

Mineral Industry Surveys

For information, contact:

Gerald R. Smith, Lead Commodity Specialist
U.S. Geological Survey
989 National Center
Reston, VA 20192
Telephone: (703) 648-4983, Fax: (703) 648-7757
E-mail: grsmith@usgs.gov

Joshua I. Martinez (Data)
Telephone: (703) 648-7961
Fax: (703) 648-7975
E-mail: jimartinez@usgs.gov

Internet: <http://minerals.usgs.gov/minerals>

LEAD IN DECEMBER 2003

Domestic mine production, based on the net quantity of lead recovered from concentrate, remained essentially unchanged in December compared with production in November, according to the U.S. Geological Survey. Secondary refinery production increased by about 1% and reported consumption increased by 3% compared with production and consumption in the previous month.

According to the Platts Metals Week published quotations for November, the average North American producer price and the average London Metal Exchange Ltd. (LME) cash price (U.S. dollars) increased by 0.50% and 11.25%, respectively.

LME lead prices continued to climb in December as a result of broader investment fund buying in metals, stronger Chinese lead demand, and further declines in LME stocks of refined lead. Lead demand in North America and Europe did not increase significantly in the early winter months through December—temperatures were generally too mild to provide an appreciable demand boost in the replacement battery sector. Periods of colder temperatures during the remainder of the winter are not likely to increase lead demand in the replacement battery sector. Rather, any demand increase will probably be met from existing battery inventories. Technological improvements that have increased battery life also were believed to have contributed to the lower increases in replacement battery demand during the early months of winter (CRU International Ltd., 2004).

The National Defense Stockpile (NDS) aggregated cash disposal (sale) of lead in December under the monthly Basic Ordering Agreement, DLA-Lead-005, was 3,850 metric tons (t) (4,244 short tons). Sales of lead in the first 3 months of fiscal year 2004 (October 2003 through December 2003) totaled 18,337 t (20,213 short tons) (Frank Ringquist, industrial specialist, market research, Defense National Stockpile Center, oral commun., March 3, 2004).

Hecla Mining Company, Coeur d'Alene, ID, announced that it planned to proceed with major underground development at its wholly owned Lucky Friday silver-lead-zinc mine. Production from the newly developed mining area is likely to begin in late 2005. This action is expected to ensure that the mine will continue to operate until 2011. Hecla operated the

mine at about 30% and 50% of capacity in 2001 and 2002, respectively, as a result of higher operating costs. During the first 9 months of 2003, however, production rose by nearly 40% compared with that in the same period in 2002, yielding 8,950 t of lead. As of December 31, 2002, resources at Lucky Friday were estimated at about 1 million metric tons grading 8.5% lead, 1.7% zinc, and 453 grams per metric ton (13.2 ounces per short ton) silver (Northern Miner, 2003).

Ivernia West Inc., Toronto, Canada, recently announced new reserve estimates for the Cano lead deposit, part of its 60%-owned Magellan property in Western Australia. The reserve estimates effectively raise the quantity of economically recoverable lead at Cano by 40% to 211,000 t. Total measured and indicated resources at Cano were revised to 4.7 million metric tons, grading 5.5% lead. The Cano deposit represents about 27% of the measured and indicated resources at the Magellan project. A mine life of about 12 years is envisioned for the Magellan project with concentrate production beginning in 2005 and averaging 70,000 metric tons per year (t/yr) contained lead. Construction of a refinery for processing the concentrate on site is expected to be completed in 2008 (Ivernia West Inc., 2003).

The Macedonian Privatization Agency continued its efforts to sell three of the country's lead-zinc mining operations. The operations all lie in northeastern Macedonia near the border with Bulgaria. Each of the mines is currently operating below capacity, owing principally to the loss of export markets. The Rudnici Zietovo Mine in the Probistip region has an ore production capacity of 600,000 t/yr; the Toranica Mine in Kriva Palanka and the Sasa Mine in Makedonska Kamenica can produce 450,000 t/yr and 750,000 t/yr, respectively. Measured and indicated resources at Rudnici Zietovo are estimated to be 10 Mt grading 5.79% lead and 2.09% zinc; at Toranica, 9.9 Mt grading 4.18% lead and 3.14% zinc; and at Sasa, 18.9 Mt grading 4.68% lead and 3.46% zinc. The Privatization Agency had set a deadline of February 20, 2004 for receipt of bids on these mines (Mining Journal, 2003).

The European Commission has adopted a proposal for a new battery directive that will require the collection and recycling of all batteries placed on the European Union (EU) market. The

proposal is intended to prevent spent batteries from being discarded in incinerators and landfills, thereby effectively increasing the recovery of the various metals used in batteries as well as addressing environmental concerns associated with disposal of these metals. The proposal would include a ban on the landfilling and incineration of automotive and industrial type batteries and aims to create an EU-wide framework for national battery collection and recycling (Platts Metals Week, 2003).

Update

Doe Run Resources Corp., St. Louis, MO, announced in early January 2004 that it would close permanently its Viburnum No. 28 lead mine in the Viburnum Trend of Missouri that had been in operation for 41 years. The last mining of lead ore from the mine took place in late November 2003. Mine closure activities were expected to be completed in 2004 and will include equipment removal and permanent sealing of the mine shaft (Doe Run Resources Corp., 2004).

Teck Cominco Ltd., Vancouver, British Columbia, Canada, announced in late February 2004 that its subsidiary, Teck Cominco Metals Ltd., had declared a *force majeure* on its refined lead contracts. The declaration was made as a result of damage to the KIVCET lead furnace and boiler at its Trail

Metallurgical Operation, incurred from an explosion in the furnace on February 2, 2004. Production from the damaged furnace is expected to resume in the second half of March. Deliveries to lead customers, however, are not expected to resume until April (Teck Cominco Ltd., 2004).

References Cited

- CRU International Ltd., 2004, Market Commentary: CRU Monitor—Lead, January, p. 2.
- Doe Run Resources Corp., 2004, Viburnum Mine hoists last load of lead ore, ending 41 years of operation: St. Louis, MO, Doe Run Resources Corp. news release, January 8, 2 p.
- Ivernia West Inc., 2003, Ivernia West increases reserves on Magellan lead property; initiates a \$0.7 million drilling program based on promising results: Toronto, Canada, Ivernia West Inc. press release, December 16, 4p.
- Mining Journal, 2003, Macedonian privatization offer: Mining Journal, December 19/26, p. 5.
- Northern Miner, 2003, New life for Lucky Friday: Northern Miner, v. 89, no. 43, December 12-18, p. 1.
- Platts Metals Week, 2003, EC proposal targets collection, recycling of batteries: Platts Metals Week, v. 74, no. 48, December 1, p. 12.
- Teck Cominco Ltd., 2004, Teck Cominco declares force majeure: Vancouver, British Columbia, Canada, Teck Cominco Ltd. news release, February 25, 1 p.

TABLE 1
SALIENT LEAD STATISTICS IN THE UNITED STATES¹

(Metric tons, lead content, unless otherwise specified)

	2002		2003		
	Year	January - December	November	December	January - December
Production:					
Mine (recoverable)	440,000	440,000	34,000 ^r	33,900	449,000
Primary refinery	262,000	NA	NA	NA	NA
Secondary refinery:					
Reported by smelters/refineries	1,100,000	1,090,000	91,500	93,000	1,120,000
Estimated	--	11,000	924	940	11,300
Recovered from copper-base scrap ^c	13,500	15,000	1,250	1,250	15,000
Total secondary	1,120,000	1,120,000	93,700	95,200	1,140,000
Stocks, end of period:					
Primary refineries	NA	NA	NA	NA	NA
Secondary smelters and consumers	105,000	87,300	87,400 ^r	88,000	88,000
Imports for consumption:					
Ore and concentrates	6	6	--	NA	6 ²
Refined metal	210,000	210,000	12,100	NA	162,000 ²
Consumption:					
Reported	1,440,000	1,530,000	111,000 ^r	114,000	1,360,000
Undistributed ^c	--	151,000	11,000 ^r	11,300	134,000
Total	1,440,000	1,680,000	122,000 ^r	125,000	1,490,000
Exports:					
Ore and concentrates	241,000	241,000	9,270	NA	246,000 ²
Bullion	256	256	9	NA	593 ²
Wrought and unwrought lead	43,200	43,200	4,760	NA	91,700 ²
TEL/TML preparations, based on lead compounds	516	516	10	NA	494 ²
Exports (gross weight): Scrap	106,000	106,000	5,520	NA	87,100 ²
Platts Metals Week North American producer price (cents per pound)					
	43.56	43.56	44.08	44.30	43.76

^cEstimated. ^rRevised. NA Not available. -- Zero.

¹Data are rounded to no more than three significant digits, except prices; may not add to totals shown.

²Includes data for January - November only; December data were not available at time of publication.

TABLE 2
MONTHLY AVERAGE LEAD PRICES

	North American producer price cents/lb	LME		Sterling exchange rate dollars/£
		\$/metric ton	£/metric ton	
2002:				
December	43.54	443.22	279.41	1.586295
Year	43.56	452.29	301.96	1.503145
2003:				
October	43.98	586.82	349.47	1.679164
November	44.08	621.71	367.93	1.689739
December	44.30	691.69	394.89	1.751605

Source: Platts Metals Week.

TABLE 3
CONSUMPTION OF PURCHASED LEAD-BASE SCRAP¹

(Metric tons, gross weight)

Item	Stocks	Net receipts	Consumption	Stocks
	November 30, 2003			December 31, 2003
Battery-lead	18,600	91,100	91,500	18,200
Soft lead	W	W	W	W
Drosses and residues	1,510	3,220	3,310	1,420
Other ²	1,630	2,020	2,100	1,550
Total	21,800	96,300	97,000	21,100
Percent change from preceding month	XX	+1.3	+3.6	-2.9

W Withheld to avoid disclosing company proprietary data; included with "Other." XX Not applicable.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes solder, common babbitt, antimonial lead, cable covering, type metals, and other lead-base scrap not elsewhere classified.

TABLE 4
LEAD, TIN, AND ANTIMONY RECOVERED FROM LEAD-BASE SCRAP
IN DECEMBER 2003¹

(Metric tons)

Product recovered	Secondary metal content		
	Lead	Tin	Antimony
Soft and calcium lead	68,200	--	--
Remelt lead	W	W	W
Antimonial lead	24,100	W	W
Other ²	W	W	--
Total lead-base	93,000	46	396

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

¹Data are rounded to no more than three significant digits.

²Includes cable lead, lead-base babbitt, solder, type metals, and other products.

TABLE 5
CONSUMPTION OF LEAD IN THE UNITED STATES¹

(Metric tons, lead content)

Uses	2002		2003		
	Year	January - December	November	December	January - December
Metal products:					
Ammunition, shot and bullets	57,600	39,300	2,300	1,630	34,600
Brass and bronze, billet and ingots	2,730	1,460	305	287	1,750
Cable covering, power and communication and calking lead, building construction	3,550	2,920	251	305	4,290
Casting metals	34,800	7,270	448	447	5,370
Sheet lead, pipes, traps and other extruded products	27,900	19,700	1,200	1,200	15,100
Solder	6,450	1,880	151	255	2,200
Storage batteries, including oxides	1,190,000	1,370,000	101,000 ^r	105,000	1,220,000
Terne metal, type metal, and other metal products ²	24,600	1,030	5	6	78
Total metal products	1,350,000	1,440,000	106,000 ^r	109,000	1,280,000
Other oxides and miscellaneous uses	86,200	86,900	5,070	5,050	77,300
Total reported	1,440,000	1,530,000	111,000 ^r	114,000	1,360,000
Undistributed consumption ^c	--	151,000	11,000 ^r	11,300	134,000
Grand total	1,440,000	1,680,000	122,000 ^r	125,000	1,490,000

^cEstimated. ^rRevised. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes lead consumed in foil, collapsible tubes, annealing, plating, galvanizing, and fishing weights.

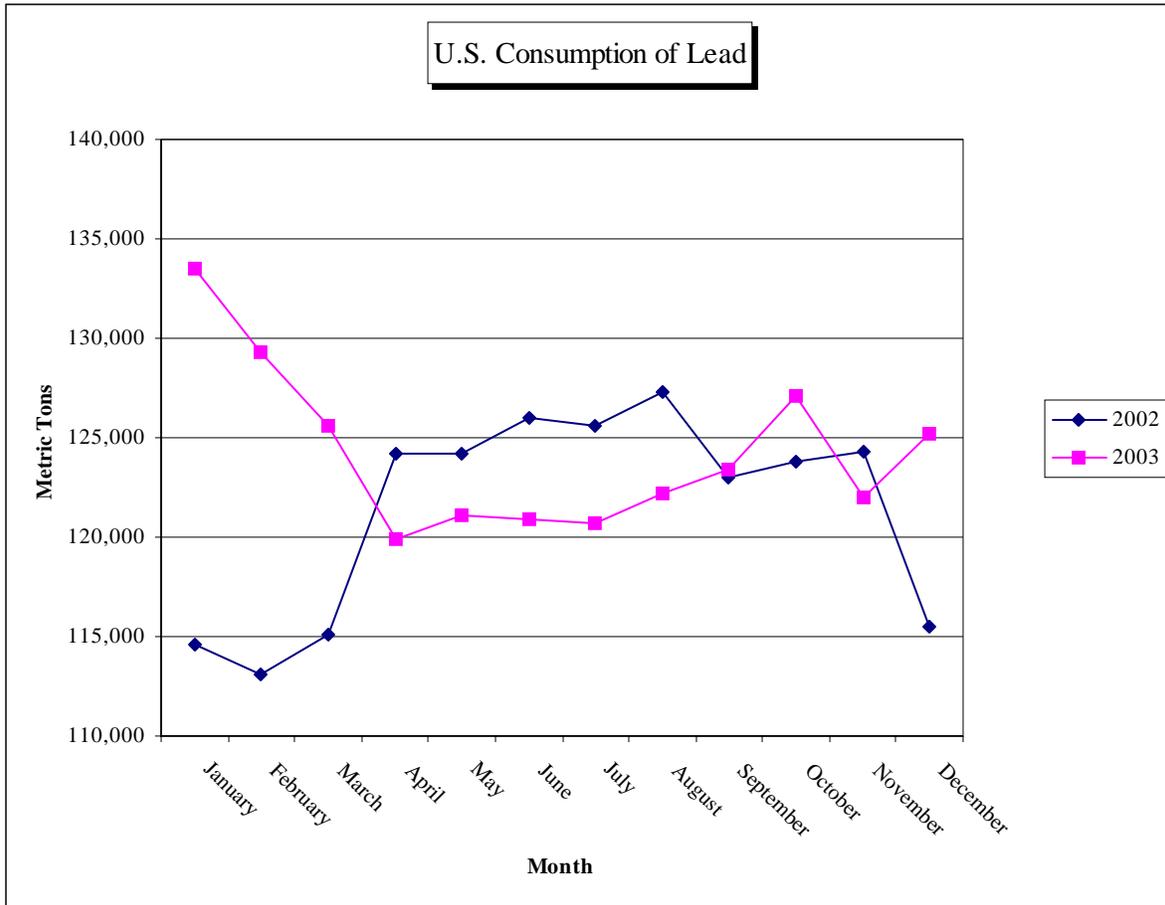


TABLE 6
CONSUMER AND SECONDARY SMELTER STOCKS, RECEIPTS,
AND CONSUMPTION OF LEAD¹

(Metric tons, lead content)

Type of material	Stocks		Consumption	Stocks December 31, 2003
	November 30, 2003	Net receipts		
Soft lead	42,100	65,400	66,200	41,200
Antimonial lead	30,000 ^r	27,200	25,700	31,400
Lead alloys	W	21,800	21,800	W
Copper-base scrap	W	57	55	W
Total	87,400 ^r	114,000	114,000	88,000

^rRevised. W Withheld to avoid disclosing company proprietary data; included in "Total."

¹Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 7
U.S. EXPORTS OF LEAD, BY CLASS¹

(Metric tons)

	2002		2003		
	Year	November	October	November	January - November
	Lead content:				
Ore and concentrates	241,000	6,770	44,800	9,270	246,000
Bullion	256	161	--	9	593
Materials excluding scrap	43,200	33,000	5,480	4,760	91,700
TEL/TML preparations, based on lead compounds	516	414	21	10	494
Total	285,000	268,000	50,300	14,100	339,000
Gross weight: Scrap	106,000	97,700	9,140	5,520	87,100

-- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 8
U.S. IMPORTS OF LEAD BY TYPE OF MATERIALS AND BY COUNTRY OF ORIGIN¹

(Metric tons, lead content)

Country of origin	General imports					Imports for consumption				
	2002		2003			2002		2003		
	Year	January - November	October	November	January - November	Year	January - November	October	November	January - November
Ore, matte, etc.:										
China	3	3	--	--	--	3	3	--	--	--
United Kingdom	3	3	--	--	--	3	3	--	--	--
Total	6	6	--	--	--	6	6	--	--	--
Base bullion:										
Argentina	--	--	--	--	5	--	--	--	--	5
Germany	--	--	--	--	1	--	--	--	--	1
Total	--	--	--	--	6	--	--	--	--	6
Pigs and bars:										
Australia	43,700	32,600	--	--	10,100	2,630	2,630	31	76	107
Canada	172,000	157,000	10,800	11,300	153,000	172,000	157,000	10,800	11,300	153,000
China	28,200	28,200	--	--	1	28,200	28,200	--	--	1
Germany	185	185	--	643	--	185	185	--	643	--
Mexico	7,460	6,770	447	--	8,060	7,460	6,770	447	--	8,060
Other	246	246	--	84	209	94	95	--	84	209
Total	251,000	225,000	11,300	12,000	172,000	210,000	195,000	11,300	12,100	162,000
Reclaimed scrap, including ash and residues	--	--	--	--	--	--	--	--	--	--
Grand total	251,000	225,000	11,300	12,000	172,000	210,000	195,000	11,300	12,100	162,000

-- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.