

THE MINERAL INDUSTRY OF

KYRGYZSTAN

By Richard M. Levine

The mineral industry of Kyrgyzstan was involved in both mining and processing mineral products, mining primarily antimony, coal, gold, mercury, molybdenum, rare earths, tin, tungsten, and uranium deposits. Its metallurgical industry led the former Soviet Union (FSU) in the production of two nonferrous metals, mercury and antimony. Several major gold deposits are now under development. Although Kyrgyzstan produced coal and some gas and oil, it was still significantly dependent on imported energy.

In February 1993, the Kyrgyz Government issued a decree uniting all mining enterprises under the state concern Kyrgyzaltyn. Although some of its companies have since been either scheduled for privatization or are privatized, it is still the country's largest mining enterprise. Kyrgyzaltyn engages in the production of antimony, antimony oxide, gold, metallic mercury, molybdenum, rare earths, semiconductor materials, tin, tungsten, and uranium oxide.

According to a presidential decree, at the beginning of 1997, Kyrgyzstan will reorganize its oil and gas industry by merging the three existing companies into a national gas- and oil-products State-owned, joint-stock company Kyrgyzazmunayzat (Kyrgyz Gas and Oil Products). The new company will include the following companies: Kyrgyzgas (Kyrgyz Gas), Chugazmunayzat (Chuy Gas and Oil Products), and Kyrgyzazmunayzat (Kyrgyz Oil Products) (Slovo Kyrgyzstana, 1997).

In 1996, Kyrgyzstan reportedly experienced its first growth in gross domestic product (GDP) and industrial output since the breakup of the Soviet Union. The GDP increased by 6%, and industrial output by 10.8% compared with that of 1995 (Interfax Statistical Report, 1997).

The output of most mining and metallurgical plants in 1996 increased compared with that of 1995. The Khaydarkan mercury plant, the FSU's largest, increased output in value by 90.9% in constant prices. In value of output, the Kyrgyz Chemical and Metallurgical Plant, the Central Asian region's biggest producer of rare earths and rare metals located in Orlovka in Chuy oblast in northeastern Kyrgyzstan, recorded a growth of 94.4% (Interfax Mining and Metals Report, 1996). Makmalzoloto, a gold producer, boosted output by about 12%. At the Kadamzhay antimony plant, the FSU's largest antimony producer, however, output dropped by 0.9%. Also, the Solton-Sary gold mine in the Naryn region reported a drop in output of 37%, and the Kara Balta Mining Complex, a uranium producer involved in gold projects, reported that output was down by 8.5% (Interfax Mining News, 1997b).

The large increase in value of output at the Kyrgyz Chemicals

and Metallurgical Plant and at the Khaydarkan plant was mainly because these plants were at a standstill for many periods in 1995. But, in 1996, they were included in a World Bank program to reorganize and revitalize 29 industrial plants in Kyrgyzstan. The Kyrgyzstan Government had written off their debts to the state budget and to their electric power suppliers and exempted them from all associated fines (Interfax Mining News, 1997b).

Kyrgyzstan, Uzbekistan, and Kazakhstan signed an agreement in April to take measures to curb environmental pollution caused by toxic and radioactive wastes from tailings and dumps. These countries, which supplied the Soviet Union with large amounts of uranium, have accumulated large amounts of wastes from the uranium mines. International environmental organizations have expressed great concern about the conditions of the dumps and burial sites. Radiation levels at a number of these sites are hundreds of times higher than international permissible norms. Damage to burial sites is resulting in the release of considerable material with a high radium content. The damaged dumps and burial sites pose a serious threat to the entire basin of the Syr Darya River, one of Central Asia's main rivers. This basin is also under an additional threat from these damaged storage areas as it is an area of high seismic activity. The Kyrgyz Government, as part of the agreement will form a group of experts to study problems with storage areas along the Mayli Say River. Specialists from the three countries will assess burial sites in other regions of Central Asia, such as the dumps with radioactive wastes from the Leninabad mining and chemicals complex in Tajikistan (Interfax Mining and Metals Report, 1996c).

Kyrgyzstan has a number of large and small placer and hard rock gold deposits, but until the breakup of the Soviet Union, only one deposit, the Makmal, was worked. The highest reported totals for gold production during the Soviet period were about 5,000 kilograms per year (kg/yr). In 1992, gold production fell to just more than 1,000 kg/yr, but it is estimated to have returned to 5,000 kg/yr in 1996. If development of gold deposits goes according to plans, then Kyrgyzstan will be producing more than 25 metric tons per year (t/yr) of gold within 5 to 6 years.

The Makmal deposit produced more than 2 metric tons (t) of gold in 1994 and a reported 4.5 t in 1995. It is administered by Kyrgyz Makmalzoloto, a subsidiary of Kyrgyzaltyn.

To develop its large gold mining deposits, Kyrgyzstan is forming joint ventures with foreign investors. Its largest joint venture to date is with the Cameco Corp. of Canada, which is developing the Kumtor gold deposit, which is in the Tien Shan

mountains at an altitude of 4,000 meters. Kumtor's gold resources are estimated to be more than 250 t (Canadian Corporate News, 1997). The average gold content of the minable reserves is reportedly almost 4 grams per ton (g/t).

Mining by underground methods will be assessed as a potential future means of development. Cameco holds a 66% voting interest in the joint venture. The joint venture is known as the Kumtor Gold Company.

In late 1996, a mill was commissioned at the Kumtor project. The mill initially will process low-grade ore on a trial basis. The Kumtor Gold Company hopes to produce its first commercial gold in the first quarter of 1997.

Plans call for the mill to operate at 70% capacity by the middle of 1997 and to have produced at least 12 t of gold by the end of 1997. In 1998, the venture plans to produce from 18 to 19 t of gold. Cameco will be able to export its share of production.

According to an agreement with the Kyrgyz government, gold from Kumtor will be refined at the Kara Balta plant, which reportedly has the capacity to refine 20 t/yr of gold (Summary of World Broadcasts, 1997).

Cameco also has won a tender to develop the Akzhol gold deposit in Jalal-Abad oblast and the Bulakashik gold deposit in Chuy oblast.

Other significant gold deposits are the Jerui deposit with an estimated 70 t of gold, about 50 t of which reportedly had been confirmed; the Makmal deposit with an estimated 50 t of reserves averaging from 10 to 12 g/t; and the Taldy Bulak deposit with an estimated 60 t of reserves averaging from 7 to 8 g/t. Also, the Government hopes to develop a number of smaller gold deposits.

At the beginning of 1996, the Kyrgyzstan state registry listed 28 primary gold deposits and 5 deposits of gold in complex ores. Of 21 deposits slated for development at the beginning of 1996, 3 have more than 50 t of reserves, 10 deposits have between 5 and 35 t, and 8 deposits have less than 5 t (Dzhakypov, 1996).

In October, Kyrgyzaltyn announced that it was canceling its joint venture with Morrison Knudson Co. of the United States to develop the Jerui gold field. Projected initial output from the project of was to have been between 3 and 5 t/yr of gold (Interfax Mining News, 1997a).

In other developments, Apex, a U.S.-Israeli joint venture, won the right to develop the Kumushtakskoye silver deposit in the northern part of the Talas region; the deposit is estimated to contain 1,315 t of silver. In 1996, Kyrgyzaltyn and Santa Fe Pacific Gold Corp. of the United States formed a joint venture, Solton Sary, to explore and develop gold lodes in Kyrgyzstan's Naryn region for perspective mining (Razgulyaev, 1996). Subsequently, Santa Fe was merged with Newmont Mining Corp. of the United States, which inherited Santa Fe's 50% stake in Solton Sary (Interfax Mining and Metals Report, 1997a).

The Khaydarkan mining and metallurgical complex was the major producer of metallic mercury in the FSU. It received about 30% of its raw materials from its own mines with the remainder coming from Russia and Tajikistan. Antimony and

fluorspar were also mined. Antimony concentrate produced at Khaydarkan was sent to the Kadamzhay antimony plant in Osh, which produced metallic antimony.

Khaydarkan reportedly produced 378.8 t of mercury in 1994 and 380 t in 1995 and planned to produce 596 t in 1996. By October, Khaydarkan had reported producing 439 t. The increase in output was based, in part, on selective mining of high-grade ores at Khaydarkan (Interfax Mining and Metals Report, 1996d).

Kyrgyzstan was seeking to attract foreign investment to Khaydarkan. The Kyrgyzstan government owns a controlling interest in Khaydarkan but was reportedly interested in either selling its interest to foreign investors or seeking foreign managers to operate the plant (Interfax Mining and Metals Report, 1996d).

Khaydarkan was considering plans to develop its own metallurgical facilities to process its antimony concentrate. In 1996, plans called for Khaydarkan to produce 1,000 t of antimony concentrate grading 25% to 30% antimony.

The Kadamzhay antimony plant had been receiving the majority of its supplies of raw antimony from the Yakut/Sakha Republic in Russia. Kadamzhay, which produces 14 antimony products, including high-purity antimony metal, reportedly has the capacity to produce more than 18,000 t/yr of antimony, including from 8,000 to 8,500 t/yr of metallic antimony and 10,000 t/yr of antimony compounds. Kadamzhay also has installed its own furnace to produce mercury from the antimony-mercury concentrate it receives from the Anzob complex in Tajikistan; the mercury had been sent to Khaydarkan for processing. Mercury production at Kadamzhay will be dependent on the level of shipments from Tajikistan. Kadamzhay was in the process of considering developing gold production from gold-bearing antimony deposits near the complex. The Kyrgyz Government was seeking means to privatize Kadamzhay, including transferring a percentage of shares to its raw materials suppliers in Yakut/Sakha and Tajikistan (Interfax Mining and Metals Report, 1996a).

Output from Kadamzhay was 6,000 t of metallic antimony, which was a decrease of 3.8% compared with that of 1995. Raw materials for Kadamzhay were in short supply as shipments from Tajikistan were reduced. Plans for 1997 call for producing 7,600 t of metallic antimony (Interfax Mining and Metals Report, 1997a). Kadamzhay hopes to achieve this by increasing the use of its own ore, which accounted for about 20% of all antimony raw material in 1996; expansion of mining was underway at two locations at Kadamzhay. All the output is exported with 80% going to international customers; particularly in Belgium, Germany, France, and Netherlands, and the remaining 20% going to the FSU (Interfax Mining and Metals Report, 1996c).

The Kyrgyz Chemical and Metallurgical Plant reported increased output for the first nine months of 1996. Profits at the plant rose by 70% compared with that for the same period in 1995. The plant reportedly produced 7.2 t of single-crystal silicon used to make semiconductors. This was a 192% increase compared with that of the same period in 1995. The plant's final output target for single-crystal silicon for 1996 was

15 t. Owing to an increase in foreign demand, the plant intends to increase single-crystal silicon output in 1997 to more than 50 t on the basis of contracts signed with the Czech firm Tesla and the Japanese firm Kinsho Mataichi Corp. The plant is currently exporting 97% of its output to the developed market economy countries. The production profile of the plant includes yttrium, terbium, dysprosium, thulium, ytterbium, holmium, erbium, neodymium, europium, gadolinium, thulium, ytterbium, lutecium, and their compounds. A restructuring program backed by the World Bank and the Kyrgyz Government is expected to restore output to full capacity and to set up silicon conductor production (Interfax Mining Report, 1996b).

References Cited

- Canadian Corporate News, 1997, Cameco, Kumtor gold mine achieves commercial production: Canadian Corporate News, June 5, 1997 (Accessed on the World Wide Web at URL <http://www.cdn-news.com/DATABASE/html/1997/6/5/0605032N.html>)
- Dzhapkypov, Almazbek, The current state and development prospects in the mining industry of the Kyrgyz Republic; in The mining and processing of metals in the former Soviet Union: International Conference on the Mining and Processing of Metals in the Former Soviet Union, Vienna, Austria, January 31-February 1, 1996, Hilton. Proceedings. Interfax Mining and Metals Report, 1996a, Kadamzhai antimony plant to keep output steady, produce gold: Interfax Mining and Metals Report, v. V, no. 49, November 29-December 6, p. 10-11.
- 1996b, Kyrgyz rare-earth metals plant stabilizes output: Interfax Mining and Metals Report, v. V, no. 45, November 1-8, p. 11.
- 1996c, Uzbeks, Kirghizes, Kazakhs to assess radioactive waste damage: Interfax Mining and Metals Report, v. V, no. 45, November 1-8, p. 12-13.
- 1996d, World Bank to inspect Kyrgyz mercury complex: v. V, no. 44, October 25-November 1, p. 12.
- 1997a, Kyrgyz antimony plant to form international Corporation: v. VI, no. 27.
- 1997b, Kyrgyzstan attracts \$1.7 mln to geological sector: Interfax Mining and Metals Report, v. VI, no. 44, p. 3.
- Interfax Mining News, 1997a, Cameco to Develop Second Gold Field in Kyrgyzstan: Interfax Mining News, January 10. (Accessed on the World Wide Web at URL <http://www.infor-mine.com/interfax/news/ifjan10-97.html>).
- 1997b, Kyrgyz Mining, metals plants post output up in 1996: Interfax Mining News, March 21. (Accessed on the World Wide Web at URL <http://www.infomine.com/interfax/news/ifmar21-97.html>)
- Interfax Statistical Report, 1997, Commonwealth of Independent States—Preliminary 1996 results: Interfax Statistical Report, v. VI, no. 8, February 14-21, p. 12-13.
- Razgulyaev, Yuriy, 1996, There is enough gold for everyone: Moscow, Delovoy Mir [Business World], July 16, 1996, p. 2.
- Slovo Kyrgyzstana, 1997, [Bishkek]: Slovo Kyrgyzstana, February 4, p. 2.
- Summary of World Broadcasts, 1997, [Bishkek], Kyrgyz television, 1st channel, March 10, 1530 GMT. (Available from the British Broadcasting Corporation, Reading, England)

OTHER SOURCES OF INFORMATION

- Kyrgyzstan State Committee for Geology and MineralResources
2 Erkindik Prospect
Bishkek 720001
Kyrgyzstan
tel: 7-3312-264-626, 224-961
Fax: 7-3312-268-690
- Kyrgyzaltny
55 Belinsky Street
Bishkek 720001
Kyrgyzstan
Tel: 7-3312-220-941, 227-252
Fax: 7-3312-227-228, 220-941
- Goskominvest State Committee on Foreign Investment and EconomicAssistance (Goskominvest)
Erkindik Prospect 58A
720847 Bishkek
Kyrgyzstan
Tel: 7-3312-22-32-93,22-12-52
Fax: 7-3312-22-03-63, 62-01-88
- Ministry of Foreign Trade and Industry
Chui Prospect 106
720000 Bishkek
Kyrgyzstan
Tel: 7-3312-22-38-66
Fax: 7-3312-22-97-93

TABLE 1
KYRGYZSTAN: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity	1992	1993	1994	1995	1996 e/
Antimony: e/					
Mine output, Sb content	2,000	1,600	1,400	1,400	1,400
Metal and compounds	11,000	11,000	9,000	9,000	8,650
Cement	1,100,000	700,000	400,000	310,000	500,000
Coal	2,200,000	1,700,000	800,000	474,000	400,000
Fluorspar concentrate	850 e/	850 e/	834	850	2,500
Gold e/ kilograms	1,050	1,500	2,050	4,500	5,000
Mercury: e/					
Mine output, Hg content	300	300	300	300	500
Metal	400	400	379 2/	380 2/	580 2/
Natural gas million cubic meters	100	40	40	36	30
Petroleum, crude	100,000	100,000	85,900	88,500	100,000

1/ Based on information available through Nov. 1997.

2/ Reported figure.

TABLE 2
KYRGYZSTAN: STRUCTURE OF THE MINERAL INDUSTRY FOR 1996

(Metric tons unless otherwise specified)

Commodity	Major operating companies	Location of main facilities	Annual capacity e/
Antimony:			
Metal content of ore	Kadamzhay and Khaydarkan complexes	Kadamzhay, Khaydarkan regions	2,400.
Metal	Kadamzhay metallurgical complex	Kadamzhay region	20,000.
Coal	7 underground mines, 5 open pits	Southwestern, central, and northeastern parts of country	2,200,000.
Cement	Kantskiy cement plant	Kant	1,500,000.
Fluorspar	Khaydarkan mining and metallurgical complex	Khaydarkan deposit	3,000 (fluorspar concentrate).
Gold	Makmalzoloto Kumtor Gold Company Solton-Sary Mine	Makmal deposit Kumtor deposit Naryn region	5 19 (scheduled for commissioning in 1997) NA.
Mercury:			
Metal content of ore	Khaydarkan mining and metallurgical complex	Khaydarkan deposit	700.
Metal	do.	Khaydarkan	1,000.
Petroleum and natural gas million cubic meters	Kyrgyzazmunayzat	About 300 wells: major deposits include Changyr-Tashskoye, Izbaskentskoye, Mayli-Suyskoye, Chigirchikskoye, Karagachskoye Togap-Beshkentskoye, Susaskoye	150,000 (petroleum). 100 (natural gas).
Rare earths	Kyrgyz mining complex	Aktyuz deposit	NA.
	Kyrgyz chemical and metallurgical plant	Orlovka	NA.
Uranium	Kara Balta Complex	Mines in Min Kush in central, Kadji-Say in eastern, and Tyuamuyin in southern Kyrgyzstan; processing plant in Chui region	NA.

e/ Estimated. NA Not available.