

Gravity Tales

Bemax's Snapper Plant design incorporates latest surge bin technology



Mineral Technologies' design team has recently completed the detailed design of the Snapper wet concentration plant for Bemax Resources.

The new Snapper plant will consist of a dredge for mining, floating spiral concentrator, tails handling and deposition system and concentrate stockpiling. With a nameplate capacity of 1350tph, the plant incorporates a number of innovative features including modular bolted pontoons, to minimise site construction time, and MT's latest surge bin technology. This technology provides very stable feed density, solids feed rate and slimes control to the spiral separators which facilitates plant optimisation, thereby increasing mineral recovery.

This design work follows the successful design and construction of Bemax's Ginkgo wet concentration plant by Mineral Technologies in 2006.

The Snapper mineral sand deposit is situated 10km from the existing Ginkgo operation in western New South Wales.

MT's involvement with the Snapper Mine Project started in 2007 with

test work at MT's laboratories to define the optimum process flow sheet for the deposit. Development of the process design was a collaborative effort between MT's in house metallurgical engineers and Bemax's process metallurgists.

Detailed design commenced in earnest at MT in early 2008 with a team of up to 28 engineers and drafters assigned to the project. During this design process careful attention was given to developing and optimising the plant layouts to suit Bemax's specific project requirements. MT undertook

all aspects of the design including piping and pumping systems, and electrical and structural engineering. 3D design techniques were used to optimise layouts and prevent steelwork clashes.

Bemax has engaged an Australian engineering contractor to manage the procurement and construction of the project. Mineral Technologies will continue to provide technical support during the construction and subsequent commissioning of the plant to ensure that the full potential of the processing plant is achieved.

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New high capacity spiral for Iron Ore fines

Mineral Technologies has been supplying its WW6E wash water spiral to the Canadian iron ore market since 1998 and to date has sold in excess of 5000 spiral starts. The recent high demand for iron ore and plans for the development of several new projects prompted MT to take the concept of our high capacity waterless spiral (model HC1) and generate a new range of high capacity wash water spirals with the initial target market being the iron ore industry.



HC33 Spiral at Mt Wright

The development of a new generation of high capacity wash water spirals by MT is focused on greatly reducing plant foot print while still maintaining good metallurgical separation performance. After close collaboration with our Canadian client and extensive site test work, the HC33.3 model spiral was developed. The series of tests enabled small modifications to be made to spiral profiles and the wash water addition techniques. Each successive

change improved performance until metallurgical targets achieved by earlier low capacity spiral models were achieved. The added benefit has been the increase in capacity from 3 tph per start to between 4.5 & 5 tph per start and even as high as 5.5 tph with a small fall off in metallurgical grade targets. The success of this onsite test work has led to a substantial order for twin start HC33.3 spirals in both rougher and scavenger duties.

This programme once again highlights the benefits that can be achieved through a close working relationship between the team of specialist design engineers, equipment production people and metallurgists and client personnel. MT has a wide range of active research and development projects and we would welcome closer industry collaboration on all of them.

Congratulations to our South African office team member, Hansie Neethling. He reels in another win coming 2nd in his team in the national competition for shore angling in Zululand, South Africa.



IMME 2009

Mineral Technologies was a proud participant and exhibitor in the 9th International Mining & Machinery Exhibition (IMME) - the largest and most important mining exhibition in India.

Held from 5-8 November, 2008, at Salt Lake Stadium Grounds in Kolkata, this venue attracted over 15,000 visitors and more than 200 exhibitors from 15 countries.

With a presence in the Indian market spanning 30 years, and offices in Kolkata and Cochin, MT is recognised in India as an industry leader in physical separation technology, and process

and engineering design excellence with the well known brands of:

- MD Gravity Separation Equipment
- Carrara Electrostatic Separation Equipment
- Readings Magnetic Separation Equipment
- Kelsey Centrifugal Jig

IMME gave us an opportunity to reiterate our strong commitment as providers of mineral processing solutions to the Indian market and to strengthen our relations with clients and mining professionals.



Surplus Laboratory Equipment

Our ongoing research and development initiatives continue to generate new equipment ideas and improvements to existing equipment. These are all trialled in our laboratory, either at full scale or pilot scale on a range of material types from around the world. But now spring cleaning fever has taken hold in Mineral Technologies metallurgical testing laboratory and to make way for additional equipment developments, we are reluctantly offering some of our older laboratory equipment for sale. The available units are as follows:

- Reading Crossbelt magnet (2 poles + scalper)
- 8/6 Warman pump driven by a 190 HP caterpillar diesel engine
- Electrostatic Screen Plate Separator (quarter size)

Please contact Rick in our Lab (rick.brazier@downeredimining.com, +61 7 55691334) if you are interested in any of this equipment.



ESP Screen Separator



Who we are

Mineral Technologies has been an integral part of the mineral processing landscape for 70 years. The Mineral Technologies spirit has endured through its many incarnations including Mineral Deposits Syndication, Mineral Deposits Limited, MD Mineral Technologies, Roche Mineral Technologies and Downer EDI Mining – Mineral Technologies. Owners have included National Lead, Utah, BHP, Clyde Industries, Evans Deakin Industries and Downer EDI.

As Mineral Deposits Limited, we were known around the world as a significant producer of high quality mineral sands products. From those days as a mineral processor our staff have continued to be inspired to seek out better processing technology or where necessary develop their own.

In the 1980's, this passion led to the creation of a separate business to the mining division devoted solely to the pursuit and development of superior gravity, electrostatics and magnetic process technology.

Many of our staff that drove the creation of this separate company devoted to "Mineral Technologies" are still with us today.

Our staff are certainly highly experienced, but more than that, they are passionate about helping each of our clients to achieve the best possible outcome in their mineral processing operations.

Although our history is in mineral sands mining, we have used this experience to provide processing solutions to clients treating a diverse range of minerals including iron ore, coal, gold, tin chrome, tantalum, silica sands and tungsten.

We have actively sought out and acquired complimentary process technologies incorporating names like Vickers, Humphries, Wright, Reichert, Reading and Kelsey.

We do not just sell equipment and engineering man-hours – we provide a team of people skilled in the design and manufacture of the world's best separation equipment and the design of process flowsheets and robust, trouble-free processing facilities. We are passionate about getting it right and will work to ensure that operations reach their true potential.

We value true partnerships with our clients and can support them, their plant and their team for the full life of the operation.

We have the best job in the world. We get handed a bag of dirt and get to design a process, plant and equipment to extract high value products. We get to see these plants built and get to start them up and get them running smoothly and to show our clients how to embrace these operating techniques for their ongoing success.

How cool is that!