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Israeli Water Technology for the CSG & Mining Industries Delegation to Brisbane

Profile Catalogue
17th – 19th May 2011



**Israel
NewTech**
National energy & water program



Israeli Water Technology to the Australian CSG & Mining Sector

Australia is a dry continent with competition for scarce water resources. Water is therefore a key business risk for top companies. From a broad Australian perspective, drought, over-allocation, inefficient water supply (loss driven) and climate change has resulted in a strong focus by many leading Australian companies on their water management solutions, and practical ways to address these critical issues. In addition, the treatment of waste water in the Coal Seam Gas Industry is of vital importance given the increased environmental issues and regulations facing Australian companies.

Coal Seam Gas (CSG) & Mining companies require adequate water of the appropriate quality to operate as water is used across the business from exploration, mining, extracting, processing, smelting and refining. There are many challenges facing CSG & mining companies in Australia such as water treatment, protecting ground and surface water, tailing and brine management, evaporation enhancement and minimization, power-efficient desalination plants, linking power and water efficiencies to reduce greenhouse gas footprints, and economic modeling of value/cost of water management.

Since its founding, Israel has been coping with water scarcity and has been treating the subject as a national priority. The country has been constantly developing novel and efficient water and energy technologies, which can benefit the world as it is increasingly dealing with water and energy scarcity concerns.

From the comprehensive management of water resources and water-saving irrigation technology to cost-saving purification, reclamation and desalination methods as well as water security and water treatment solutions, Israel is leading the world in producing water technology for sustainable development.





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Company's Name – **A.R.I. Flow Control Accessories Ltd**

Year Of Establishment – 1978

Number of Employees – 140

Website – www.arivalves.com



Company's Profile

The company was founded in Tel Aviv in 1970 and supplied the needs of the local market for air valves and check valves. In 1978 the factory was transplanted to its current location at Kfar Haruv and now exports almost 80% of its sales. In this time period, employment increased from 10 workers to 140.

International and Export Activities

ARI has 5 subsidiary companies in the USA, Germany, Russia, China and South Africa, most of them under 100% ARI ownership. ARI's main markets include North America, South America, Central America, Western Europe, Eastern Europe, the former Soviet Union, South Africa, Australia, New Zealand, India, China and other Far Eastern countries. Exports run about 80% of company sales.

Activities in Australia

ARI has been active in the Australian market since 1983. Its valves are sold to the irrigation, waterworks and industrial markets through the leading Australian companies in these fields. ARI air valves have been approved by the Water Authorities in Australia. References are available upon request.

Activities/Installation in the Mining Sector

ARI is mainly involved in the mining and coal bed methane industries in Peru, Chile, Mexico and North America. ARI has supplied products including specialty air valves and underground air valve systems as well as services including pipeline analyses for the sizing and placement of air valves on liquid conveyance systems and system surge analyses. We have supplied our products and services to the copper, gold, silver and uranium mines as well as to the coal bed methane industry. References are available upon request.

Company's Name – **Amiad Australia Pty Ltd**

Year Of Establishment – 1979

Number of Employees – 34

Website – www.amiad.com.au



Company's Profile

Amiad Australia (AA) is a fully owned subsidiary of Amiad Filtration Ltd. The company was established in Australia in 1979 – and been in business for the last 30 years. We supply Amiad Water Filtration, Air valves, Control valves, and complete solutions of a wide range of water treatment plants that include: Reverse Osmosis, Ultra Filtration, Media, Iron removal, EDI and much more.

International and Export Activities

On the global side: Founded in 1962, Amiad Filtration Systems has long been a leader in filtration technology. From massive industrial and municipal installations to sturdy home landscaping filters, Amiad has created solutions that water users in 70 countries rely upon for clean water.

Amiad's 10-acre headquarters complex in Israel includes research and development, manufacturing, warehousing and training facilities.

With a full line of filtration solutions - plastic, steel, disk or thread; manual to fully automatic; filtration levels from 3500 microns to 2 microns - Amiad offers filtration systems to meet nearly any need.

Our filters are in use in 70 countries around the world, in applications that include:

- Agricultural and landscape irrigation
- Aquaculture
- Industrial water processing
- Industrial wastewater treatment
- Municipal water treatment (drinking and waste treatment)
- Prefiltration to protect costly media and reverse-osmosis systems

Amiad Filtration currently has subsidiaries in: USA, Australia, China, India, France, Germany, and Chile. Head Office is based in Israel and the company is listed in AIM – London.

Activities in Australia

Amiad Australia (AA) is a fully owned subsidiary of Amiad Filtration Ltd. The company was established in Australia in 1979 – and been in business for the last 30 years. We supply Amiad Water Filtration, Air valves, Control valves, and complete solutions of a wide range of water treatment plants that include: Reverse Osmosis, Ultra Filtration, Media, Iron removal, EDI and much more. Company Head office is in Melbourne and we have local representatives/offices in each capital city in Australia. We provide installation, commissioning and services as required.

Activities/Installation in the Mining Sector

Full range of products to major mining companies that include – process water, waste and discharge, purification, dust suppression and many other applications, case studies and specific information can be provided.

Company's Name – **Atlantium** Technologies

Year Of Establishment – 2003

Number of Employees – 50

Website – <http://www.atlantium.com/>



Company's Profile

As a company in the clean-tech space, Atlantium not only focuses on manufacture and sales but continues to conduct research to develop new applications and perfect existing ones. Its offices include full-scale testing facilities and a microbiology lab.

Research is led by PhDs from the fields of physics, water and microbiology.

International and Export Activities

The majority of Atlantium's water disinfection systems are exported to industrial and municipal customers – in Australia, North America, South America, Europe, and Asia. There are currently 320 systems in operation worldwide, the majority of which are installed in food & beverage, drinking water and aquaculture applications.

Activities in Australia

Atlantium sales and technical support are carried out in Australia by distributor: Amiad Australia Pty., located in Broadmeadows, VIC. Atlantium systems in Australia are in operation at Coca Cola, Schweppes, Unilever, Murray Goulburn, and aquaculture installations at fisheries, as well as in academic research institutions such as Monash University.

Activities/Installation in the Mining Sector

Atlantium has two applications for the mining sector: a) Dewatering the mine shaft – disinfecting the withdrawn water so that it can be safely re-injected to another aquifer – microbe and virus-free yet with flora and pre-existing eco-systems unharmed; b) Supplying safe drinking water for miners in their living facilities by providing the last stage of disinfection in the cycle to secure against viruses.

Atlantium systems have been validated according to US EPA protocols for 4-log virus disinfection.

Company's Name – Baccara Geva
Year Of Establishment – 1964 in Israel, 2009 in Australia
Number of Employees – 300
Website – www.baccarageva.com.au



Company's Profile

For over 40 years Baccara has been a market leader in the design and manufacture of automation products including: solenoid valves, air valves, air cylinders and nylon tubing for industrial, agricultural and irrigation applications. Baccara products are found in all areas of automation, designed to be dependable in the most adverse environments such as marine, chemical, mining and heavy industry. In addition to our extensive range of quality products we offer custom made solutions for clients' special needs using vast experience accumulated in our skilled engineering department and our manufacturing and logistical flexibility.

International and Export Activities

Headquarters in Israel. Subsidiaries in Australia, Holland & Spain and a network of representatives & distributors that covers USA, Europe, South Africa and the Far East.

Activities in Australia

Baccara Geva Australia is a fully owned subsidiary of Baccara Geva A.C.S. The company was established in Australia in 2009 to better support and build upon our existing customer base with an ever increasing range of stock on hand, faster service, local technical advice and competitive prices.

Baccara Geva has supplied the Australian market for over 30 years. We supply Solenoid valves, Air valves, Control valves, Mechanical valves and custom made solutions for our clients' special needs. Company Head office is in Melbourne and we have local representatives/distributors in each capital city in Australia.

Activities/Installation in the Mining Sector

Baccara sells a lot of solenoid valves and heavy duty mechanical brass valves to the mining industry through companies like CompAir, Norgren and Parker Hannifin.

Last year we developed and sold a special heavy duty mechanical valve with dust protections to be implemented on the mine bogies.

Company's Name – **Bermad**
Year Of Establishment – 1991
Number of Employees – 12
Website – www.bermad.com.au



Company's Profile

Over the decades, Bermad has become one of the world's leading suppliers of advanced control valve solutions for copper and other precious metals mining. Bringing together extensive experience, cutting-edge technological know-how and precision engineered manufacturing, Bermad offers a comprehensive range of custom-made, high performance control valves that are widely deployed and thoroughly proven throughout the industry.

International and Export Activities

BERMAD Headquarters manufactures and exports hydraulic control valves to over 80 countries worldwide with 6 subsidiaries and 2 partnerships. Bringing together its expertise and know-how, leading-edge technology and precision engineering, BERMAD provides comprehensive customized solutions for the control and management of water supply anywhere in the world for industrial and mining applications.

Activities in Australia

Supply of Hydraulic control valves, Air valves and Water Meters for the following industries Waterworks [municipal & State water authorities, Major pipeline projects] Agriculture/Irrigation infrastructure, Fire deluge systems for tunnels processing plant, coal seam gas & petroleum industries

Activities/Installation in the Mining Sector

A considerable number of Mines across Australia have their above and below ground mining water infrastructure operating with the help of Bermad control valves in for the past 20 years. In both the processing and mining of natural resources Bermad offers an extensive range of Hydraulic control valves, air valves and water meters to meet the most challenging requirements of our customers. Bermad WT has a highly trained and dedicated staff that not only sells products but is also skilled in the sizing, specification and product commissioning.

Company's Name – **IDE Technologies**

Year Of Establishment – 1965

Number of Employees –

Website – www.ide-tech.com



Company's Profile

IDE specializes in research and development of saline water desalination processes, concentration and purification of industrial streams, wastewater treatment, heat pumps and ice/snow machines.

IDE develops, designs, manufactures and installs sophisticated equipment for industrial and domestic applications throughout the world. Our equipment and plants are based on self-developed processes and state-of-the-art technology. In addition IDE provides post-sales maintenance and support for plants delivered to our customers.

History and Experience

Since its inception in 1965, IDE Technologies Ltd. has designed and supplied over 370 plants of various types and sizes, in nearly 40 countries worldwide, with an overall production capacity of about 1,400,000 m³/day. Some of the first units commissioned are still in operation after more than two and a half decades, to the satisfaction of users, without significant loss of the original performance or breakdown.

IDE's desalination plants have rightfully earned a reputation for outstanding availability, stability and flexibility of operation, making them also suitable for developing countries where skilled operating personnel is scarce and reliable operation is essential.

IDE has successfully installed a variety of water solutions, including Vapor Compression and Multi-Effect Distillation Units, Reverse Osmosis plants, Concentration and Refrigeration Equipment. Moreover, with thermal distillation units ranging from 30 to 18,000 m³/day, and membrane desalination plants ranging from 600 to 330,000 m³/day, some of these plants are of the largest of their kind in the world.

Activities in Australia

Slated for completion during 2010, the desalination plant in Pilbara will be based on reverse osmosis technology - a modern process technology used for desalinating water in a wide range of applications. The plant will provide 140,000 cubic meters/day (50 million cubic meters/year) of high quality desalinated process and drinking water, using innovative technologies implemented by IDE in its projects worldwide, for example in the plants in Ashkelon and Hadera (over 100 million cubic meters/year each), Cyprus (20 million cubic meters /year) and in Eilat (3.6 million cubic meters/year).

This project is one of the most complex in the world and one of the largest of its kind supplied by IDE to a foreign client. The quality of the feed water and compliance with the rigid and meticulous standards of the local industry necessitates more precise and complex treatment than in similar installations elsewhere

Benefits for the Mining Sector

IDE's industrial Zero Level Discharge (ZLD) solutions excel in energy efficiency and are environmentally friendly. IDE applied its vast experience and extensive technological expertise in installation of desalination plants and energy-efficient, environmental-friendly water and waste water treatment equipment to the development of a unique concentrator for brines containing hard scale-forming compounds.

IDE's Heavy Duty Evaporator (HDE) units are designed for utilities, chemical processes, pulp and paper and other industries.

Company's Name – EZPack Water Ltd.
Year Of Establishment – 2010
Number of Employees – 5
Website – www.ezpackwater.com



Company's Profile

EZPack Water Ltd develops, manufactures and markets unique proprietary solutions for water storage, preservation and mobility. The company products are aimed to the emergency, disaster relief, remote locations, temporary projects, military and outdoor markets

The company has developed the Water Storage & Distribution System (WSDS) – the most advanced system for water supply.

EZPack and the WSDS are approved by the Israeli Water Authority for water distribution in emergency situation and it is supplying to various municipalities in Israel.

International and Export Activities

EZPack is now establishing its marketing activities mainly in North America and Australia

Activities in Australia

We are just starting our activities in the Australian market. We are looking for partners in the field as well as potential distributors in the following markets:

Water storage and distribution for mines, construction projects and remote locations

Emergency aid and relief

Military

Camping and outdoors

Activities/Installation in the Mining Sector

Company's Name – **Netafim Ltd**
Year Of Establishment – 1964
Number of Employees – 2,400 worldwide
Website – www.netafim.com



Company's Profile

Netafim™ offers a comprehensive line of drip and micro irrigation products for Agriculture, Landscape & Turf, Greenhouse & Nursery, Mining and Wastewater applications.

International and Export Activities

Netafim™ is the global leader in smart drip and micro irrigation solutions for a sustainable future. With more than 35 subsidiaries worldwide, Netafim agronomists and engineers deliver optimal solutions to growers in over 112 countries, with 14 manufacturing facilities around the globe and over 2,400 employees.

Netafim helps the world grow more with less, this means achieving better quality crops and higher yields while using less of the world's limited resources such as water, land and energy.

Our products provide diverse and comprehensive solutions for cost-effective irrigation for a broad range of crops: open-field crops, orchards, groves, vineyards and more.

Netafim's broad solutions portfolio includes complete drip irrigation systems for agricultural and landscape irrigation, computerized monitoring and fertilization control systems and turnkey greenhouses projects.

Netafim is jointly owned by three Kibbutzim (Hatzerim, Magal and Yiftach), the Markstone fund and the Tene Fund. The company's annual sales totaled \$504 million in 2009.

Activities in Australia

The Australian subsidiary is based in Laverton, VIC.

Netafim Australia Pty Ltd has a local manufacturing facility and it maintains a sales, marketing and service presence throughout Australia – WA, SA, QLD, NSW and VIC. Please visit www.netafim.com.au for more information.

Activities/Installation in the Mining Sector

Netafim's mining services surpass conventional methods, offering total system solutions for maximum metal recuperation. Our high quality dripperlines provide uniform coverage, minimize clogging and ensure functionality, while valuable hydraulic planning services help lead to optimal results.

In addition, Netafim can offer:

- Total system solutions from Leach lines, fittings, filters, valves and air vents to technical expertise
- A team of experts - Technical Manager, Market Segment Expert and Customer Service Representative to support your mining operations
- System Solutions including cost-savings initiatives, first class logistics services and application designs and consultation
- Quality Commitment – Netafim is ISO 9001:2000 Certified - recognized today throughout the industry for our rigid quality-control measures.

Company's Name – **Nirosoft**
Year Of Establishment – 1989
Number of Employees – 65
Website – www.nirosoft.com



Company's Profile

Nirosoft provides advanced tailored water treatment solutions, including process engineering, design, manufacturing, commissioning, training and ongoing service for a wide range of water & wastewater treatment applications, such as:

- Seawater and brackish water desalination for drinking & process using UF & RO membranes.
- Domestic and industrial effluent recycling using DAF, media filtration, UF & RO membranes that enable reuse of water while minimizing waste discharge
- Ultra-Pure/ demineralised water for industrial, pharmaceutical & power applications, using RO & EDI

International and Export Activities

Headquarters in Israel. Fully owned subsidiaries in Australia, Italy & South America and a network of representatives & agents around the world. 90% of activity to export, mainly to the Mediterranean region, Europe, Australia & South America.

Activities in Australia

Nirosoft Australia Pty Ltd a fully owned subsidiary located in Melbourne. Activity in Australia since 2001 with approx 30 installations to date in various locations & applications. Installations in Australia include RO systems for seawater, brackish water & effluents, UF systems for process, potable & effluents, EDI systems for dematerialized water feed in power plants and more.

Activities/Installation in the Mining Sector

Chile: 5,000 m³/day wastewater treatment & recycling system in a copper mine, including: clarifier, DAF, UF & RO. Turnkey project supplied 2008.

Australia (WA): 2-pass RO + EDI system for demin feed to a power plant in an iron ore mine, Pilbara WA. Containerized system with full duty/stand-by capability. Supplied 2009.

Australia (QLD): 3,600m³ UF-RO system for Coal seam Gas Water treatment. Supplied 2003.

Australia (QLD): RO desalination systems for bore water at mining camps in QLD. Supplied 2006

Company's Name – **Odis Filtering Ltd**

Year Of Establishment – 1978

Number of Employees – 250

Website – www.odisfiltering.com



Company's Profile

Odis is a world wide provider of state-of-the-art Water Treatment plants and solutions.

Among our worldwide customers you can find reputable multinational corporations, national water supply companies, municipalities and government agencies.

ODIS has used its many years of experience in the industry to develop complete treatment systems. Odis' modular approach provides our customers with easy to operate and cost-effective plants. The units are trouble-free systems capable of enduring in any operating environment with minimal maintenance efforts.

International and Export Activities

Many of our clients are industrial companies, government customers and State water companies such as Columbia Metropolitan Airport USA, Hydroven- Venezuela, DSI –Turkey, Mekorot – Israel, United Nations Peace Keeping Missions and Alifruit in Chile. Among our Business customers, one can find Heinz, Ford, Schering Plough, food industry, oil refineries and many others known companies worldwide.

Odis branches are located in Australia, United States, Romania, Mexico, Brazil, Argentina, and Chile.

Activities in Australia

Our head office in Australia is located in Sidney. It provides service and support for our systems according to the client requirements.

Some of our projects in Australia are:

- Seq Water (Sun Water), Queensland – seven water treatment plants for drinking purposes. Estimated capacity: 100 m3/day each one.
- South West Rocks, Kempsey Shire Council, NSW. Waste Water Recycling Plant. 1,650 m3/day
- Melbourne Convention Center. Municipal Waste Water Treatment. 100 m3/day
- Eacham Shire Council. WaterPoint – Drinking water plant. 1,200 m3/day
- Dimbulah. Tableland Shire Council. WaterPoint – Drinking water plant. 1,800 m3/day
- Woodie Woodie plant, Western Australia. Sewaclear® - Waste water tertiary Treatment Plant. 360 m3/day
- Darling Anabranh. River Water Filtration for Agricultural Applications. 2,160 m3/day
- Hume Project – Hume City Council, VIC. Greywater Treatment Plant (Optimum®).60 m3/day

Activities/Installation in the Mining Sector

Odis specializes in the design, manufacture, installation and commissioning of water and wastewater treatment solutions for many aspects of a mine operation. Systems can be supplied to treat ground of surface water to drinking and potable water use, mine waste water treatment and recycling, and treatment of effluent and sewage. Systems can be modular for mobility and ease of installation, or designed for permanent installation. The systems are designed to achieve your required outflow water quality requirements. Odis experienced engineering design team utilize a variety of technologies to ensure the treated water or waste water meets the project and statutory requirements. Technologies include: filtration, cyclonic separation, sedimentation and settling, adsorption, membrane technology (MF, UF, MBR, RO), disinfection, chemical dosing, biological treatment and ion exchange.

Company's Name – **Mottech**

Website – www.mottech.com



Company's Profile

Mottech Water Management Ltd is a leading provider of the IRRInet solutions for water and irrigation remote management applications. Mottech, headquartered in Israel, is the prime distributor of Motorola for the IRRInet control solutions worldwide.

International and Export Activities

Mottech Water Management Ltd serves customers in Asia Pacific, Europe, Latin America, Africa and the Middle East. Mottech utilizes over 20 years of experience and provides its customers with control and management systems which ensure constant, reliable and accurate water usage, while reducing operational costs and maintenance costly expenses.

Activities in Australia

The IRRInet solutions are being utilized in Australia for the past 20 years.

Thousands of IRRInets are installed Australia wide in many varied applications; mines, city councils, farms, botanic gardens

Activities/Installation in the Mining Sector

- Suppressing airborne dust generated by mining and blasting by remotely and automatically control of the moisture level of material through pre watering
- Stabilising the surface of the material by accurately control stockpile dust suppression (e.g. activating sprinklers)
- Exact watering for only appropriate areas, taking into consideration weather conditions (e.g. wind speed and direction)
- Minimising the volume of water used by all processes
- Maximising beneficial use of all water from the aquifer
- Controlling and monitoring wastewater for contaminants before re-use
- Managing and harvesting stormwater run-off from operational areas
- Mount Leyshon Gold Mine, Queensland
- Santos TOGA CSG development in the southern Bowen Basin, Queensland

Company's Name – YAMIT ELI

Year Of Establishment – 1985

Number of Employees – 190

Website – www.yamit-f.com



Company's Profile

YAMIT ELI is a leading international provider of water and wastewater treatment and filtration systems and services with customers across the world. The company has customer sites and installations in Asia, Central and South America. South and Southern Africa, Europe and Australia. YAMIT ELI International headquarters are located in Israel with YAMIT ELI European headquarters in Amsterdam, Netherlands, YAMIT China headquarters in Beijing and YAMIT Southeast Asia headquarters in Manila, Philippines. In addition, the company plant and manufacturing facilities are in Israel.

International and Export Activities

Nagua and Guayabito drinking water project, Dominican Republic.
Termocandelaria electric power plant, demineralized water supply, Colombia.
Numerous reuse and effluent treatment systems for Mekorot – Israel Water Supply Co
Manila emergency containerized water systems – Philippines
Simunye, Ezoalini drinking water system – Swaziland
Numerous industrial water treatment projects – China
Chimuluacan treatment system – Mexico

Activities in Australia

Yamit have been supplying into the Australian market for over twenty years. Yamit sell into the Agriculture, Council, Commercial, Industrial and Mining Markets. The product range includes Manual and Automatic Screen Filters, Media and Deep Media Tanks.

Activities/Installation in the Mining Sector

Yamit have been supplying Media and Deep Bed media systems into the Queensland market for over ten years. Components for pre-treatment for R.O. and potable water and wastewater treatment plants at coal mining sites. .
In the past three years through Toro Australia, their Australian Distributor, they have supplied main filtration, automatic screen filters and field filters, semi-automatic screen filters for Queensland coal seam gas projects. These products are used to “clean” wastewater prior to use in irrigated wood lot applications.