Complete Solutions for Mine Water Balance
XYLEM SERVES MINING CUSTOMERS IN MORE THAN 140 COUNTRIES
Respected brands
Company Overview
Xylem overview

• A leading water technology company
• Global presence, with 12,500 employees
• $4 billion in revenues from 150 countries
• Advancing the smarter use of water
Xylem Balanced Portfolio

**BY END MARKET**
- Industrial 43%
- Public Utility 35%
- Commercial 11%
- Residential 8%
- Agriculture 3%

**BY APPLICATION**
- Transport 46%
- Treatment 10%
- Test 8%
- Building Services 19%
- Industrial Water 14%
- Irrigation 3%

**BY GEOGRAPHY**
- United States 37%
- Europe 35%
- Asia Pacific 12%
- Rest of World 16%
Industrial Markets

**XYLEM ADVANTAGES**
- Strong Brands
- Deep Application Knowledge
- Broad Product Portfolio
- Cutting Edge New Technologies

**INDUSTRIAL MARKET EXPOSURE**
- Mining: 53%
- Oil & Gas: 13%
- Construction: 10%
- Food & Beverage: 9%
- Marine: 9%
- General Industry/Other: 6%

**MACRO GROWTH DRIVERS**
- Global Commodity Demand Growth
- Growth in Hydraulic Fracturing
- Global Construction Recovery
- Changing Dietary Habits in Emerging Market Populations

**MAJOR COMPONENTS OF GENERAL INDUSTRY**
- Paper
- Power
- Manufacturing
- Chemicals
- Pharmaceuticals
Mining Capabilities
## What Solving Water Means to Xylem

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<tr>
<th>WATER NEEDS</th>
<th>XYLEM SOLUTIONS</th>
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<tr>
<td><strong>WATER PRODUCTIVITY</strong></td>
<td>• Highly efficient pumps, for transport, dewatering, boosting, etc.</td>
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<tr>
<td>More efficient movement, treatment and use of clean water and process water</td>
<td>• Sensors for water quality, leaks, and waste</td>
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<tr>
<td><strong>WATER QUALITY</strong></td>
<td>• Efficient wastewater pumps and M&amp;C</td>
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<td>More efficient renewal of wastewater to protect the environment</td>
<td>• Process optimization, treatment equipment, environmental monitoring</td>
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<tr>
<td><strong>WATER RESILIENCE</strong></td>
<td>• Water reuse, desalination technologies</td>
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<tr>
<td>Reduction of water-related risks, e.g. floods or scarcity</td>
<td>• Flood monitoring, drainage and pumping systems, and dewatering services</td>
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SOURCE WATER & CAMP WATER

CHALLENGE
- Mining often located in water-stressed areas with distribution requirements over a wide geographic area and at varying quality levels

SOLUTION
- Pumps and systems for water supply, transport, camp water treatment, and water quality monitoring

EQUIPMENT OFFERING
- Standard & Advanced Treatment Processes
- Booster & Transport Pumps
- Source Water Pumps Flow
- Meters for Water Quality Measurement

GOULDS WATER TECHNOLOGY VERTICAL TURBINE PUMP
EQUIPMENT OFFERING
Standard & Advanced Treatment Processes
Booster & Transport Pumps & Packages
Wastewater Pumps
Flow Meters
Water Quality Measurement
Mixers

WASTE WATER & WATER RE-USE

CHALLENGE
• Mining often face restrictions on usage and strict effluent quality regulations

SOLUTION
• Packaged systems for water supply, wastewater treatment, water reuse

WEDECO OZONE SYSTEM
DEWATERING

CHALLENGE
• Water removal from mine shafts, open pits and active dewatering around mines

SOLUTION
• Reliable and efficient dewatering solutions across the mine dewatering applications

EQUIPMENT OFFERING
Diesel Dewatering Pumps
Electric Dewatering Pumps
Vertical Turbine Pumps
Single & MultiStage Pumps
Pump rental and services
EQUIPMENT OFFERING
MultiStage Booster Pumps
Single Stage Transport Pumps
Vertical Turbine Pumps
Booster Set Packages
Portable Diesel Pumps
Submersible Pumps

WATER TRANSPORT & BOOSTING

CHALLENGE
• Water transport and boosting applications vary widely

SOLUTION
• Pumps and systems for any application

GODWIN DIESEL DRY PRIME PUMP
Environmental Monitoring

CHALLENGE
• Mines are coming under pressure to monitor their water consumption and impact

SOLUTION
• Environmental monitoring solutions to track quality and flow parameters in real time

EQUIPMENT OFFERING
Environmental Monitoring Equipment
Water Quality
Turbidity & Flow Meters
Multi Parameter Sondes
EQUIPMENT OFFERING

Cyanide Monitoring
Ozone Treatment
Pumps and Drives
Water Quality Sensors for Effluent

OZONE PROCESS SOLUTIONS

CHALLENGE

• Cyanide use is expensive, toxic, and increasingly regulated

SOLUTION

• Process analysis to optimize use
• Ozone-based leachate management
DUST & FIRE SUPPRESSION

CHALLENGE
• High pressure, high flow pumping requirements for dust & fire suppression

SOLUTION
• Certified fire pump systems offered globally, and high pressure booster pumps for dust suppression systems

EQUIPMENT OFFERING
Fire Suppression Pumps & Systems
Booster Pumps
Booster Packages

VOGEL MULTI STAGE PUMP
WHAT CAN XYLEM HELP YOU SOLVE?

• Your toughest water treatment challenge…

• Conduct an energy audit in your most energy intensive operation…

• Pilot one of our Flygt or Godwin or e-SV pumps in an application of your choice…

• Set up environmental monitoring at your riskiest mine…
Australia Gold Mine

Case Study 1:

The Australian gold mining industry began in 1851, increasing the country’s population significantly within a few years. As the world’s second largest producer of gold and a major player in the extraction of Iron Ore, Nickel, Opal and Zinc, mining remains one of the Australia’s primary industries.

Dewatering is an important part of the mining industry and for gold mining in particular, open saline pit dewatering is key to the continued and efficient extraction of precious metals.

**GOING FOR GOLD**

For one large scale gold mine in Western Australia, investing in a dewatering system that could effectively remove the continual influx of saline ground water and precipitation, was vital in keeping the mine running at its optimum level of production.

Like most open pits, extracting water from this site required a dewatering system that was capable of processing low flow fluids through extremely high heads, in order to pump the saline water up the pit face and out of the mine.

For maximum efficiency, Xylem suggested using submersible multistage pumps. When installed horizontally into low flow fluids, this can produce much higher heads than the single stage pumps that are readily available in Australia.

Vogel multistage pumps are manufactured in Austria and enabled the team to offer extremely competitive lead time in delivering a Duplex TVS pump unit to the mine in Western Australia, much to the relief of the site manager.

Other important considerations for the purchase of a new system was ease of installation and maintenance. In very large open pits, having access to the equipment for planned maintenance can reduce the need for excessive retrieval equipment and man power, which offers further monetary savings on the life of the pump.

**A MARKET LEADING SOLUTION**

Drawing on the experience and product portfolio of the wider Xylem Corporation has given this gold mine the perfect combination of equipment. A combination of two Vogel duplex multistage submersible pumps that can provide heads of up to 500m, plus two floatation modules from Flygt, another leading Xylem brand, has given the mine the very best in market leading technology from across the globe.

**Xylem’s role:** Xylem worked with the mine to produce a package of equipment from across leveraging knowledge and expertise from across the company.
Barrick Goldstricke Tailings Basin  
Case Study 2: Carlin, NV

ISSUE  
On Christmas Eve 2011, at the Barrick Goldstrike Tailing Basin, a floating turbine pumping system failed and sank. Godwin distributors Pac Machine and S&G Electric Motor Repair, along with the Xylem branch in Helena, MT, mobilized Godwin Dri-Prime pumps. The diesel and VFD-controlled electric driven pumps would get the needed process water flowing to the mill. Within two days post-failure, the system was set up and running and the plant was once again operational.

Barrick requested a quote for a permanent portable pumping solution with 4160V power to deliver 4000 GPM to the autoclave and 7000 GPM to the Roaster. The system needed to be portable; since the water level in the tailings basin rises approximately ten feet every four months, the power control system needs to be raised 30 feet per year.

SOLUTION  
Early in the design review, Xylem evaluated the use of 4160V power to meet the mine’s demands. We determined that using 480V power would result in a million dollar savings to the operation. After this decision, we worked to redesign the system plans to accommodate this voltage step-down.

Xylem designed a complete portable E-House (electric control building) to step the voltage down from 4160V to 480V, distribute the 480V power, monitor and deliver power to three 400HP VFDs, and power three Godwin Dri-Prime HL250M 400HP pumps. The pumpsets have extended skids to support the loading of floating 16” HDPE suction pipe in a dynamic environment.

RESULT  
The project had a very successful installation and startup of the equipment, due in large part to the cooperation between Xylem, our Godwin distributors, and Barrick. Our plan to utilize 480V power, while not the original request from the customer, proved to be an ideal solution for the project

Barrick was so pleased with the final product we were asked to supply a design for the next phase of the project, and sold them three additional Godwin Dri-Prime pumps.

Customer: Barrick Goldstrike  
Order date: 07/03/2012  
Completion: 02/22/2013  

Xylem’s role: Designer, fabricator, installer, engineering review, commissioning  

Xylem’s scope:  
• HL250M 400HP Dri-Prime  
• 5kV Arch-flash rated disconnect  
• 1500kVA Substation Class 4160V/480V transformer  
• 480V Distribution Panel  
• Power, voltage monitoring  
• 400HP VFD  
• Specific pumps/products used and service/people on the job
Thank you!

Let’s Solve Water