THE MINERAL INDUSTRY OF

TAJIKISTAN

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Tajikistan continued to be a substantial regional producer of primary aluminum, although its entire alumina supply must be imported. The country also mined a number of metals that included antimony, bismuth, copper, gold, lead, mercury, molybdenum, silver, tungsten, and zinc; a variety of industrial minerals; and mineral fuels that included coal, natural gas, petroleum, and uranium. More than 400 mineral deposits that contain 70 types of minerals have been explored. Its reserves of natural gas were reportedly 200 billion cubic feet, and its oil reserves, 430 million metric tons (U.S. Energy Information Administration, September 1999, Tajikistan—Natural gas, Country Analysis Briefs, accessed July 8, 2000, at URL http://www.eia.doe/emeu/cabs/tajik.html; Foreign Broadcast Information Service, April 5, 1998, Tajik geologists are celebrating their professional holiday, Radio Broadcast [Dushanbe Radio Tajikistan] Transcription, accessed June 4, 2000, at URL http://fbis.fedworld.gov).

The Tajik aluminum plant (Tadaz), which is in Tursunzade in the southwestern part of the country, had an apparent capacity to produce about 520,000 metric tons per year (t/yr) of primary aluminum; it was one the largest primary aluminum plants in the former Soviet Union (FSU). In 1999, production of primary aluminum increased by 17.1% to 229,100 metric tons (t) (Interfax Mining and Metals Report, 2000c). Practically the entire output of aluminum at Tadaz was exported. In 1999, Tajikistan sold 74% of all the aluminum it exported (worth $228.2 million) to countries not in the Commonwealth of Independent States (Foreign Broadcast Information Service, January 16, 2000, Tajikistan's Foreign Trade Balance Grew 3% in 1999, news service report [ITAR-TASS] translation, accessed June 7, 2000, at URL http://fbis.fedworld.gov). A small portion of the aluminum production was used by the Tadaz plant to make plates for motor vehicles, lightweight building structures, and aluminum dishware (Grigoryev, 1997).

In 1999, Tajikistan signed an intergovernmental agreement on cooperation in the aluminum industry with Ukraine. The document provided for the supply of alumina from the Mykolayiv alumina refinery in Ukraine to Tadaz in quantities that would guarantee its stable operation. Tadaz was to pay off the $61 million debt owed by it to Mykolayiv (Foreign Broadcast Information Service, July 23, 1999, Ukraine, Tajikistan sign aluminum cooperation deal, radio broadcast [Kiev Ukrayuinske Radio] transcription, accessed June 8, 2000, at URL http://fbis.fedworld.gov).

A major consumer of the country's electric power production, Tadaz consumed about 40% of total production. After the Russian Federation, Tajikistan has the second largest hydroelectric power resources among the countries of the FSU. Hydroelectric power accounted for about 75% of the total energy produced by the country and was exported to neighboring countries (U.S. Department of Commerce, 1998).

Tajikistan reportedly possesses the largest antimony deposits in the FSU. On the basis of the Soviet reserve classification system, proven A+B+C1 reserves reportedly are about 290,000 t of metal; C2 reserves, 233,500 t; and undiscovered resources, estimated to be more than 500,000 t (Interfax Mining and Metals Report, 2000a). Antimony and mercury concentrates were produced at the Anzob mining and beneficiation complex that mined the Dzhizhikrutskoye antimony and mercury deposit. The antimony concentrates were exported for further processing to the Kadamzhay antimony plant in Kyrgyzstan, which was the FSU's major producer of antimony metal and compounds. In 1999, Anzob reportedly produced 200,000 t of mercury-antimony ore, but most of the output was stockpiled because the smelter in Kyrgyzstan where it was processed had been idle during the year. Anzob had the capacity to mine and process 350,000 t/yr of mercury-antimony ore and expected to achieve full-capacity output by 2001. As the mines at Anzob were deepened, the content of antimony and byproduct metals, which included gold, selenium, silver, and tellurium, increased (Interfax Mining and Metals Report, 2000b). Tajikistan planned to produce antimony domestically at the Isfara hydrometallurgical plant, which was expanded to produce 500 t/yr of antimony metal, and to build a mercury plant (Interfax Mining and Metals Report, 1997, 2000a).

The Takob mining and beneficiation complex, which is near the city of Takob in northern Tajikistan, had the capacity to produce 60,000 t/yr of fluorspar concentrate. The concentrate was mainly exported to Russia. The complex mined the Krasnye Kholmy and the Takob deposits. The Takob complex was trying to convert to other types of production because its concentrates were unable to compete on world markets (Interfax Mining and Metals Report, 1999).

Because Tajikistan was dependent on imported fuel, it was trying to attract investment to develop its coal resources. The country required about 2 million metric tons per year (Mt/yr) of coal but produced about 20,000 t/yr. Tajikistan had six known coalfields. Proven reserves at the Fan-Yagnob deposit were reportedly about 1 billion metric tons, of which about 80% are high-grade coking coals. The Fan-Yagob Mine at the deposit reportedly had the capacity to produce 50,000 t/yr of coal but was only producing about one-tenth of that amount. Tajik specialists claimed that the Fan-Yagob Mine could produce up to 100,000 t/yr of coal if investments were made in new equipment (Interfax Mining and Metals Report, 1999).

The Shurab brown coal deposit near Isfara was the country's main source of coal during the Soviet period. Coal from that deposit was shipped to neighboring Kyrgyzstan and Uzbekistan. In the mid-1980's, the deposit was producing up to 650,000 t/yr

of coal. By 1990, production had already fallen to about 350,000 t/yr. By the mid-1990's, production had almost ceased, and coal was only being mined to supply nearby towns and villages (Interfax Mining and Metals Report, 1999).

Gold production was an important part of Tajikistan's economy. The country had created a number of joint ventures to develop its gold resources. Tajikistan also has large silver resources, but there had been no large-scale development of these resources. In 1999, Tajikistan mined 2.7 t of gold compared with 3 t in 1998 and 2.55 t in 1997. The Zeravshan gold company in which Nelson Gold Ltd. of the United Kingdom owned a 44% stake and the International Finance Corp., a 5% stake produced 1.6 t of gold from their operation in the Zeravshan valley; this was a 22% increase in production compared with that of 1998. The other major operating gold mining company was the Aprelevka joint venture with Gulf International Minerals, which was a Canadian firm. The Darvaz joint venture, in which Gold and Minerals Excavation of the United Kingdom owned a 49% stake, suspended operations in 1997 after suffering damage in the civil war; it still had not resumed work in 1999 (Interfax Mining and Metals Report, 2000b).

For many years, the city of Chkalovsk near the administrative center of the Khujand (formerly Leninabad) region, did not appear on maps, and information about the city was highly classified, as was the case with many other cities where work was conducted to develop the nuclear potential of the Soviet Union. The uranium for the first Soviet nuclear bomb, which was tested near Semipalatinsk in Kazakhstan in August 1949, was produced in Chkalovsk at a mining and chemical complex built in 1945 and now called the Vostokredmet production association. During the Cold War, this association processed up to 1 Mt/yr of uranium ore and supplied the Soviet defense industry with uranium concentrate. By 1999, the complex was mining and processing very little uranium ore and had switched to the extraction and production of gold, silver, vanadium, and other metals. The association's management stated, however, that they had offers to revive uranium processing on the basis of the nuclear industries of Kazakhstan, Russia, and Tajikistan. Kazakhstan would supply uranium ore, Russia would invest money and supply some chemical materials and tools, and Tajikistan would process the raw materials. According to economic estimates made by Tajikistan, it would be a profitable venture. According to the association's director general, the project cannot proceed until the matter is agreed upon by the Kazakhstan Government (Foreign Broadcast Information Service, February 1, 1999, Tajik combine seeks cooperation with Russia, Kazakhstan, Televison Broadcast [Moscow Russian Television Network] Transcription, accessed June 7, 2000, at URL http://fbis.fedworld.gov).

Tajikistan is well-endowed with a number of mineral resources that include antimony, gold, silver, and uranium. In mid-1992, a civil war began with some of the most intense fighting taking place in 1992 and 1993. Peace negotiations between the factions, which began in 1994, resulted in a peace agreement finalized on June 27, 1997, in Moscow. Mineral development, along with other economic development, however, has been seriously hampered by the instability caused by the civil war. Despite the problems of recent civil warfare and the concomitant issues of economic and political stability, Tajikistan has succeeded in attracting investment in its gold mining industry. Also, the country retained a large aluminum industry, which produced for the world market.

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TABLE 1
TAJIKISTAN: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity		1995	1996	1997	1998	1999
Aluminum, primary		232,000	198,300	206,400	196,300	229,100
Antimony, metal content of concentrate e/		1,000	1,000	1,200	1,500 r/	1,800
Cement		100,000	50,000	36,400	17,700	30,000
Coal		30,000	20,000	17,000	16,000	20,000
Gold	kilograms	1,500 e/	1,450	2,550	3,000	2,700
Gypsum		30,000 e/	30,000 e/	26,000	31,700	35,000
Lead, metal content of concentrate e/		1,000	800	800	800 2/	800
Mercury, metal content of concentrate e/		65	65	65	70 r/	75
Natural gas	million cubic meters	32,300	35,200	41,600	32,400	40,000
Petroleum, crude		30,000	30,000	26,000	19,400	20,000
Silver, metal content of concentrate		NA	NA	NA	5	5

e/ Estimated. r/ Revised. NA Not available.

1/ Table includes data and estimated based on information available through July 3, 2000. Tajikistan produces a number of other mineral commodities not listed in the table for which information was inadequate to derive estimates.

2/ Reported figure.

TABLE 2
TAJIKISTAN: STRUCTURE OF THE MINERAL INDUSTRY IN 1999

(Metric tons unless otherwise specified)

Commodity	Major operating companies	Location of main facilities	Annual capacity e/
Aluminum	Tajik aluminum plant	Tursunzade	520,000.
Antimony	Anzob mining and beneficiation complex	Dzhizhikrutskoye deposit	2,000.
Do.	Isfara hydrometallurgical plant	Isfara	500.
Bismuth	Leninabad mining and beneficiation complex	Yuzhno-Yangikanskiy deposit	25.
Do.	Isfara hydrometallurgical plant	Isfara	500.
Coal	do.	do.	300,000 total.
Do.	Shurabsk brown coal	Shurab region	NA.
Do.	Fan-Yagnob hard coal deposits	Pyandzh region	50,000.
Copper	Leninabad mining and beneficiation complex	Yuzhno-Yangikanskiy deposit	NA.
Fluorspar	Takob mining and benficiation complex	Takob and Krasnye Kholmy deposits	60,000 (concentrate).
Gold	Tajikzoloto mining-beneficiation complex, Pamir Artel	Darvazy, Rankul placer deposits, placers in central and southern part of country	5
Do.	Zeravshan Gold Company (ZGC)	Jilau and Taror deposits	2.5.
Do.	Darvaz joint venture (JV)	Yakh-Su field	2.
Do.	Aprelevka joint venture (JV)	Aprelevka deposit	0.2.
Do.	Vostokredmet refinery	Chkalovsk	NA.
Lead	Leninabad mining and metallurgical complex	Yuzhno-Yangikanskiy deposit	2,500.
Mercury	Anzob mining and beneficiation complex	Dzhizhikrutskoye deposit	150.
Molybdenum	Leninabad mining and beneficiation complex	Yuzhno-Yangikanskiy deposit	NA.
Petroleum and natural gas			200,000 (petroleum) total. 200,000,000 cubic meters (natural gas) total.
Do.	16 oil-gas deposits under exploration, including: Ravatskoye, Ayritanskoye, Madaniyatskoye	Fergana depression	NA.
Do.	Shaambary Beshtentyakskoye, Uzunkhorskoye, Kichik-Belskoye	Southern Tajik depression	NA.
Silver	Adrasman mining and beneficiation complex	Bolshoy Kanimansur deposit	NA.
Vanadium pentoxide	Vostokredmet plant	Chkalovsk	350,000.
Uranium	Adrasman, Maylisu, Taboshar, Usugai deposits	Northern Tajikistan	NA.
Do.	Vostokredmet plant	Chkalovsk	NA.
Zinc	Leninabad mining and beneficiation complex	Yuzhno-Yangikanskiy deposit	NA.

e/ Estimated. NA Not available.