

# URUGUAY

*By Carlos V Coirolo*

**T**o date, Uruguay's minerals industry has been based principally on non-metallic minerals: raw materials for construction, glass and ceramics; sand and gravel deposits; bentonite, dolomite and feldspar; ornamental stone including marble, granite and flagstone; and many small-scale operations for semi-precious stones, specifically amethysts and agate. However, the true Uruguayan mining potential may lie in the exploration for, and development of, metallic minerals.

The territory of Uruguay is really only just being started to be explored for base and precious metals. There are lower Proterozoic and Archaean greenstone belts similar in setting to those elsewhere in South and North America, and Australia. These can be correlated (prior to the drifting of the continents), with those in the West African craton. Moreover, Uruguay's basement rocks have been enhanced in terms of mineral potential by subsequent tectonic activity. Uruguay's 'window' of Precambrian rocks offers substantial potential and significant mineral discoveries have already been made.

Uruguay's Mining Code provides a suitable framework for exploration, development and mining. Land ownership is separated from the mineral rights, which, in principle, belong to the State, and different types of mineral rights can be granted:

- a Prospecting Permit, which allows the title holder to carry out superficial exploration works;
- an Exploration Permit, which allows drilling, and eventually a pilot-scale processing plant; and
- a Mining Concession.

The National Directorate of Mining and Geology (DINAMIGE), is the government agency responsible for the administration of mineral titles, as well as geological studies. It also provides certain services such as laboratory and geophysical studies, hydro-geological surveys, drilling services, etc.

## **Gold**

Currently there is only one gold mine in operation in Uruguay – the San Gregorio mine at Minas de Corrales, in the Department of Rivera. The property had been acquired in 1998 by Crystallex International Corp and produced at the rate of 70,000 oz/y of gold for several years, prior to its sale in October 2003 to the Canadian junior Uruguay Mineral Exploration Inc (UME).

UME purchased the mine in order to be able to develop its new Arenal discovery, located some 3 km from the San Gregorio plant. The company has announced that it expects to be producing around 100,000 oz/y from Arenal

from 2005 onwards. Other ore sources in the area include Zapucay, (some 30 km to the east), where a small open pit has been operating since mid 2003, and Sobre Saliente and Castrillon, where small resources are planned to be mined as an adjunct to Arenal in 2005. In addition, the UME has an active drilling programme under way in and around San Gregorio itself.

Arenal, which is the largest gold deposit yet found in Uruguay, was discovered by UME in 2003, as a result of a regional exploration programme that included geochemical soil sampling and extensive trenching. UME has since completed a 4,000 m drilling programme and has outlined a measured resource of 1.5 Mt averaging 2.96 g/t Au, and an inferred resource of 7.5 Mt at 2.26 g/t Au. A continuing programme of infill and step-out drilling at Arenal is confirming grade consistency and enlarging the extent of the deposit, with better intersections from the more recent drilling including 45 m at 6.47 g/t Au in one hole and 57 m at 7.16 g/t Au in another. The deposit now extends for at least 350 m along strike and to a vertical depth of 130 m.

A mining lease has been granted by the national authorities, and production began in October 2004.

In addition to gold, UME has a portfolio of exploration projects including copper, nickel and diamonds.

### **Agates**

Uruguay's exports of agates have reached historic highs over the past two years and, according to DINAMIGE, were close to 9,000 t in 2003 compared with less than 1,000 t/y prior to 2002. The increase has been mainly a result of the development of the Chinese market. Even though current prices are much lower than in the past, around 80% of production is now being sold (compared with some 20% previously). At the moment, the authorities are seeking to add value to the exported stones, as well as being able to export the remaining 20% of production.

### **Amethyst**

The export of amethyst has also shown a significant increase in recent years. Comparing the figures for 2001 (the previous record year) with 2003, there have been increases of 53% by volume and 62% by value. DINAMIGE estimates that exports last year were close to 500 t. Currently the mining authorities are searching for new markets.

### **Limestone**

Uruguay produces limestone for use in cement for exportation or for internal consumption. Exports of cement reached a nadir in 2002 on account of the collapse in the Argentinian market. A recovery is now under way, however, based mainly on the Brazilian market, which at the moment accounts for 85% of sales. The Argentinian market is slowly recovering also.

Uruguay's domestic consumption of cement reached a low point after the economic crisis of 2002 which literally halted construction in the country. The

situation persisted through most of 2003 and only began to improve during the final quarter.

### **Granites**

Uruguay produces good quality 'black granite' comparable with the quality of South Africa products. However, a drop in the Japanese market as well as a lack of competitive pricing, has resulted in a steady fall in export levels in recent years. Following the devaluation of the peso, this sector has shown signs of recovery, however, and some abandoned quarries are now resuming production. Also, two cutting plants, one in the Nueva Palmira Free Zone, and the other on the outskirts of Montevideo, have started production again.

### **Silicon metal**

A silica project is being studied by the Brazilian company Rima, and a feasibility study is being prepared for the production of silica metal from quartz deposits. Mineral titles have been granted to Rima, as well as other companies, to exploit the quartz. So far, the results of Rima's sample analyses have been satisfactory.

### **Diamonds**

Centuries before diamonds were discovered in South Africa, Uruguay's neighbour, Brazil, was the world's leading producer. Prior to the break-up of Gondwana, what is now Uruguayan territory was adjacent to Namibia. Both Brazil and Namibia produce diamonds and some studies suggest that Uruguay could also host primary diamond deposits.

UME is exploring a large area in the Department of Rivera. The company believes that the chances of finding diamond deposits are good because diamond indicator minerals (G9 and G10 garnets) have been found.

### **Nickel**

UME is also exploring for nickel, in the departments of Flores (Andresito) and San José (Mal Abrigo). The exploration programmes are active but the company has not released any data.

### **Mineral sands**

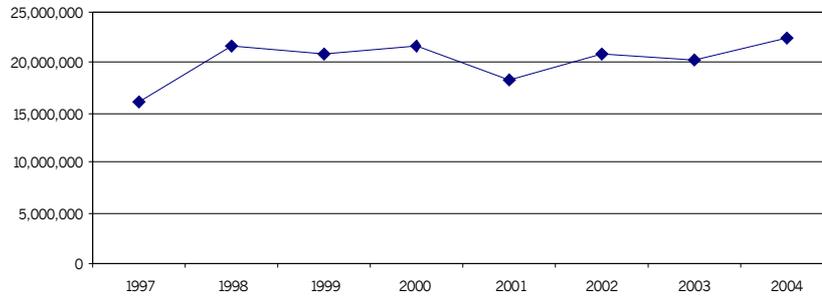
The so-called 'Arenas Negras' (black sands) project is in its final stage of calling for bids. The National Development Corp (CND), created local company Arenas Negras SA, wholly owned by CND, which holds the exploration title for a prospective area.

### **Oil exploration**

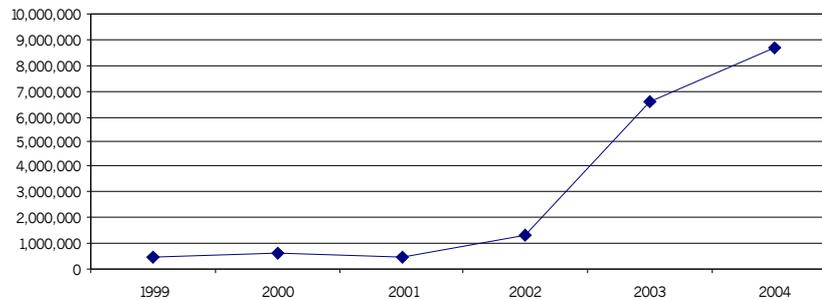
The continental platform of Uruguay contains sediments which could indicate the existence of oil. In January 2002, the state-owned company Ancap entered into a joint venture with the French company Compagnie Generale de Geophysique (CGG) through which CGG undertook a 10,000 km offshore seismic survey. The programme has been extended until July 2004 and the results were expected to be released later in 2004.

Graphs sourced from DINAMIGE

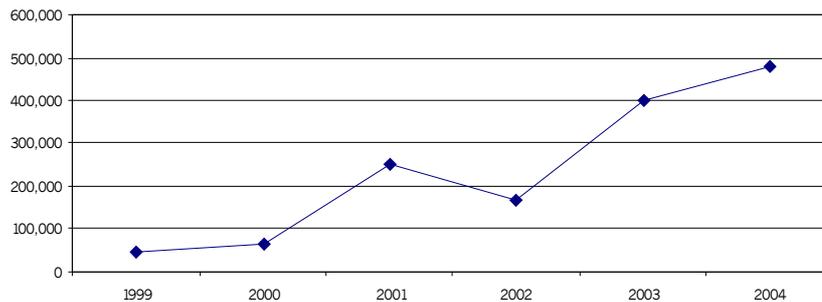
Gold Exports (U\$S)



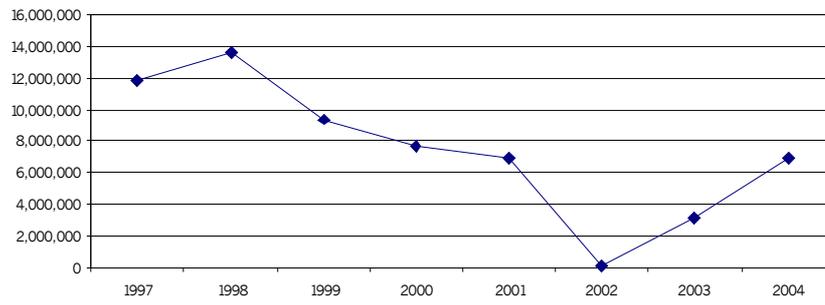
Agate Exports (kgs)



Amethysts Exports (kgs)



Cement Exports (U\$\$)



Granite Exports (Tons)

