



2010 Minerals Yearbook

ZIMBABWE

THE MINERAL INDUSTRY OF ZIMBABWE

By Philip M. Mobbs

Zimbabwe's diverse mineral output included about 5% of the world's platinum production and about 3% of the world's palladium output. In 2010, additional mineral production companies resumed operations at mines and plants that had been temporarily suspended (placed on care-and-maintenance status) in the past few years. Few companies, however, were operating at full capacity owing in part to the difficulty in securing funding and the ongoing uncertainty concerning the pace of the indigenization process in the mining sector (which would affect future equity ownership of mineral operations) (table 1; International Monetary Fund, 2011, p. 21–23; Loferski, 2011).

In 2010, the real gross domestic product growth was estimated to be 9% compared with 6% in 2009 and –18% in 2008. The inflation rate was down to an estimated 3% in 2010 compared with 6.5% in 2009 and an estimated average of 55,600,000,000% for the first nine months of 2008 (International Monetary Fund, 2011, p. 27).

The Ministry of Mines and Mining Development manages the mineral sector in accordance with the Mines and Minerals Act (chapter 21:05), the Mining (General) Regulations, 1977, and their amendments. Mining operations also are regulated by sections of the Environmental Management Act of 2002 (chapter 20:27) and its 2007 amendment, the Explosive Act, the Forest Act, the Parks and Wildlife Act, the Public Health Act, and the Suppression of Money Laundering Act. The Indigenisation and Economic Empowerment Act of 2007, which requires that 51% ownership of businesses in Zimbabwe with a net asset value greater than \$500,000 be acquired by eligible Zimbabweans, was published in 2008. The Indigenisation and Economic Empowerment Regulations (chapter 14:33) became effective in early 2010.

Minerals in the National Economy

Of the approximately 30 minerals and mineral-based commodities produced in Zimbabwe, gold and platinum-group metals (PGMs) were the most economically significant. In accordance with the Minerals Marketing Corp. of Zimbabwe Act [as modified by the Minerals Marketing Corp. (Exemption) Regulations, 1983, and the Precious Stones Trade Act, 1978], state-owned Minerals Marketing Corp. of Zimbabwe officially marketed much of the mineral production of Zimbabwe. The Reserve Bank of Zimbabwe's monetary policy statement of February 2, 2009, authorized organizations that held appropriate permits to export gold. Mining companies previously were required to sell their gold and silver output to Fidelity Printers & Refineries (Private) Ltd., which was a subsidiary of the Reserve Bank, for a mix of hard and local currency. PGM concentrates and smelter matte were shipped to processing facilities in South Africa that were operated by Impala Platinum Ltd. Royalties on precious metals were increased to 4% of gross revenue from 3.5%, effective beginning October 1, by

the 2010 Mid Term Fiscal Policy Statement. Royalties on base metals remained at 2% of gross revenue (Central African Gold PLC, 2010, p. 3; Kramarenko and others, 2010, p. 39).

Production

In 2010, production of numerous mineral commodities increased significantly owing to the Government's changes in legislative and monetary policies in 2009. Such changes included the temporary replacement of the Zimbabwe dollar by a multicurrency national financial system, which aided the industry's recovery from hyperinflation that had ravaged Zimbabwe's economy in 2008 and early 2009, and allowing organizations to export gold instead of selling it to the Government. Chromite and ferrochromium production increased in response to increased world demand for ferrochrome. The significant increase in diamond production was attributed to increased activity in the Marange diamondfields, which produced 90% industrial-grade material. Gold output was estimated to have continued to rebound from the low volumes of 2008 owing to legislation that allowed production companies to export gold themselves instead of selling it to the Government and waiting for payment. Estimated or reported production of ammonia, cement, coal, cobalt, copper ore and metal, ferrosilicon chromium, graphite, nickel ore, phosphate rock, PGMs, silver, and stone also increased. Production volumes of asbestos, coke, lithium, perlite, talc, and vermiculite were estimated to have decreased compared with those of 2009 (table 1; Kimberley Process Certification Scheme, 2010).

Structure of the Mineral Industry

Domestic and international investment companies, domestic and international mining companies, Government-owned companies, mining cooperatives, multinational cement companies, and small-scale miners managed mineral operations in Zimbabwe. Foreign investment was concentrated in the cement, chromium, coal, diamond, gold, nickel, PGM, and steel sectors.

State-owned operating companies in the mineral sector included Zimbabwe Mining Development Corp. (ZMDC), which controlled many inactive copper and gold mines. Subsidiaries of state-owned Industrial Development Corp. of Zimbabwe Ltd. produced industrial minerals and mineral-based commodities. Zimbabwe Iron and Steel Company (Private) Ltd. (Zisco), in which the Government held an 89% interest, owned an idle crude steel plant, and a Zisco subsidiary managed iron ore and limestone mines.

Commodity Review

Metals

Chromium and Ferroalloys.—Zimbabwe Alloys Ltd. (Zim Alloys) and Zimbabwe Mining and Smelting Co. (Private) Ltd. (Zimasco) were the major chromite ore producing companies. Much of the ore produced by Zimasco was from podiform deposits in the Shurugwi area; however, the lumpy ore from the podiform deposits was expected to be mined out by 2015 at the current (2010) rate of production. Numerous small-scale mining companies and cooperatives produced a friable chrome ore from alluvial deposits or from the stratiform deposits along the Great Dyke; this ore required agglomeration before being processed by the ferrochrome producers. In 2010, the electric-arc furnace facilities of the Zimbabwe ferrochrome producers remained adversely affected by the availability of electric power (Chitambira, Miso-Mbele, and Gumbie, 2011).

Zim Alloys and Zimasco were also Zimbabwe's major ferrochrome producers. Several small-scale ferrochrome smelters, which were primarily Chinese-owned, had been established along the Great Dyke in the past few years (Chitambira, Miso-Mbele, Gumbie, 2011).

Zimasco proposed to rehabilitate one of its six furnaces by 2012, which would restore the Kwekwe plant's capacity to 230,000 metric tons per year (t/yr). Zimasco also planned to install a 600,000-t/yr-capacity pelletizing and sintering plant and a new 60-megavolt-ampere furnace, which would increase the plant's capacity to more than 300,000 t/yr by 2014 (Herald, The, 2010; Kadzere, 2011).

In 2010, Chromex Mining plc acquired Waylox Mining (Private) Ltd., which held the Prince of Wales and the Trixie prospects, and started a feasibility study on the Trixie claims. Synergy Africa Ltd. of the United Kingdom, which was a joint venture of Rukki Group Plc of Norway (51%) and Kermas Ltd. of the British Virgin Islands (49%), subsequently acquired Chromex Mining. RioZim Ltd. of Zimbabwe explored the Darwendale claims for chromite and evaluated a joint venture with Marantha Ferrochrome (Private) Ltd. of Zimbabwe to produce 30,000 t/yr of chromite concentrate from Darwendale. A consortium, which included Metmar Ltd. of South Africa, acquired 40% equity interest in Zim Alloys from Benscore Investments (Private) Ltd. of Zimbabwe (Njini, 2010).

Iron and Steel.—The proposed privatization of 60% of the equity of Zimbabwe Iron and Steel Company (Private) Ltd. (Zisco) was halted in May after the Government declared that the bids to acquire Zisco by ArcelorMittal South Africa Ltd. and by the Gateway Zimbabwe consortium (which included Jindal Steel and Power Ltd. of India) were not in Zimbabwe's national interest, as the companies were too large. Additionally, the issue of who (the buyer or the Government) was to settle Zisco's existing debt, which was estimated to range from \$240 million to \$300 million, remained unclear. To collect some of the debt owed by Zisco, KfW Bankengruppe of Germany began legal proceedings to seize property in South Africa that was owned by the Government of Zimbabwe. The Government subsequently renewed its efforts to divest 60% of Zisco's equity and by August, requested new bids for Zisco. By October, Essar

Africa Holdings Ltd. of Mauritania, which was a subsidiary of Essar Group of India, was selected to be Zisco's new majority owner. Essar Africa Holdings began negotiations to acquire Zisco and its subsidiaries, which included Buchwa Iron Mining Co., from the Government. Buchwa controlled operational and undeveloped iron ore deposits in Zimbabwe. Negotiations for Zisco continued at yearend (Business Report, 2010; Muleya, 2010; Ndlela, 2010b; Makombe and Nyakezeyya, 2011).

Nickel.—RioZim continued operations at the Empress Nickel Refinery at about 50% of installed capacity. RioZim reported production of about 8,600 metric tons (t) of copper and nickel in 2010 compared with 8,844 t in 2009. Lower-than-expected volumes of imported nickel matte, which was toll refined for BCL Ltd. of Botswana, affected processing operations, as did equipment failure, electrical-power outages, water shortages, and a shortage of working capital (RioZim Ltd., 2011, p. 11, 14).

Bindura Nickel Corporation Ltd.'s nickel mines, smelter, and refinery remained on care-and-maintenance status in 2010. Bindura Nickel, which was a subsidiary of Mwana Africa PLC, evaluated the feasibility of restarting mining operations at the Trojan Mine in Bindura without restarting the adjacent smelter or refinery (Mwana Africa PLC, 2011, p. 10).

The lack of available funding delayed Biometallurgical Group of Zimbabwe's proposed redevelopment of the Empress nickel deposit. Niger Uranium Ltd. of the United Kingdom formed a joint venture with Southern Africa Nickel Ltd. of South Africa, which held the Bend nickel prospect and other projects in Zimbabwe. The joint venture planned to explore the concessions, which had last been evaluated in 1992 by Falconbridge Ltd. of Canada.

Platinum-Group Metals.—The Ngezi Mine, which was operated by Zimplats Holdings Ltd. of Guernsey, produced 3.9 million metric tons (Mt) of ore in 2010. The ore contained 3,493 t of nickel, 2,506 t of copper, about 5.6 t of platinum, about 4.6 t of palladium, about 600 kilograms (kg) of gold, and about 500 kg of rhodium (Zimplats Holdings Ltd., 2011a, p. 21; b).

The Phase I expansion project at the Ngezi Mine, which included the development of the Bimha Mine (Portal 4), was expected to be completed in 2011. Zimplats provisionally approved a \$445 million Ngezi Phase II expansion program, which included the 2-million-metric-ton-per-year (Mt/yr)-capacity Mupfuti (Portal 3) underground mine, a new 2-Mt/yr-capacity concentrator, and additional employee housing. The Phase II expansion was expected to increase the mining complex's platinum output capacity to about 8.4 t/yr from about 6 t/yr (Zimplats Holdings Ltd., 2010).

The Mimosa Mine, which was operated by Mimosa Investments Ltd. of Mauritius, produced about 2.3 million metric tons (Mt) of ore in 2010. Exported concentrated ore contained 2,792 t of nickel, 2,396 t of copper, 79 t of cobalt, about 3.2 t of platinum, about 2.4 t of palladium, about 430 kg of gold, and about 250 kg of rhodium (Aquarius Platinum Ltd., 2010, p. 28; 2011, p. 13).

Unki Mines (Private) Ltd., which was a subsidiary of Anglo Platinum Ltd. of South Africa, commissioned the Unki concentrator in November. About 2.2 t/yr of platinum contained in concentrate was slated to be recovered when the mine reached full production in late 2013. Concentrate was to be trucked

about 500 kilometers to the Polokwane smelter in South Africa (Anglo Platinum Ltd., 2011, p. 96).

In November, Cape Range Ltd. of Australia secured an option to acquire up to 100% equity in the Snakes Head platinum project from Willaway Enterprises (Private) Ltd. of Zimbabwe. The Snakes Head project is located at the northern end of the Great Dyke.

Industrial Minerals

Asbestos.—The working levels of both the Gaths Mine and the Shabanie Mine were flooded in early 2010 after electrical power to the mines was disconnected owing to unpaid bills. The flooding ruined equipment that remained underground, which included conveyor belts, electrical transformers, load-haul-dump trucks (scoop trams), ore crushers, ventilation blowers, and water pumps (Kadzere, 2010; Mpofo, 2010).

Lithium.—In October, Cape Range entered into an option to acquire up to 75% equity in the Domboshawa Hill lithium project from Willaway Enterprises. Cape Range subsequently initiated due diligence research on the project, which was located northeast of Harare (Cape Range Ltd., 2010).

Nitrogen.—Sable Chemical Industries Ltd. operated a nitrogenous fertilizer facility located north of Kwekwe. The facility included an air separation plant, an ammonia synthesis plant, an electrolysis plant, an ammonium nitrate plant, and a nitric acid plant. Locally produced and imported ammonia, hydrogen, and nitric acid were the feedstock for the ammonium nitrate plant. Sable increased ammonium nitrate production to 89,625 t in 2010 compared with 41,959 t in 2009. Repairs were completed on 10 of its 14 electrolysis units, which separated water into hydrogen and oxygen. The cost of electrical power for the electrolysis plant, however, continued to degrade Sable's financial situation (TA Holdings Ltd., 2010a, p. 5; 2011, p. 8).

A 4-year \$40 million rehabilitation program of the Sable facility had been proposed, but not implemented. Replacement of the electrolysis plant and importation of additional ammonia would reduce costs, but closure of the electrolysis plant would eliminate the facility's oxygen production, which was sold to local ferrochrome and steelmaking operations. In addition, Sable had problems importing sufficient amounts of ammonia owing to the lack of railroad tank cars and a general reduction in the timeliness of rail freight movement in Zimbabwe (Sandu, 2010b; TA Holdings Ltd., 2010a, p. 5; b).

Outlook

Zimbabwe has abundant mineral resources and a well-developed (but deteriorated) transportation system. The ongoing political uncertainty and the divestment of equity interest that is required by the Indigenization and Economic Empowerment Act are expected to continue to constrain short-term investment in the Zimbabwe mining industry; however, optimistic mining companies, especially those from Asia, continue to pursue mineral-sector investments. After the country's transition from the inflation-ravaged Zimbabwe dollar to usage of the South African rand and U.S. dollar in 2008, the mineral industry's chronic foreign currency shortage

abated, but locally sourced loans to fund mineral processing and mining operations remained scarce in 2010. Shortages of electrical power, food, fuel, and skilled employees are also expected to continue to affect mineral sector operations adversely in the near term (Goko, 2010; Kaseke, 2010, p. 1–4; Ndlela, 2010a; Sandu, 2010a; Sibanda, 2010; Frost & Sullivan Ltd., 2011).

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TABLE 1
ZIMBABWE: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2006	2007 ^c	2008 ^c	2009 ^c	2010 ^c
METALS					
Chromite, gross weight	712,908	614,559 ³	442,584 ³	193,673 ³	510,000
Cobalt, metal content ⁴	26 ^{r,3}	29 ^{r,3}	28 ^{r,3}	39 ^{r,3}	60
Copper:					
Mine output, concentrate, Cu content	2,581	2,681 ³	2,827 ³	3,572 ³	4,700
Metal, refinery output, refined/cathode, primary	7,000 ³	6,798 ³	3,072 ³	4,000 ^r	4,545 ³
Gold kilograms	11,354	6,750 ³	3,579 ³	4,965 ³	9,100
Iron and steel:					
Mine output, iron ore:					
Gross weight thousand metric tons	104	79 ³	3 ^{r,3}	--	--
Fe content ^c do.	52	55	1 ^{r,4}	--	--
Metal:					
Pig iron do.	24	--	--	--	--
Steel, crude do.	24	23	10	14 ^r	14
Ferroalloys:					
Ferrosilicon chromium	200,673	187,327 ³	145,430 ³	72,223 ³	146,000 ^e
Nickel:	1,000 ^e	3,100	1,600	600	1,000
Mine output, concentrate, Ni content					
Refinery output, refined metal: ^c					
Refined from domestic materials	5,510	4,500	3,400	--	--
Toll refined from imported materials ⁵	9,000	9,500	10,300	5,000 ^r	4,039 ³
Total refined nickel metal	14,500	14,000	13,700	5,000 ^r	4,039 ³
Platinum-group metals:					
Palladium kilograms	4,022	4,180 ³	4,386 ³	5,680	7,000
Platinum do.	4,998	5,306 ³	5,642 ³	6,849 ³	8,800
Rhodium do.	410	810	860	1,100	1,400
Ruthenium do.	317	600	630	800	1,000
Iridium do.	147	149 ³	151 ³	209 ³	260
Total do.	9,894	11,000 ³	11,700 ³	14,600	17,000
Silver do.	500 ^e	250	150	200	400

See footnotes at end of table.

TABLE 1—Continued
ZIMBABWE: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2006	2007 ^e	2008 ^e	2009 ^e	2010 ^e
INDUSTRIAL MINERALS					
Asbestos	96,956	84,520 ³	11,489 ³	4,971 ³	2,400
Cement, hydraulic ^e	700	400	400	700	800
Clays ⁶	300 ^e	600	600	600	600
Diamond	1,046,000	695,015 ³	797,198 ³	963,502 ³	8,435,244 ³
Graphite	6,588	5,418 ³	5,134 ³	2,463 ³	5,000
Lithium minerals, gross weight	30,000 ^e	50,000	50,000	50,000	23,500
Magnesite	939	1,814 ³	2,549 ³	449 ³	--
Mica ^e	130,000	200,000	150,000	1,000 ^r	1,000
Nitrogen, N content of ammonia	38,000 ^{r, e}	37,000 ^r	20,000 ^r	14,000 ^r	29,000
Perlite ^e	3,000	3,000	3,000	3,000	1,000
Phosphate rock, marketable concentrate	65,838	46,106 ³	21,051 ³	20,000	63,000
Stone, sand and gravel:					
Granite, black	1,000 ^e	1,000	1,000	500	700
Limestone	50 ^e	50	50	40	50
Silica ⁷	12 ^e	--	--	--	--
Sulfur:					
Pyrite:					
Gross weight	39,777	19,812 ³	30,308 ³	-- ³	-- ³
S content (32.6%)	13,000	6,500 ³	9,900 ³	--	--
Byproduct acid, metallurgical and coal process gas, S content ^e	1,000	1,000	1,000	1,000	1,000
Total ^e	14,000	7,500	10,900 ^r	1,000 ^r	1,000
Talc	140	200	200	200	--
Vermiculite	13,421	17,395 ³	16,123 ³	3,211 ³	--
MINERAL FUELS AND RELATED MATERIALS					
Coal, bituminous	2,107	2,080 ³	1,947 ³	1,750	2,400
Coke, including metallurgical ^e	160	400	112 ³	43 ³	20

^eEstimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ^rRevised. do. Ditto. -- Zero.

¹Table includes data available through November 11, 2011.

²In addition to the commodities listed, secondary aluminum; corundum; feldspar; such gemstones as amethyst, aquamarine, emerald, iolite, and tourmaline; kaolin; kyanite; secondary lead; and ores of antimony, tantalum, tin, and tungsten may be produced, but information is inadequate to estimate output.

³Reported figure.

⁴Metal includes metal content of compounds and salts and may include cobalt recovered from nickel-copper matte imported for toll refining.

⁵Toll-refined data include part of the output from the Bindura refinery and all the production from the Empress refinery, which processes imported nickel matte from Botswana.

⁶Includes fire clay.

⁷Includes rough and ground quartz and silica sand.

TABLE 2
ZIMBABWE: STRUCTURE OF THE MINERAL INDUSTRY IN 2010

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Asbestos		African Associated Mines (Private) Ltd.	Shabanie Mine, Zvishavane	2,400,000 ¹
Do.		do.	Gaths Mine, Mashava	1,400,000 ¹
Cement:				
Clinker		Portland Holdings Ltd. [Pretoria Portland Cement Company Ltd. (PPC)]	Colleen Bawn, about 115 kilometers southeast of Bulawayo	1,000,000
Portland		Lafarge Cement Zimbabwe Ltd. (Lafarge, S.A., 76.4%)	Harare	450,000
Do.		Portland Holdings Ltd. [Pretoria Portland Cement Company Ltd. (PPC)]	Bulawayo	800,000
Do.		Sino-Zimbabwe Cement Company Ltd. (China Building Material Industrial Corporation for Foreign Econo-Technical Cooperation and Zimbabwe Industrial Development Corp.)	Gweru	300,000
Chromite		Local cooperatives	Mines on the southern Great Dyke	340,000
Do.		do.	Mines on the northern Great Dyke	230,000
Do.		Zimbabwe Alloys Ltd. (Zim Alloys) [Benscore Investments (Private) Ltd. and Metmar Ltd. consortium]	Inyala Mine	60,000
Do.		Zimbabwe Mining and Smelting Co. (Private) Ltd. (Zimasco) [Zimasco Consolidated Enterprises Ltd. (ZCE)]	Peak Mine, Railway Block Mine, and Ironton Mine near Shurugwi; Rhodesdale Mine at Lalapanzi	120,000
Coal		Hwange Colliery Company Ltd. [Government, 38%; Edwards Nominees (Private) Ltd., 15.46%; Messina Investments Ltd., 12.6%]	3 Main underground mine, the Chaba open pit mine, and the JKL open pit mine, Hwange	5,000,000
Do.		RioZim Ltd.	Sengwa Colliery, about 200 kilometers northeast of Kadoma	5,000,000
Do.		Steelmakers Zimbabwe (Private) Ltd. (Steelmakers Ltd.)	Chiredzi, about 130 kilometers southeast of Masvingo	1,200,000
Do.		Tulicoal (Private) Ltd. [Senzile Mining (Private) Ltd.]	do.	1,200,000
Cobalt:				
Ore, cobalt content		Bindura Nickel Corporation Ltd. (Mwana Africa PLC, 53%)	Trojan Mine at Bindura and Shangani Mine, about 100 kilometers northeast of Bulawayo	800 ¹
Hydroxide		BSR Ltd. (Bindura Nickel Corporation Ltd., 100%)	Bindura	700 ¹
Copper:				
Ore, copper content		Bindura Nickel Corporation Ltd. (Mwana Africa PLC, 53%)	Trojan Mine at Bindura and Shangani Mine, about 100 kilometers northeast of Bulawayo	1,600 ¹
Refined		Empress Nickel Refinery (RioZim Ltd.)	Eiffle Flats, near Kadoma	6,000
Diamond	carats	Murowa Diamond (Private) Ltd. (Rio Tinto plc, 78%, and RioZim Ltd., 22%)	Murowa Mine, near Zvishavane	252,000
Do.	do.	River Ranch Ltd.	River Ranch Mine, near Beitbridge	NA ²
Do.	do.	Canadile Miners (Private) Ltd. (Core Mining and Minerals Ltd. and Marange Resources (Private) Ltd.)	Marange deposit in the Chiadzwe area	NA ^{2,3}
Do.	do.	Mbada Mining (Private) Ltd. [Grandwell Holdings Ltd. and Marange Resources (Private) Ltd.]	do.	NA ^{2,3}
Gold	kilograms	DTZ-OZGEO (Private) Ltd. (Joint venture of Development Trust of Zimbabwe and JSC Zarubezhgeologia)	Placer mining operations at Penhalonga, about 15 kilometres northwest of Mutare	NA
Do.	do.	Duration Gold Ltd.(Clarity Capital Group, 100%)	Vubachikwe Mine, near Gwanda	NA
Do.	do.	do.	Athens Mine, Mvuma	NA
Do.	do.	do.	Gaika Mine, Kwe Kwe	NA
Do.	do.	do.	Sunace Mine, about 31 kilometers north of Bulawayo	NA

See footnotes at end of table.

TABLE 2—Continued
ZIMBABWE: STRUCTURE OF THE MINERAL INDUSTRY IN 2010

(Metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity	
Gold—Continued	kilograms	Falcon Gold Zimbabwe Ltd. (New Dawn Mining Corp., 85%)	Golden Quarry Mine, about 7 kilometers north of Shurugwi	NA
Do.	do.	do.	Dalny Complex, about 33 kilometers northwest of Chegutu	NA
Do.	do.	Homestake Mining and Technical Services (Private) Ltd. (Biometallurgical Corp.), 100%	Bell Riverlea Mine (reprocessing tailings), about 9 kilometers west of Kwe Kwe	NA
Do.	do.	do.	Chaka Mine, Kwe Kwe	NA
Do.	do.	do.	Monti Christo Mine, about 9 kilometers northwest of Kwe Kwe	NA
Do.	do.	do.	Primrose Mine, Kwe Kwe	NA
Do.	do.	Metallon Gold (Metallion Corp.)	How Mine, about 24 kilometers southeast of Bulawayo	NA
Do.	do.	do.	Shamva Mine, Shamva	NA
Do.	do.	Mwana Africa PLC	Freda Rebecca Mine, Bindura	2,000
Do.	do.	New Dawn Mining Corp.	Turk–Angelus Mine, 56 kilometers northeast of Bulawayo	500
Do.	do.	do.	Old Nic Mine, Bulawayo	100
Do.	do.	RioZim Ltd.	Renco Mine, 75 kilometers south-southeast of Masvingo	1,000
Iron and steel:				
Ferroalloys, ferrochromium	CINA	Smelter at Gweru	5,000 ^e	
Do.	Jin An Corp. and Xin Yu Mining Corp.	do.	5,000 ^e	
Do.	Maranatha Ferrochrome (Private) Ltd.	Smelter at Eiffel Flats	30,000	
Do.	MonaChrome	Smelter at Chegutu	5,000 ^e	
Do.	Olliken Ferro Alloys (Private) Ltd.	Smelter at Kwekwe	25,000	
Do.	Wel Mining	Smelter at Gweru	5,000 ^e	
Do.	Zimbabwe Alloys Ltd. (Zim Alloys) [Benscore Investments (Private) Ltd. and Metmar Ltd. consortium]	do.	45,000	
Do.	Zimbabwe Mining and Smelting Co. (Private) Ltd. (Zimasco) [Zimasco Consolidated Enterprises Ltd. (ZCE)]	Smelter at Kwekwe	180,000	
Iron:				
Iron ore, gross weight	Buchwa Iron Mining Co. [Zimbabwe Iron and Steel Company (Private) Ltd. (Zisco)]	Ripple Creek Mine, near Redcliff	600,000	
Sponge iron	Steelmakers Zimbabwe (Private) Ltd. (Steelmakers Ltd.)	Masvingo	54,000	
Steel:				
Crude steel	Zimbabwe Iron and Steel Company (Private) Ltd. (Zisco)	Blast furnace at Redcliff, near Gweru	72,000 ^{1,4}	
Do.	Steelmakers Zimbabwe (Private) Ltd. (Steelmakers Ltd.)	Electric arc furnace at Redcliff	15,000	
Rolled steel	Lancashire Steel (Private) Ltd. [Zimbabwe Iron and Steel Company (Private) Ltd. (Zisco)]	Wire rod mill at Kwekwe	120,000	
Do.	Steelmakers Zimbabwe (Private) Ltd. (Steelmakers Ltd.)	Rolling mill at Redcliff	36,000	
Lithium	Bikita Minerals (Private) Ltd.	Bikita Mine, 60 kilometers east of Masvingo	33,000	
Nickel:				
Ore	Bindura Nickel Corporation Ltd. (Mwana Africa PLC, 53%)	Trojan Mine at Bindura and Shangani Mine, about 100 kilometers northeast of Bulawayo	80,000 ¹	
Ore, Ni content	Zimplats Holdings Ltd. (Impala Platinum Holdings Ltd., 86.9%)	Ngezi Mine, which includes the Ngwarati Mine (also known as Portal 1), the Rukodzi Mine (Portal 2), and the Bimha Mine (Portal 4)	4,000	

See footnotes at end of table.

TABLE 2—Continued
ZIMBABWE: STRUCTURE OF THE MINERAL INDUSTRY IN 2010

(Metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
<u>Nickel—Continued</u>			
Refined metal	BSR Ltd. (Bindura Nickel Corporation Ltd., 100%)	Bindura	15,600 ¹
Do.	Empress Nickel Refinery (RioZim Ltd.)	Eiffle Flats, near Kadoma	9,000
Nitrogen (ammonium nitrate)	Sable Chemical Industries Ltd. [TA Holdings Ltd., 51%; Chemplex Corporation Ltd., 36%; Yara Zimbabwe (Private) Ltd., 12%]	Electrolysis plant north of Kwekwe	240,000
Phosphate	Dorowa Minerals (Private) Ltd. (Chemplex Corporation Ltd., 100%)	Dorowa Mine, 90 kilometers west of Mutare	155,000
<u>Platinum-group metals:</u>			
Ore	Zimplats Holdings Ltd. (Impala Platinum Holdings Ltd., 86.9%)	Ngezi Mine, which includes the Ngwarati Mine (also known as Portal 1), the Rukodzi Mine (Portal 2), and the Bimha Mine (Portal 4)	2,200,000
Do.	Mimosa Investments Ltd. (Aquarius Platinum Ltd., 50%, and Impala Platinum Holdings Ltd., 50%)	Mimosa Mine, east of Zvishavane	1,800,000
Do.	Anglo Platinum Ltd.	Unki project	1,440,000 ³
Concentrate	Zimplats Holdings Ltd. (Impala Platinum Holdings Ltd., 86.9%)	Selous concentrator	2,180,000
Do.	Mimosa Investments Ltd. (Aquarius Platinum Ltd., 50%, and Impala Platinum Holdings Ltd., 50%)	Mimosa concentrator, east of Zvishavane	1,900,000
Smelter matte	Zimplats Holdings Ltd. (Impala Platinum Holdings Ltd., 86.9%)	Selous smelter	72,000
Pyrite	Iron Duke Pyrites (Chemplex Corporation Ltd.)	Iron Duke Mine	NA
Vermiculite	Shawa Vermiculite (Private) Ltd.	Shawa Mine, near Dorowa	39,000
Do.	Dinidza Vermiculite Mining Co. (Private) Ltd.	Dinidza Mine, near Dorowa	10,000

⁶Estimated. Do., do. Ditto. NA Not available.

¹Operations suspended.

²Ownership disputed.

³Under development or redevelopment.

⁴Nominal capacity 1,000,000 metric tons per year. Blast furnaces awaiting refurbishment.