



# 2010 Minerals Yearbook

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NAMIBIA [ADVANCE RELEASE]

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# THE MINERAL INDUSTRY OF NAMIBIA

By Yadira Soto-Viruet

Diamond, fluorspar, and uranium were the mineral commodities that were the most significant to Namibia's economy. In 2010, Namibia was ranked third among the world's top diamond producers in terms of the value of production in dollars per carat, sixth in terms of the total value of diamond production, and ninth in terms of the volume of diamond production. Namibia was also the fourth ranked producer of uranium, accounting for 8% of world production. Other metals produced in the country included arsenic, gold, lead, manganese, silver, and zinc. Industrial minerals produced included dolomite, granite, marble, salt, semiprecious stones, sodalite, sulfur, and wollastonite (Kimberley Process Certification Scheme, 2011; World Nuclear Association, 2011).

## Minerals in the National Economy

In 2010, the output of the mining and quarrying sector was estimated to have increased by 31.8% compared with a decrease of 45.0% in 2009. The recovery in the mining and quarrying sector was mainly owing to the recovery in the global financial market, which led to increased demand for Namibia's mineral commodities, such as diamond. During the year, total permanent employment in the country's mining sector increased by about 10%. Nearly 24% of the people employed in the sector worked for Namdeb Diamond Corporation (Pty.) Ltd. (NAMDEB) and about 23% worked for Rössing Uranium Ltd. of Namibia (Bank of Namibia, 2011, p. 106; Chamber of Mines of Namibia, The, 2011, p. 88–89).

## Production

In 2010, diamond production increased by 42% to 1,693 carats compared with 1,192 carats in 2009, gold production increased by 30% to 2,683 kilograms (kg) compared with 2,057 kg (revised) in 2009, and acid-grade fluorspar production increased by 29% to 104,494 metric tons (t) compared with 80,857 t in 2009. Data on mineral production are in table 1.

## Structure of the Mineral Industry

The Ministry of Mines and Energy and its Diamond Affairs, Energy, and Mining Directorates regulate Namibia's mining and petroleum industries. The Ministry grants mineral exploration and mining licenses, compiles national exploration and mining databases, and develops exploration and mining policy and regulations. The Ministry's Geological Survey of Namibia undertakes geologic mapping and research. The Ministry of Trade and Industry is responsible for regulating manufacturing activity, which includes mineral beneficiation, the production of cement, and the processing of semiprecious stones. The Ministry of Trade and Industry also promotes resource-based

development. Table 2 is a list of major mineral industry facilities.

## Mineral Trade

In 2010, Namibia's exports to the United States were valued at about \$195 million compared with about \$329 million in 2009. Nuclear fuel materials and fuels accounted for about 70% (\$138 million) of these exports in terms of value, and diamond accounted for about 25% (\$50 million). Imports from the United States were valued at about \$110 million in 2010 compared with \$202 million in 2009; these included \$1.6 million in excavating machinery and \$795,000 in drilling and oilfield equipment (U.S. Census Bureau, 2011a, b).

## Commodity Review

### Metals

**Copper.**—On March 29, Weatherly International plc of the United Kingdom announced the results of an independent technical review conducted by Coffey Mining Pty Ltd. of Australia for the Matchless Mine and the Otjihase Mine. Based on the Coffey Mining reports, Weatherly announced its plans to resume production at the Matchless and the Otjihase Mines by the first quarter of 2011. As of June 2010, the total combined proven and probable reserves at the Matchless (western extension) and the Otjihase Mines were reported to be 3.9 million metric tons (Mt) at average grades of 1.7% copper, 5.8 grams per metric ton (g/t) silver, and 0.25 g/t gold. Indicated, inferred, and measured mineral resources at Matchless's western extension were reported to be 822,120 t at an average grade of 2.19% copper. Total mineral resources at Otjihase were reported to be 11 Mt at average grades of 1.90% copper, 5.51 g/t silver, and 0.24 g/t gold. In September, Weatherly signed an offtake agreement with Louis Dreyfus Commodities Metals Suisse SA of the Netherlands, which included the sale of its entire output to Louis Dreyfus for the next 7 years, and the advanced \$7 million in funds for the reopening of the Matchless and the Otjihase Mines. The mines were expected to produce an average of about 7,000 metric tons per year (t/yr) of copper contained in concentrates during the first 5 years of operation. The company expected to increase its annual capacity to about 9,000 t of copper contained in concentrates by 2013 (Weatherly International plc, 2010a, p. 4–5; 2010b).

Weatherly also held development projects in Tschudi and Tsumeb, which were located in northern Namibia. The company planned to establish a medium-scale open pit at Tschudi with a strike length of about 2 kilometers (km) and a depth of about 180 meters (m). In June, Weatherly selected Sedgam Ltd. of Australia to conduct a prefeasibility study at Tschudi: the study was expected to be completed by 2011. A bankable feasibility

study was expected to be completed by mid-2012. As of June 2010, total mineral resources were reported to be 43 Mt at average grades of 0.83% copper and 10.5 g/t silver. Based on previous metallurgical works, the company estimated production between 11,000 and 13,000 t/yr of copper during a mine life of 10 years. Weatherly expected to complete a feasibility study at the Tsumeb tailings project by 2012 (Weatherly International plc, 2010a, p. 6; 2011a, b).

International Base Metals Ltd. (IBML) of Australia through its subsidiary Craton Mining and Exploration (Pty) Ltd. held exclusive prospecting licenses for the Omitiomire copper deposit, which is located about 120 km northeast of Windhoek in central Namibia and covers an area of about 988 square kilometers (km<sup>2</sup>). The licenses were for the Omitiomire project, as well as for other copper occurrences and targets at the deposit. The company completed its preliminary feasibility study in June. The study conducted by South Africa-based Green Team International (Pty) Ltd. evaluated a conventional open pit mining scenario, which assumed a final pit containing 69 Mt of ore at an average grade of 0.55% copper with an estimated mine life of 10 years and an additional 2 years for stockpile processing. The study also evaluated the development of a processing plant with a capacity to receive about 6 million metric tons per year (Mt/yr) of ore. The study also included the construction of a 90-km water pipeline to pump about 2.2 million cubic meters per year of water from a national water carrier to the site. The construction of the pipeline included the development of an aquifer in the source area. IBL appointed South Africa-based TWP Projects (Pty) Ltd. to conduct a definitive feasibility study by 2011. The company also held exploration programs for the Kamanjab, the Kalahari copperbelt, and the Steinhausen projects. Other companies exploring for copper in the country included INV Metals Inc. of Canada and Australian companies Sabre Resources Ltd. and Takoradi Ltd. (International Base Metals Ltd., 2010, p. 7–12).

**Gold.**—Gold production from the Navachab gold mine was about 2,700 kg compared with about 2,000 kg in 2009. The mine, which was operated by AngloGold Namibia (Pty) Ltd., was an open pit operation located near the town of Karibib about 170 km northwest of the capital city of Windhoek. In 2010, the company commissioned a dense media separation (DMS) plant with a production capacity of 120,000 metric tons per month. The increase in production during the year was attributable to greater volumes mined from the bottom of the pit and the treatment of high-grade concentrate from the DMS plant. Gold production for 2011 had been expected to be between 2,600 kilograms (kg) and 2,700 kg. In 2010, the company submitted an application to the Government for the extension of the mining area and the mining license until 2030. AngloGold planned to conduct an exploration program in 2011 and would focus on the plunge extension of the existing ore body of the main pit (AngloGold Ashanti Ltd., 2011, p. 54, 99–100).

In June, Auryx Gold Corp. of Canada which was formerly known as Tova Ventures Inc., signed a share purchase agreement among 0824239 BC Ltd., TEAL Minerals (Barbados) Inc., and TEAL Namibia (B) Inc. for the purchase of a 100% interest in TEAL Namibia, which held a 92% interest in the Otjikoto gold

project and a 92% interest in the Otavi exploration area. The Otjikoto project is located about 300 km north of Windhoek. Indicated resources were estimated to be 25.1 Mt at an average grade of 1.44 g/t, and inferred resources were estimated to be 15.6 Mt at an average grade of 1.32 g/t. Auryx planned to conduct a 30,000-m drilling exploration program in 2011 (Tova Ventures Inc., 2010; Auryx Gold Corp., 2011; Chamber of Mines of Namibia, The, 2011, p. 74).

**Iron Ore.**—Avonlea Minerals Ltd. of Australia through its subsidiary Himba Iron Exploration (Pty) Ltd. held an exclusive prospecting license for the Ondjou prospect. In 2010, the company completed a 3,400-m reverse-circulation drilling program at Ondjou, which is located in northwestern Namibia. Inferred mineral resources were estimated to be 521 Mt at an average grade of 24% iron. The company planned to begin a 5,000-m diamond drilling program in 2011 (Avonlea Minerals Ltd., 2010, 2011).

### *Industrial Minerals*

**Cement.**—Schwenk Zement KG of Germany through its subsidiary Ohorongo Cement (Pty) Ltd. began cement production in December. The Ohorongo Cement plant, which is located in the Otjozondjupa region near Otavi in northern Namibia, had an annual production capacity of 700,000 t/yr of cement. More than 300,000 t/yr of cement was expected to be destined for domestic consumption and the remainder was to be exported to southern Angola, western Botswana, the Democratic Republic of the Congo, and Zambia. The plant, which was Namibia's only cement factory, processed local limestone, marl, and shale that were mined at the Ohorongo quarry, and obtained gypsum and iron ore from Elspe Minerals (Pty) Ltd. and Okorusu Fluorspar (Pty.) Ltd., respectively (Weidlich, 2010; Ohorongo Cement (Pty) Ltd., 2011).

**Diamond.**—Diamond was mined in Namibia by NAMDEB and by De Beers Marine Namibia (DMN). NAMDEB, which was a joint venture between De Beers Société Anonyme and the Namibian Government (50% each), mined diamond from three land-based mines located in the northwest and southwest of the country. DMN, which was a sister company of NAMDEB, mined diamond from a marine-based operation located off the southwest coast. Small-scale diamond mining also took place throughout the country.

In 2010, production from DMN's land-based and marine-based deposits accounted for about 89% of Namibia's total diamond production. About 67% of the 1.5 million carats produced by the company in 2010 was from marine-based deposits. NAMDEB's land-based deposits, which represented nearly 33% of the company's total annual production, were expected to be exhausted by 2014. The company, however, was in the process of exploring possible options to extend the life of these land-based operations to 2050. De Beers Société Anonyme was owned by Anglo American plc of the United Kingdom (45%); Central Holdings Group, which was owned by the Oppenheimer family (40%); and the Government of the Republic of Botswana (15%) (De Beers Société Anonyme, 2010, p. 23).

Afri-Can Marine Minerals Corp. of Canada announced that it had entered into an agreement to acquire 100% interest

in EPL 3403 from Thyme Investments (Pty) Ltd., which was owned by International Mining and Dredging Holding Ltd. (IMDH) of the Bahamas (75%) and Namibia-based BV Investments Four Hundred and Nine (Pty) Ltd. (25%). The 800-km<sup>2</sup> marine diamond concession is located about 120 km south of Luderitz and about 75 km from the mouth of the Orange River. EPL 3403 is adjacent to NDC's Atlantic One mining lease. In November, Afri-Can announced the completion of a qualifying report for EPL 3403 that was compliant with National Instrument 43-101. The report indentified two large geologic features that cover an area of about 160 km<sup>2</sup> and 16 km<sup>2</sup>, respectively. The southeastern geologic feature had been proven to host diamond concentrations similar to the other adjacent projects. The northwestern geologic feature was characterized by thin sediment and outcropping Eocene rocks similar to other diamond deposits adjacent to EPL 3403. Afri-Can expected to conduct a resource delineation program, subject to its acquisition of EPL 3403 (Afri-Can Marine Minerals Corp., 2010a; 2010c, p. 9–10, 19).

In October, South Africa-based Z Star Mineral Resource Consultants (Pty) Ltd. completed a mineral resource estimate for the Block J Woduna marine diamond concession (EPL 2499), which is located 25 km off the coast and covers an area of about 1,000 km<sup>2</sup>. The estimate totaled 154,000 carats in a 1.72-km<sup>2</sup> area that graded 0.09 carats per square meter. The concession was owned by a joint venture of Afri-Can (70%) and Woduna Mining Holdings (Pty) Ltd. (30%); Afri-Can was the operator and manager of the exploration and development program. Afri-Can planned to conduct a sampling program and trial mining works on Block J to convert the inferred resource into indicated resources and to probable reserves. The program would include 257 samples of 5 square meters each, a geophysical survey, trial mining of 100,000 square meters, and vibrocore sampling. The sampling program and trial mining works would be subject to the completion of the program design for EPL 3403 and an the agreement between Afri-Can and IMDH concerning the chartering of marine sampling vessels (Afri-Can Marine Minerals Corp., 2010b; 2010c, p. 4–6).

**Fluorspar.**—The Okorusu fluorspar mine was 100% owned by Solvay Fluor GmbH of Germany through its subsidiary Okorusu Fluorspar, which produced 97.5% pure acid-grade fluorspar. Fluorspar was exported to Solvay's processing plants in Germany and Italy for the manufacturing of hydrofluoric acid. During the year, Okorusu focused its exploration program at the E ore body, which is located within the mine's mining license area. The company completed a total of 5,400 m of diamond drilling and expected to continue infill diamond drilling in 2011. Okorusu planned the commissioning of a new DMS plant in 2011 and an underground mining operation at the A ore body. The company planned to construct a new drying plant that would improve its metallurgical fluorspar (metspar) business. Metspar was used as a flux in the steel industry. In August, Okorusu signed an agreement to supply and deliver iron ore, which is a byproduct of fluorspar processing, to the Ohorongo cement plant (Ohorongo Cement (Pty) Ltd., 2010; Chamber of Mines of Namibia, The, 2011, p. 47–48).

## **Mineral Fuels and Related Materials**

**Oil and Gas.**—Offshore oil and gas activities included exploration on Blocks 2813A, 2814B, and 2914A by the joint venture of HRT Participações em Petróleo S.A. of Brazil through its subsidiary HRT Oil and Gas Exploração e Produção de Petróleo Ltd. (40%), UNX Energy Corp. of Canada (40%), and Namibia-based Acarus Investments (Pty) Ltd. (20%). HRT also held 100% interest in two blocks in the Walvis subbasin. Other offshore activities included exploration in the Kudu gasfield by the joint venture of Russia-based OAO Gazprom and state-owned National Petroleum Corporation of Namibia (54%), London-based Tullow Oil plc (31%) and ITOCHU Corp. of Japan (15%); the gasfield is located about 170 km off the southwestern coast of Namibia. Other companies exploring for oil and gas in the country included London-based Chariot Oil and Gas Ltd., Canada-based Energulf Resources Inc., and Petróleo Brasileiro S.A. of Brazil (Namibian, The, 2010; HRT Participações em Petróleo S.A, 2011, p. 1).

**Uranium.**—In 2010, the Rössing Mine, which was operated by Rio Tinto plc of the United Kingdom through its subsidiary Rössing Uranium, produced 3,628 t of uranium oxide compared with 4,150 t produced in 2009. In 2010, the throughput at the processing plant was constrained by low ore grades. Uranium oxide was exported to power utilities globally. A total of 1,592 people were employed at the mine. Rio Tinto planned to continue its exploration and drilling activities in the Z19 and Z20 prospects in 2011, which were located close to the southern boundary of the Rössing mining license area. The company expected to complete the installation of two new secondary crushers by the second quarter of 2011. Rio Tinto was in the process of developing a heap-leach project to increase production and reduce operating costs. Rio Tinto's other projects in progress at the mine included a new tailings facility and an onsite acid plant (Chamber of Mines of Namibia, The, 2011, p. 55–56; Rio Tinto plc, 2011, p. 57; Rössing Uranium Ltd., 2011, p. 12, 15).

Paladin Energy Ltd. of Australia through its subsidiary Langer Heinrich Uranium (Pty) Ltd. held a 100% interest in the Langer Heinrich Mine. Production at the mine increased by 24% to 1,520 t of uranium oxide (U<sub>3</sub>O<sub>8</sub>) compared with 1,225 t produced in 2009. The company began phase 3 of its expansion project and expected to increase production capacity to about 2,400 t/yr by yearend 2011. An updated resource estimate for Langer Heinrich reported measured and indicated mineral resources to be 67,758 t of U<sub>3</sub>O<sub>8</sub> at a cutoff grade of 250 parts per million (ppm) and inferred mineral resources to be 10,910 t of U<sub>3</sub>O<sub>8</sub> at a cutoff grade of 250 ppm. Paladin planned to complete a phase 4 definitive feasibility study by 2011 and to increase production to about 4,500 t/yr by 2014 (Paladin Energy Ltd., 2010a, p. 3–4, 11, 15–17; b).

Forsys Metals Corp. of Canada through its subsidiary Valencia Uranium (Pty) Ltd. was developing the Valencia uranium project, which is located about 50 km north of the Langer Heinrich Mine. The company announced that the measured and indicated resources were estimated to be 35,000 t of U<sub>3</sub>O<sub>8</sub> at a cutoff grade of 60 ppm and that the inferred resources were estimated to be 4,300 t of U<sub>3</sub>O<sub>8</sub> at a cutoff grade of 60 ppm.

In the fourth quarter of 2010, Forsys began a review of the Valencia plant's costs, design, efficiencies, processes, and recoveries; the review was expected to be completed by the third quarter of 2011. The company expected initial production at the plant to be 8.7 Mt/yr of ore, which would increase to 11.8 Mt/yr of ore within 4 years. The company expected an average production level of about 1,600 t/yr of  $U_3O_8$  during its first 7 years of operation (Forsys Metals Corp., 2010a, p. 3, 5–7).

Forsys through its subsidiary Dunefield Mining Co. also held 70% interest in the Namibplaas uranium project, which is located 7 km from the Valencia project and covers a total area of about 1,742 hectares. The company began an exploration drilling program at the Namibplaas project in July with 19 diamond drill holes and 39 percussion drill holes for a total of 13,466 m. In November, Forsys announced initial results from the first 17 percussion and 9 diamond drill holes, which included 14 holes that encountered intersections greater than 200 ppm of  $U_3O_8$ . The most promising intersection was a 13.3-m drill hole that encountered 583 ppm of  $U_3O_8$ . The company expected additional drilling results by February 2011 (Forsys Metals Corp., 2010a, p. 9–12; 2010b).

France-based Areva Group was in the process of developing the Trekkopje Mine, which is located 70 km northeast of Swakopmund. In April, the company inaugurated its seawater desalination plant with the capacity to produce 20 million cubic meters per year of potable water. Areva's desalination plant was located about 30 km north of Swakopmund. Once in operation, the Trekkopje Mine would process 100,000 metric tons per day of ore to produce about 3,000 t/yr of yellowcake. Full production at Trekkopje was expected to begin in late 2013 (Areva Group, 2010a, p. 15; 2010b; van den Bosch, 2011).

Bannerman Resources Ltd. held an 80% interest in the Etango project, which is located about 41 km east of Swakopmund. The company held an exclusive prospecting license for Etango, which the company considered to be one of the world's largest undeveloped uranium deposits. A preliminary feasibility study was completed in 2009. An updated resource estimate for Etango was conducted by Coffey Mining. In October, Bannerman reported that the estimated measured and indicated mineral resources at a cutoff grade of 100 ppm  $U_3O_8$  were 12,900 t of  $U_3O_8$  at an average grade of 205 ppm  $U_3O_8$  and 54,600 t of  $U_3O_8$  at an average grade of 200 ppm  $U_3O_8$ , respectively. Inferred mineral resources were estimated to be 29,000 t at a grade of 176 ppm  $U_3O_8$ . Bannerman envisioned the development of a large open pit mining operation with a capacity to produce 2,300 to 3,200 t/yr of uranium oxide during a mine life of 20 years. The company planned to begin exploration drilling activities in the northern area of the Etango project by March 2011. A definitive feasibility study was expected to be completed by early 2012 (Bannerman Resources Ltd., 2011).

Extract Resource Ltd. of Australia through its subsidiary Swakop Uranium (Pty) Ltd. announced an updated resource estimate for the Husab Uranium project, which included the Ida Dome and the Rössing South uranium deposits. Indicated resources at the Rössing South zones 1 and 2 were estimated to be about 116,600 t of  $U_3O_8$  at a cutoff grade of 480 ppm and inferred resources at zones 1 through 4 were estimated to be about 50,000 t of  $U_3O_8$  at a cutoff grade of 400 ppm. The

company envisioned the development of a large open pit mining operation with a capacity to produce 6,800 t/yr of uranium oxide. A definitive feasibility study based on zones 1 and 2 was expected to be completed by the first quarter of 2011. The company planned to update the resource estimate in 2011 and to begin production by 2015. The Husab project is located in the Erongo region of west-central Namibia. Other companies exploring for uranium in the country included Australian companies Deep Yellow Ltd. and Marenica Energy Ltd. (Extract Resource Ltd., 2010, p. 10–12, 15; 2011, p. 1–3).

## Outlook

The Namibian economy is projected to expand by 4.1% during 2011, driven by the recovery in the construction sector, which is forecasted to grow by 5.0%. Diamond production is expected to be moderate in 2011 owing to the depletion of the onshore diamond deposits. The reopening of the Matchless and the Otjihase copper mines; the expansion plans at the Langer Heinrich Mine, the Okorusu Mine, and the Rössing Mine; and plans to develop the country's copper, diamond, and gold deposits are expected to strengthen the industry in the short run. Also in the future, new projects in the nonfuel mineral sector, such as the development of the iron ore, lead, manganese, nickel, and zinc deposits, are likely to add to Government revenue and to the gross domestic product (Bank of Namibia, 2011, p. 102–103, 107, 111).

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TABLE 1  
NAMIBIA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Metric tons unless otherwise specified)

Commodity <sup>2</sup>	2006	2007	2008	2009	2010 <sup>e</sup>
METALS					
Arsenic, white, 99% arsenic trioxide	-- <sup>e</sup>	813	763	800 <sup>e</sup>	800
Copper:					
Mine output, concentrate (26%-30% Cu):					
Gross weight	25,000 <sup>e</sup>	32,450	37,956	--	--
Cu content	6,262	6,580	7,471	--	--
Metal, blister:					
From domestic concentrates <sup>e</sup>	6,200	8,000	--	--	--
From imported toll concentrates <sup>e</sup>	15,700	12,600	16,271 <sup>3</sup>	21,543 <sup>3</sup>	25,019 <sup>3</sup>
Total	21,918	20,600 <sup>e</sup>	16,271	21,543 <sup>3</sup>	25,019 <sup>3</sup>
Gold, Au content of mine output kilograms	2,790	2,496	2,126	2,057 <sup>r</sup>	2,683 <sup>3</sup>
Lead, mine output, concentrate:					
Gross weight	21,402	21,875	27,656	20,258 <sup>r</sup>	19,202 <sup>3</sup>
Pb content of Pb and Pb-Zn concentrates	11,830	10,543	14,062	10,129 <sup>r</sup>	10,140 <sup>3</sup>
Manganese, mine output, concentrate (35% Mn):					
Gross weight	18,918	47,620	28,387	51,471 <sup>r</sup>	32,728 <sup>3</sup>
Mn content <sup>e</sup>	6,600	16,700	9,900	18,000 <sup>r</sup>	11,500
Silver, mine output, Ag content of concentrates kilograms	31,307	30,000 <sup>e</sup>	30,000 <sup>e</sup>	30,000 <sup>e</sup>	30,000
Zinc:					
Gross weight, mine output, concentrate (49%-56% Zn)	105,134	94,323	92,190	93,953 <sup>r</sup>	101,040 <sup>3</sup>
Zn content of Zn and Pb-Zn concentrates <sup>4</sup>	55,455	46,335	38,319	48,856 <sup>r</sup>	53,624 <sup>3</sup>
Metal, refined, primary	129,897	150,080	145,396	150,400	151,688 <sup>3</sup>
INDUSTRIAL MINERALS					
Diamond thousand carats	2,356	2,266	2,435	1,192	1,693 <sup>3</sup>
Fluorspar, acid grade (97% CaF <sub>2</sub> ) <sup>5</sup>	132,249	118,766	118,263	80,857	104,494 <sup>3</sup>
Salt	603,501	810,942	732,000	807,348 <sup>r</sup>	770,636 <sup>3</sup>
Semiprecious stones: <sup>e</sup>					
Agate	150	141 <sup>3</sup>	141 <sup>3</sup>	154 <sup>r,3</sup>	137 <sup>3</sup>
Amethyst kilograms	40,000	7,020 <sup>3</sup>	7,000 <sup>e</sup>	11,191 <sup>r,3</sup>	-- <sup>3</sup>
Blue chalcedony do.	50	5 <sup>3</sup>	5 <sup>3</sup>	34 <sup>3</sup>	1 <sup>3</sup>
Garnet do.	100	88 <sup>3</sup>	-- <sup>3</sup>	--	--
Picture stone	200	200	200	200	200
Pietersite	--	17 <sup>3</sup>	23 <sup>3</sup>	19 <sup>3</sup>	3 <sup>3</sup>
Rose quartz	--	22,878 <sup>3</sup>	19,975 <sup>3</sup>	16,729 <sup>r,3</sup>	17,000
Sodalite	--	104 <sup>3</sup>	1,450 <sup>3</sup>	1,500	1,500
Tourmaline kilograms	100	100	100	1 <sup>3</sup>	2 <sup>3</sup>
Stone:					
Dolomite	14,000 <sup>e</sup>	27,150	27,000 <sup>e</sup>	27,000 <sup>e</sup>	33,822 <sup>3</sup>
Granite	21,000 <sup>e</sup>	36,390	22,664	34,869 <sup>r</sup>	10,742 <sup>3</sup>
Marble	5,100 <sup>e</sup>	4,538	9,438	11,008 <sup>r</sup>	8,584 <sup>3</sup>
Sodalite	100 <sup>e</sup>	--	--	--	--
Sulfur, pyrite concentrate:					
Gross weight (49% - 51% S) <sup>e</sup>	--	8,500	8,500	8,500	8,500
S content	-- <sup>e</sup>	4,300 <sup>e</sup>	4,000 <sup>e</sup>	4,000 <sup>e</sup>	4,000
Wollastonite	55	55 <sup>e</sup>	50 <sup>e</sup>	50 <sup>e</sup>	50
MINERAL FUELS AND RELATED MATERIALS					
Uranium, U <sub>3</sub> O <sub>8</sub> content	3,617	3,680	4,838	5,600 <sup>r,3</sup>	5,473 <sup>3</sup>

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. <sup>r</sup>Revised. do. Ditto. NA Not available. -- Zero.

<sup>1</sup>Table includes data available through August 17, 2011.

<sup>2</sup>In addition to the commodities listed, Namibia produced blister copper, which contained gold and silver coproducts, and lead dusts, but available information is inadequate to estimate output.

<sup>3</sup>Reported figure.

<sup>4</sup>Ore from the Skorpion Mine is leached onsite and the zinc is recovered by solvent extraction-electrowinning; the zinc ore mined at Skorpion is therefore not included in the zinc concentrate data.

<sup>5</sup>Fluorspar production shown in wet metric tons; approximately 9% moisture content.

TABLE 2  
NAMIBIA: 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
Cement	Ohorongo Cement (Pty) Ltd. (Schwenk Zement KG, 60%; Industrial Development Corp., 20%; Development Bank of Namibia, 10%)		Otjondjupa region, near Otavi	700,000
<b>Copper:</b>				
Copper concentrates	Weatherly Mining Namibia Ltd. (Weatherly International plc, 100%)		Central operations, includes the Otjihase Mine and concentrator, about 30 kilometers north of Windhoek; and the Matchless Mine, 80 kilometers southwest of the Otjihase Mine	7,000,000 <sup>1</sup>
Do.	do.		Northern operations, includes the Tschudi and the Tsumeb West Mines, and the Tsumeb concentrator	11,000 <sup>1</sup>
Do.	do.		Kombat operations, includes Kombat Mine and concentrator, 440 kilometers north of Windhoek	400,000 <sup>1</sup>
Metal, blister copper	Namibia Custom Smelters (Pty.) Ltd. (Dundee Precious Metals Inc., 100%)		Smelter at Tsumeb	30,000
Diamond	carats	De Beers Marine Namibia [De Beers Société Anonyme, 70%, and Namdeb Diamond Corporation (Pty.) Ltd., 30% ]	Atlanta 1 license area, offshore Sperrgebiet	1,050,000
Do.	do.	Diaz Exploration (Pty.) Ltd.	Offshore operation	15,000
Do.	do.	Joint venture of Diamond Fields (Pty.) Ltd. (Diamond Fields International Ltd., 100%) and Bonaparte Diamond Mines NL	Mining License 111, offshore Luderitz	NA
Do.	do.	Namdeb Diamond Corporation (Pty.) Ltd. (Government, 50%, and De Beers Société Anonyme, 50%)	Mining Area 1, from Orange River to 145 kilometers north of Oranjemund; includes Pocket Beaches	1,000,000
Do.	do.	do.	Northern Areas and Elizabeth Bay Mines, 24 kilometers south of Luderitz	180,000
Do.	do.	do.	Orange River Mines, from mouth of Orange River east to Sendelingsdrif; includes the Auchas and the Daberas Mines	120,000
Do.	do.	do.	Beach and marine contractors	68,000
Do.	do.	Sakawe Mining Corp. (Samicor) (LL Mining Corp., 76%, and Government, 8%)	Offshore mining licenses, near Luderitz Bay	260,000
Fluorspar, acid grade	Okorusu Fluorspar (Pty.) Ltd. (Solvay Fluor GmbH, 100%)		Mine and plant at Okorusu	120,000
<b>Gold:</b>				
Ore	AngloGold Ashanti Namibia (Pty.) Ltd.		Navachab Mine, 170 kilometers northwest of Windhoek	1,440,000
Metal	kilograms	Namibia Custom Smelters (Pty.) Ltd. (Dundee Precious Metals Inc., 100%)	Coproduct contained in blister copper produced at the copper smelter at Tsumeb	400
Lead, Pb content of concentrate	Rosh Pinah Zinc Corporation (Pty.) Ltd. [Exxaro Resources Ltd., 50.04%; Jaguar Investments Holdings, 38.98%; PE Minerals (Namibia) (Pty.) Ltd., 8%]		Rosh Pinah Mine, near Rosh Pinah	20,000
Pyrite, concentrate	Weatherly Mining Namibia Ltd. (Weatherly International plc, 100%)		Otjihase Mine and concentrator, near Tsumeb	32,000
<b>Salt:</b>				
Do.	Cape Cross Salt (Pty.) Ltd.		North of Henties Bay	40,000
Do.	Salt & Chemicals (Pty.) Ltd. [Walvis Bay Salt Holdings (Pty.) Ltd., 100%]		Salt pan at Walvis Bay	670,000
Do.	Salt Company (Pty.) Ltd.		Swakopmund	120,000
Do.	Walvis Bay Salt Refiners (Pty.) Ltd. [Walvis Bay Salt Holdings (Pty.) Ltd., 100%]		Salt refinery at Walvis Bay	650,000

See footnotes at end of table.



TABLE 2—Continued  
 NAMIBIA: 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
<b>Silver:</b>			
Concentrate, Ag content	Rosh Pinah Zinc Corporation (Pty.) Ltd. [Exxaro Resources Ltd., 50.04%; Jaguar Investments Holdings, 38.98%; PE Minerals (Namibia) (Pty.) Ltd., 8%]	Rosh Pinah Mine, near Rosh Pinah	25
Metal	Namibia Custom Smelters (Pty.) Ltd. (Dundee Precious Metals Inc., 100%)	Coproduct contained in blister copper produced at the copper smelter at Tsumeb	25
Uranium, uranium oxide	Langer Heinrich Uranium (Pty.) Ltd. (Paladin Energy Ltd., 100%)	Langer Heinrich Mine. 80 kilometers east of Walvis Bay	1,500
Do.	Rössing Uranium Ltd. (Rio Tinto Group, 69%; Government of Iran, 15%; Industrial Development Corp. of South Africa Ltd., 10%; Government of Namibia, 3%; other minority shareholders, 3%)	Rössing Mine, 65 kilometers northeast of Swakopmund	4,800
Wollastonite	Namibia Mineral Development Co. (Pty.) Ltd.	Usakos Mine	800
<b>Zinc:</b>			
<b>Mine:</b>			
Concentrate, Zn content	Rosh Pinah Zinc Corporation (Pty.) Ltd. [Exxaro Resources Ltd., 50.04%; Jaguar Investments Holdings, 38.98%; PE Minerals (Namibia) (Pty.) Ltd., 8%]	Rosh Pinah Mine, near Rosh Pinah	110,000
Ore	Skorpion Mining Co. (Pty.) Ltd. (Vedanta Resources plc, 100%)	Skorpion Mine, 25 kilometers north of Rosh Pinah	1,500,000
Metal	Namzinc (Pty.) Ltd. (Vedanta Resources plc, 100%)	Skorpion solvent extraction facilities and electrowinning refinery, 25 kilometers north of Rosh Pinah	150,000

Do., do. Ditto. NA Not available.

<sup>1</sup>Closed in 2009.