressure filters to ozone disinfection equipment as well as reverse osmosis and ultrafiltration systems. CRS also designs facilities for the treatment of bore water and surface water from rivers and streams which require colloidal particle removal and disinfection.

Should purified water to a high standard be required for any industrial or municipal application, CRS can ensure it's provision with either nanofiltration or reverse osmosis filtration systems.

CRS will design and engineer a water treatment system for your application which will be cost effective and efficient.

Municipal Wastewater Treatment

Experience in the investigation, design, documentation and supervision of domestic and trade waste plants from 0.1 ML/d to 16 ML/d is included in the company's project portfolio. The complete package of civil, mechanical and electrical design can be offered, or alternatively CRS can assist you in specification preparation (including the specialised area of performance based specification), tender assessment and project management of third parties.

The augmentation or upgrading of existing plants with innovative low cost technologies is a field in which the company can be of valuable assistance.

CRS also has experience in the area of plant assessment, enabling performance audits to be carried out and providing detailed recommendations to enable plant upgrades and augmentation to be implemented with various objectives in mind such as:

- Process enhancement
- Capacity upgrade
- Nutrient removal

CRS realises that the maximum utilisation of existing facilities is the key to cost effective augmentations and upgrades. Whilst most engineers will provide a package 'tack on' facility solution, CRS engineers will offer a range of solutions which are formulated around your unique combination of existing facilities and operating protocols.

Industrial Wastewater Treatment

CRS specialises in the design and supply of systems for the treatment of numerous industrial wastewaters. Facilities which have been supplied in the past include chemical flocculation, clarification, dissolved air flotation, screening, biological treatment using both fixed and floating media, filtration and oxidation using ozonation and chlorination.

The reuse of treated effluent has been achieved by applying our experience in membrane separation, specifically ultrafiltration and reverse osmosis. As the price of buying raw water and discharging untreated effluent rises, increasing opportunities for recycling industrial waste streams present themselves.

These opportunities are being converted into treatment plants by companies such as CRS who can deliver the technologies required at realistic prices. CRS can facilitate the provision of a treatment plant suitable for your specific requirements which will be cost effective and require minimal operator attendance, allowing your organisation to focus on its core business.

Environmental Services

CRS is capable of providing a complete service as an environmental consultant. Our staff have operated in this field for many years and are fully familiar with the latest developments and proposed modifications to NSW Planning and Environmental Legislation as well as the Pollution Control Acts and the relevant sections of the Local Government Act.

Dredging and Dewatering

CRS's turnkey sludge removal and dredging division, in conjunction with our sister company, Dredging Solutions Pty Ltd, specialises in the removal of a wide range of materials from a variety of impoundments. Manned and unmanned dredges are available for use in tailings dams, open cut mines as well as sewage and process sludge lagoons.

CRS has experience in the design, testing, manufacturing and installation of geotextile dewatering container systems for municipal and industrial applications and have been successfully installing these geotextile dewatering systems in Australia and New Zealand for over 10 years.

The CRS Envitube® geotextile dewatering tubes are a low cost, high volume sludge dewatering solution constructed from specially engineered high permeability geotextiles to ensure the containment and dewatering of high moisture content sludge and sediment.

The technology is available in a variety of sizes tailored to site specifics and where space and time are available, is becoming a more cost effective alternative to the traditional mechanical dewatering processes.

Operation and Maintenance Assessments

CRS provide an operation and maintenance optimisation service to industry through the experience of its engineers and technical officers who have commissioned, operated and maintained a variety of water and wastewater treatment plants.

We can assess the design capability of a plant and check this against a performance assessment by visual and instrument checks as well as monitoring and collating available data. The results of our assessments are included in comprehensive reports describing the plants capability and performance. These reports outline the necessary steps to either tune the plant or modify it to produce effluent to meet the statutory standards or to provide cost savings in disposal charges.

Operational process optimisation through reference to biochemical process kinetics can often yield capacity and performance improvements which minimise or even negate the need for further infrastructure investment.

Where required, CRS can undertake the operation and maintenance of your water or wastewater treatment plant on a fixed contract basis. The company has the capacity to operate most water and wastewater treatment facilities and have considerable experience in the maintenance of such facilities.

Training

With the need to make the most of scarce capital resources it has become necessary to place increased importance on facility operation thereby requiring a higher degree of operator knowledge and skills. CRS have found that the provision of both initial and ongoing training for client's operators and staff has become an essential service and a viable alternative to infrastructure investment. The preparation of Standard Operating Procedures (SOP's) has also become a more common requirement of more informed clients and CRS can assist in the provision of such.

Research and Development

In recent years CRS has expanded to include a research and development (R&D) division. This department has been focused on the development of technology for the treatment of brine waters, particularly industrial brines. Combining engineering experience and forward thinking the R&D team have established a brine treatment process known as Integrated Product Recovery (IPR). IPR is a sequential waste minimisation process ultimately resulting in the recovery of saleable chemical products. Brine streams are treated via an integrated system that utilises chemical manipulation to minimise waste via selective salt recovery.

While IPR was primarily designed with the intention to treat produced water from coal seam gas extraction processes, the technology has since been further developed to work on a range of brines including seawater and those brines resulting from shale gas extraction operations. CRS have filed an international (PCT) patent application for their IPR technology and in addition we have filed a provisional patent application covering our research into water treatment methods for treating shale gas produced water. CRS has in place an MOU with a leading Forward Osmosis (FO) membrane manufacturer and has also acquired the rights for this technology in the Australian Mining and O&G sectors. CRS's dedicated R&D team are continually working to develop innovative water treatment methods and technologies to overcome existing and future water treatment challenges.