

NEW CALEDONIA

By Travis Q. Lyday

The French Territory of New Caledonia and Dependencies is one of the largest Pacific Island countries. It consists of the 400-kilometer-long main island La Grande Terre and its surrounding smaller islands. It is divided into the Loyalty Islands, the Northern, and the Southern Provinces.

The mineral industry of New Caledonia continued to be dominated by the mining of nickeliferous laterite-saprolite and garnierite ores and the production of ferronickel of various commercial grades and matte that contains 75% nickel at the 63,000-metric-ton-per-year (t/yr)-capacity Doniambo Smelter in the harbor of Nouméa, the territorial capital. New Caledonia was the world's fourth largest nickel producer after Russia, Canada, and Australia (Kuck, 2000) and the largest ferronickel producer (Resource Information Unit, 2000, p. 120). Nickel, which was the mainstay of the territory's economy, accounted for about 12% of its gross domestic product and about 80% of total exports (Islands Business, 1999). New Caledonia has almost 25% of the world's known nickel reserves (Mining Journal, 1999a). Construction materials were produced in New Caledonia from several quarries, and Société des Ciments de Numbo operated a cement plant at Nouméa.

Commodity Review

Nickel.—Nickel production was dominated by Société le Nickel (SLN), which, following privatization during the year by the French Government, was owned 60% by Eramet S.A. of France, 10% by Nisshin Steel Co. of Japan, and 30% by New Caledonian citizens. On La Grande Terre, SLN mined nickel ore from several operations that included operations at the mining centers of Kouaoua, Népoui-Kopeto, Thio, and Tiébaghi. SLN's output from these mining centers supplied the feed for its Doniambo Smelter. Additional production was from smaller, independent open pit operations that included JC Berton Mines at the Bienvenue mining center, Société Minière du Sud Pacifique S.A. (SMSP) at the Kouaoua mining center, Société des Mines de la Tontouta at Bogota Peninsula and Nakéty, and Société Minière Koindé Bouloupatis and the contractor-operated mines managed by Société Minière Georges Montagnat S.A. at the Tontouta mining center. The nickel ore was mined by removing the tops and flanks of laterite-rich hills and mountains that comprise ultramafic rock and then trucked, piped, or moved on cableways to coastal ore stockpiles. Except at the Thio Mining Center, the stockpiled ore was loaded onto barges that were towed out to waiting ore carriers. Ships were loaded directly from conveyor belts that ran on sea gantries at Thio (Resource Information Unit, 2000, p. 26).

SLN's nickel ore production was concentrated and used

primarily as feed at the Doniambo Smelter for the production of about 80% ferronickel ingots and 20% matte, with minor amounts of concentrate exported to Australia and Japan. Most of the ferronickel production was shipped to consumers in Australia and Japan, and all matte production was shipped to Eramet's refinery at Sandouville, near Le Havre in northern France, for conversion into high-purity nickel metal and salts of nickel and cobalt (Resource Information Unit, 2000, p. 120). Mine output from the independently operated mines was mainly for export to QNI Ltd.'s Yabulu nickel refinery near Townsville, Queensland, and to Japanese nickel smelters and refiners, such as Pacific Metals Industry Co. Ltd. at Hachinohe, Aomori Prefecture. Some of the independently produced output also was used to feed the Doniambo Smelter.

On February 1, 1999, Falconbridge Ltd. signed a protocol agreement that allowed it to proceed with an environmental study and exploration of the Koniambo laterite deposit. According to the agreement, Falconbridge (49%) and SMSP, which was its New Caledonian joint-venture partner (51%), will be granted mineral rights to the Koniambo deposit in exchange for the Poum nickel property, which SMSP was giving to Eramet. Falconbridge and SMSP planned to build a 55,000-t/yr ferronickel smelter based on Koniambo ore (Mining Journal, 1999b). The prefeasibility study was scheduled to be completed by the end of 2001, and the feasibility study, by the end of 2002 (Resource Information Unit, 2000, p. 101).

In October 1999, Inco Ltd. of Canada commissioned a \$50 million, 12-metric-ton-per-day integrated pilot plant for testing new laterite-processing technology at its 85%-owned Goro lateritic nickel-cobalt project, which is about 80 kilometers north of Nouméa. The plant was expected to validate proprietary pressure acid leach (PAL) and solvent extraction processing technologies developed by Inco to treat the Goro ores. The pilot plant was to enable Inco to be in a position to decide by the second half of 2000 whether to build a commercial plant. If developed, the commercial plant could have a production capacity of up to 54,000 t/yr of nickel in oxide and 5,400 t/yr of cobalt. The French Government's Bureau de Recherches Géologiques et Minières owned the remaining 15% interest in the Goro project (Engineering and Mining Journal, 1999). Goro's resources add up to more than 200 million metric tons (Mt) of ore averaging 1.6% nickel and 0.17% cobalt (Metal Bulletin, 1999a).

Argosy Minerals Inc. was conducting a feasibility study at its Nakéty nickel laterite property to investigate the building of an onsite PAL processing plant, projected to come on-stream in 2002 or 2003. Argosy was formed in May 1999 by the merger of Canada's Argosy Mining Corp. and Australia-based but Toronto-listed Calliope Metals Corp. The Nakéty ore body was

estimated to have a resource of 83 Mt averaging 1.5% nickel and 0.13% cobalt (Metal Bulletin, 1999b).

Other Metals.—On the nonnickel front, Australian-based Caledonian Pacific Minerals NL was exploring for gold and base metals on several tenements. In an aggressive exploration program that included drilling in 1999, the company outlined anomalous gold-arsenic-antimony-mercury soils in the Nakéty region, which includes the abandoned Nakéty antimony prospect (South Sea Digest, 1999). In addition to abundant resources of nickel ore, the island territory also has potential for volcanogenic copper-lead-zinc-gold-silver sulfide deposits and porphyry copper deposits. Significant prospects have been reported for antimony, copper, gold, iron ore, lead-zinc, manganese, and phosphate rock. None of these, however, has been mined commercially.

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Major Source of Information

Le Service des Mines et l'Energie
BP 465, Nouméa, Cedex 98845, New Caledonia
Telephone: +687 27 39 44
Fax: +987 27 23 45
E-mail: mines@territoire.nc
URL: <http://www.territoire.nc>

TABLE 1
NEW CALEDONIA: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/	1995	1996	1997	1998	1999
Cement e/	100,000	100,000	100,000	-- r/ 3/	-- r/ 3/
Cobalt, mine output: e/					
Co content	6,000	6,000	6,500	6,500	6,500
Recovered	800	800	800	800	800
Nickel:					
Ore:					
Gross weight thousand tons	7,087	7,240	8,145	7,526 r/	6,561
Ni content	119,905	122,486	136,467	125,319 r/	110,062
Metallurgical products:					
Ferronickel:					
Gross weight e/	169,000	169,000 r/	172,000	157,959 r/ 3/	157,592 3/
Metal content (nickel plus cobalt)	42,200	42,173 r/	44,312	44,491 r/	45,289
Nickel matte:					
Gross weight e/	18,500	16,800	18,900	16,813 r/ 3/	15,808 3/
Metal content (nickel plus cobalt)	10,143	11,239 r/	10,580	12,011 r/	11,353

e/ Estimated. r/ Revised. -- Zero.

1/ Table includes data available through July 11, 2000.

2/ In addition to the commodities listed, crude (unspecified) and crushed stone, construction sand, and silica sand for metallurgical use are produced, but data are insufficient to make reliable estimates of quantities.

3/ Reported figure.