

THE MINERAL INDUSTRY OF

FIJI

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The economy of Fiji remained agrarian, depending mainly on the sugar industry but also having a large subsistence sector. The mineral industry was of only minor importance, contributing less than 1% to the \$1.6-billion² gross domestic product (GDP) of the country. The economy in 1994 recorded an increase in its GDP of 5.0% compared with that of 1993.

Gold continued to be the mainstay of the minerals industry in Fiji, accounting for virtually all of the contribution from the mining and quarrying sector to the country's GDP. Domestic exports of unrefined gold were valued at \$44 million, representing 7.8% of total domestic exports valued at \$562 million.³

Metallic mineralization was widespread in Fiji, occurring as polymetallic base metal sulfide deposits, disseminated porphyry copper deposits, epithermal precious-metal deposits, residual bauxite deposits, and manganese and heavy-mineral sand deposits. However, gold along with associated silver was the only mineralization mined during 1994. Fiji's mineral industry also consisted of a cement plant next to the harbor at Suva, and several quarries for the production of stone and crushed gravel, limestone, and coral and river sands. The cement plant was opened in 1961 by Fiji Industries Ltd. and, until 1993 when cement production was begun at Lae in Papua New Guinea, was the region's only producer.

Sydney, Australia-based Placer Pacific Ltd.'s local subsidiary, Placer Pacific Namosi Ltd., renewed in September 1994 its exploration drilling program at its Namosi low-grade porphyry copper-gold prospect. Placer Namosi was trying to further define additional mineralization of higher-than-average grade in order to improve its cash flow in the earlier years of possible mine life. Namosi is about 30 kilometers (km) northwest of Suva, 20 km from the coast. Prior to this phase of drilling, Placer Namosi and its predecessors had delineated 930 million metric tons (mt) of measured resources grading 0.43% copper and 0.14 grams per mt gold using a cut-off grade of 0.3% copper since 1991.⁴

If the proposed \$986-million Namosi copper-gold mining project were to proceed, it would provide employment for 2,500 to 3,000 people during the planned 3-year construction period, and another 1,500 jobs for workers involved in the mining of the deposit. Export earnings derived from the project would expand by about \$280 million per year initially.⁵

Mining of the deposit was planned to be at a rate of 100,000 metric tons per year (mt/a) of ore from two adjoining open pits employing conventional shovel and truck benching operations. The projected mine life was 30 years, with the pits eventually covering an area approximately 2 km by 3.5 km. Crushing and milling of the ore at the mine site would produce a thickened slurry that was to be transported 20 km by a gravity-fed pipeline to a mineral separation plant on the coast. Bulk copper-gold concentrate then would be shipped to buyers from an adjacent port site.⁶

The concentrator tailings were planned to be disposed of by means of deep-ocean deposition, similar to that being used successfully by Misima Mines Pty. Ltd., also a subsidiary of Placer Pacific Ltd., on Misima Island in Papua New Guinea. The tailings would be discharged into the sea at a depth of 150 meters (m) to 300 m, sufficient to ensure they would sink to a depth of 1,500 m to 2,200 m in a trench between Suva and Beqa Island.⁷

Although gold has been produced in Fiji since its discovery in 1932, the only significant mines have been the Emperor Mine and the Tavua Basin Mine, both owned and operated by the Emperor Gold Mining Co. Ltd. (EGM). The Emperor Mine is adjacent to the town of Vatukoula, meaning "Rock of Gold," about 100 km northwest of the capital at Suva and 8 km inland from the coast, in the Nakauvadra Mountains at the northern tip of the main island of Viti Levu. The Tavua Basin Mine is inland from the coastal town of Tavua, about 2.5 km south of the Emperor Mine. The Emperor Mine has been in continuous production since 1935, while production from the Tavua Basin Mine began in 1987. Both mines also produced byproduct silver. The Emperor Mine also recovered until 1980 significant amounts of selenium and tellurium oxides from the ore.

Although the Emperor Mine has evolved recently from being strictly an open-pit operation, to a surface-underground composite, to exclusively in 1993 and underground operation, for most of its life it was operated solely as an underground mine. Mining in 1994 was done utilizing two vertical shafts, the Philip and the Wallace Smith, each extending to depths of more than 600 m, and the Emperor Decline, which provided access to stoping up to 300 m below the surface.⁸

Mount Kasi Ltd., a wholly owned subsidiary of Australia's Pacific Islands Gold NL, was awarded in October 1994 a special mining lease (SML) by the Department of Mineral Resources to develop and mine the Mount Kasi gold project

at Savusavu on the south coast of Vanua Levu, Fiji's second-largest island. Excluding those SMLs granted to EGM to continue operations at its mining sites, this was the first lease granted since 1968 and 1969, respectively, for manganese and bauxite mining.⁹

Site development began at yearend 1994 and the open pit was expected to come on-stream by midyear 1995, initially producing 300,000 mt/a of low-cost eluvial ore and tapering to 250,000 mt/a of higher grade epithermal ore as the pit deepened. Production was expected to be more than 9,000 kilograms per year of gold spanning a minimum mine life of 9 years. The SML was approved for 7 years to mine precious metals and metalliferous minerals.¹⁰ The mine at Mount Kasi previously was mined from the early 1930's until 1946, when it became too difficult to extract the gold.¹¹

Essential elements of the islands' infrastructure include 644 km of 0.610-m narrow-gauge railroad belonging to the Government-owned Fiji Sugar Corp.; 3,300 km of roads, including 1,590 km paved; 1,290 km gravel, crushed stone, or stabilized-soil surface; and 420 km unimproved earth. Inland waterways consist of 203 km, of which 122 km is navigable by motorized craft and 200-mt barges. There are 4 ports (Labasa, Lautoka, Savusavu, and Suva) for international shipping and 25 airports in the country, 3 with permanent-surface runways. Fiji had an electric power generating capacity of 215 megawatts and produced power

at the approximate level of 560 kilowatt hours per capita.¹²

Generally, infrastructure for mineral industry operations are regarded as adequate.

¹Text prepared July 1995.

²Where necessary, values have been converted from the Fijian dollar (F\$) to U.S. dollars at the yearend rate of F\$1.4235=US\$1.00.

³Fiji Bureau of Statistics, Suva. Current Economic Statistics, Jan. 1995, pp. 6, 54, and 62.

⁴Mining Annual Review 1995. Fiji. Mining Journal (London), in press.

⁵South Sea Digest (Sydney). V. 14, No. 9, July 15, 1994, p. 3.

⁶South-East Asia Mining Letter (Hong Kong). V. 6, No. 18, Sept. 23, 1994, p. 5.

⁷Islands Business Pacific (Suva). V. 20, No. 8, Aug. 1994, p. 65.

⁸Mining Journal (London). V. 322, No. 8271, Apr. 15, 1995, p. 275.

⁹Work cited in footnote 3.

¹⁰Australian Journal of Mining (Richmond North, Australia). V. 9, No. 99, Dec. 1994, p. 39.

¹¹South Sea Digest (Sydney). V. 14, No. 18, Nov. 18, 1994, p. 3.

¹²U.S. Central Intelligence Agency, Washington, DC. The World Factbook 1994, pp. 132-133.

Other Source of Information

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TABLE 1
 FIJI: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity		1990	1991	1992	1993	1994
Cement, hydraulic		77,900	78,800	84,400	79,500 r/	94,000
Gold, mine output, Au content	kilograms	4,120	2,740 r/	3,700 r/	3,780	3,440
Silver, mine output, Ag content	do.	779	477	1,260	1,110	1,390
Stone, sand and gravel:						
Coral sand for cement manufacture		65,000	71,700	61,500	65,300	66,900
River sand for cement manufacture		8,390	19,400	20,000 e/	13,200	15,000 e/
River sand and gravel, n.e.s.	cubic meters	839,000	800,000 e/	73,400 r/	427,000 r/	148,000
Quarried stone	do.	152,000	73,800	63,400	84,700	63,200

e/ Estimated. r/ Revised.

1/ Previously published and 1994 data are rounded by the U.S. Bureau of Mines to three significant digits.

2/ Table includes data available through July 7, 1995.