



MINING

WATER & WASTEWATER

A guide to understanding the unique challenges of mining process water and wastewater and the innovative solutions to address them in light of environmental protections



EXPERIENCE
RELIABILITY



WATER IS THE LIFEBLOOD OF ANY MINING OPERATION

A Complete Solution

Mining has always been a water intensive industry. Many variables determine the water and wastewater treatment at a mine site including climate, type of rock and nearby water flows. While finding a water source in a water negative environment or discharging in a water positive environment has been a challenge. Increased regulation, water scarcity and the requirement of social license to operate have made water and wastewater treatment a greater priority. There are incredible opportunities in mining but the challenges of water scarcity underscore mining efforts. The increasing cost for treatment of mining intake and effluent contributes to higher capital expenditure and operating costs year over year. Many of the technologies the industry has relied on in the past are incapable or inefficient at meeting new

discharge requirements and it is doubtful they will meet inevitable future regulation. Aquatech has remained on the forefront of innovation for water and wastewater treatment as we continue to bring creative and dependable solutions to water scarcity around the world. It is our mission to help companies adopt sustainable solutions that are cost effective and profitable. For over 35 years, Aquatech has served some of the largest clients in some of the biggest projects, and has established a reputation for reliable experience. We use that extensive experience to create a solution designed to specifically for each client's objective with the earned knowledge of what works. Finding a water treatment solution that will outlive a mine's lifecycle contributes to mining operation profitability, sustainability and social responsibility.

- **PROVEN, COST EFFECTIVE WATER SOURCING**
- **SOCIAL LICENSE AND COMMUNITY ENGAGEMENT**
- **WASTEWATER TREATMENT SOLUTIONS**
- **REGULATION COMPLIANT DISCHARGE**

OVER **1,600**
Installations in
60 countries

Founded 1981
Solely focused on
water treatment

Leading Edge
Laboratory, Piloting
and R&D

600+
Employees
Worldwide



MINING WATER AND WASTE WATER INNOVATIONS

HERO (High Efficiency Reverse Osmosis)

HERO is a reverse osmosis (RO) technology specifically designed to purify difficult-to-treat feed waters. Constituents which often pose problems to conventional RO processes are handled with ease by HERO. By effectively preventing these constituents from being a root cause to membrane fouling or scaling, the HERO process offers the end user higher recoveries as well as significant operational benefits. This enables greater uptime due to reduced fouling and less cleaning.



Desalination (Thermal and Membrane Desalination)

We are uniquely positioned to offer our clients complete integrated solutions through our vast depth and breadth of technologies. We are one of few companies in the world with both thermal and membrane desalination capabilities. We also have the ability to offer both thermal and membrane processes for water reuse. In addition to mining, we have done extensive work in the power, oil and gas, and infrastructure markets.



ZLD (Zero Liquid Discharge)

More and more, industries are prohibited from discharging any liquid waste originating from their facilities. Whether to meet regulations – for difficult-to-treat wastewaters – or where scarcity of water demands water recovery (recycle/reuse) – Aquatech's innovative Zero Liquid Discharge (ZLD) technologies help you achieve environmental compliance, reduce your feed water requirement, provides a net positive environmental impact on communities, and recover high purity water for reuse.



CeraQ™ (Advanced Ceramic Membranes)

CeraQ™ ceramic membranes are designed for challenging water and wastewater applications. CeraQ modules consist of ceramic tubular elements potted into bundles for various surface area requirement. Modules are capable of removing virus, bacteria, colloidal matter, submicron or micron sized suspended particles, oil and organics from a wide range of fluids, including drinking water and industrial wastewater to economically meet variety of treatment objectives, or to recycle and reuse water



Depend on a company that has designed, constructed and operated custom water and wastewater solutions globally for over 35 years with a commitment to cost effective sustainability and operational dependability.

BURITICA GOLD

This gold mining site is located in mountainous terrain northwest Colombia and is expected to produce an average of 265,000oz of gold per year during the life of mine (LOM) via bench and fill. Any wastewater discharged from the mine must comply with the stringent discharge standards for chlorides, arsenic, cadmium and other constituents of concern into receiving streams in challenging topography. Aquatech provided a Membrane Based Thermal Evaporation System that recovers water from wastewater. That is clean enough to be discharged or recycled back into the system. This has enabled water conservation and reduced energy consumption and operational expenditure through efficient technologies designed for sustainability.



AMBATOVY

Ambatovy, located in Madagascar, is among the world's largest lateritic nickel mines with an annual design capacity of 60,000 metric tons of nickel and 5,600 metric tons of cobalt. The site consists of an open-pit mining operation and an ore preparation plant with slurried laterite ore for process plant and refinery. Aquatech was awarded the contract for supplying the process and demineralized water treatment plant. The filtered water is stored in process water storage tanks and then used to supply the demineralized water treatment plant. The demineralized water treatment plant includes 3 x 50% strong acid cation ion exchange units, 3 x 50% strong base anion ion exchange units, and 3 x 50% mixed bed ion exchange polishers to produce 700 m³/hr of boiler feed quality water.



WE'RE HERE TO HELP

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Quality
ISO 9001

