Lead

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According to preliminary figures from the International Lead and Zinc Study Group (ILZSG), world lead usage fell slightly in 2001 to 6.4 Mt, down 1.2% from the record high 6.5 Mt in 2000. World mine production of lead rose by 1% to just over 3 Mt while lead metal production dropped slightly to 6.5 Mt. Overall, there was a close balance between total supply and demand in the Western World with the shortfall made up from imports from former Eastern countries. Lead inventories held in London Metal Exchange (LME) warehouses fell by 33 000 t in 2001; however, stocks reported by producers were 36 000 t higher than at the end of 2000.

CANADIAN DEVELOPMENTS

2001 mine production:	$95.8 million
World rank:	Seventh (metal production)
Exports:	$286 million

Canada	1999	2000	2001
	(000 tonnes)		
Mine production	162	149	154
Metal production	266	284	231
Usage	70	68	55

Canada ranked fifth in terms of the mine production of lead after Australia, China, the United States and Peru, and seventh in terms of metal production in 2001 (Figure 4). Significant events in Canada in 2001 included the closure of the Sullivan mine in December and the announcements of closures in 2002 of the Nanisivik and Polaris mines in Nunavut. Together the closure of these three mines will leave the Brunswick mine in New Brunswick as the sole major producer of lead concentrates in Canada.

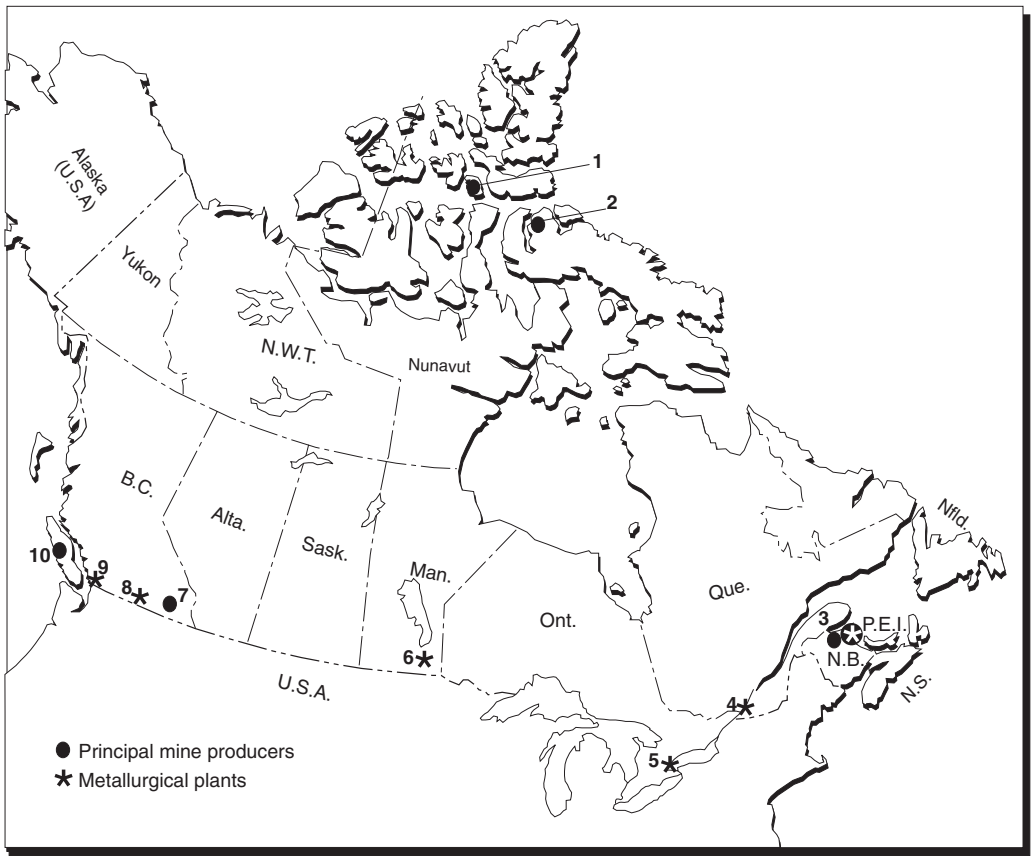
- In terms of corporate events, Teck Corporation and Cominco Ltd. merged to create Teck Cominco Limited in July. Headquartered in Vancouver, it ranks as the fourth largest North American-based base-metals mining and refining company. In November, Boliden Limited shareholders approved the return of the company's headquarters from Toronto back to Stockholm, Sweden. Boliden moved to Toronto from Sweden in 1997.

- Cominco Ltd. began a series of announced production cutbacks at its Trail smelter complex in southern British Columbia in December 2000. The cutbacks at Trail were part of a plan to allow for a fixed price power swap agreement with a major U.S. energy company. All production at the lead smelter stopped in September to examine health concerns related to workers exposed to thallium while performing furnace maintenance. Production resumed in November.

- On Friday, December 21, the Sullivan mine was closed after 92 years of active production. The mine produced more than $20 billion in lead, zinc and silver over its life and provided employment for more than four generations of miners in the Kimberley region. Teck Cominco started an extensive decommissioning and reclamation process at the site.

- Exide Technologies announced that it was going to delay the production start-up of industrial-type lead-acid batteries at its Maple, Ontario, plant until at least the first quarter of 2002.

Figure 1
Lead Producers in Canada, 2001

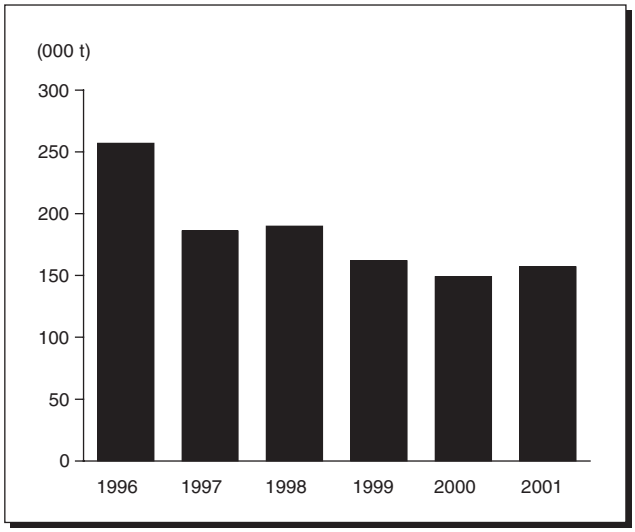


Numbers refer to locations on map above.

LEAD-PRODUCING MINES	WEB SITE
1. Polaris, Teck Cominco Limited	www.teckcominco.com
2. Nanisivik, Breakwater Resources Ltd.	www.breakwater.ca
3. Brunswick, Noranda Inc.	www.noranda.com
7. Sullivan, Teck Cominco Limited (closed Dec. 2001)	www.teckcominco.com
10. Myra Falls, Boliden Limited	www.boliden.ca

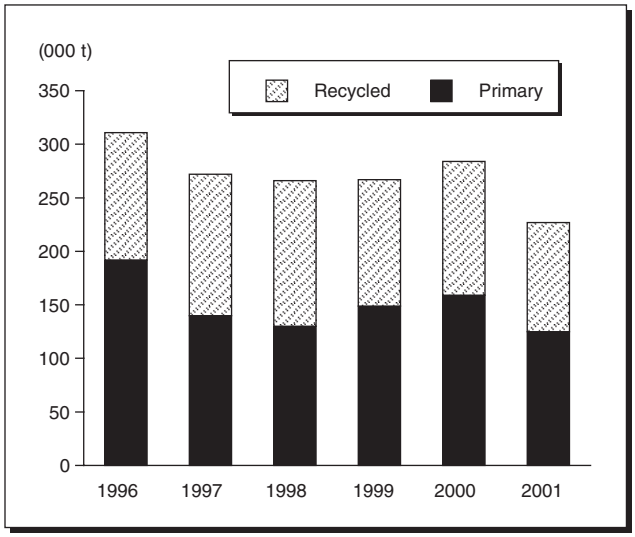
LEAD METALLURGICAL PLANTS	
3. Belledune, Noranda Inc.	www.noranda.com
4. Nova Pb Inc.	www.novapb.com
General Smelting Company of Canada	
American Iron and Metal Co. (1999) Inc.	www.americanironandmetal.com
5. Tonolli, Tonolli Canada Ltd. and Canada Metal Company	
6. The Canada Metal (Western) Ltd.	
8. Trail, Teck Cominco Limited	www.teckcominco.com
9. Metalex Products Ltd.	

Figure 2
Canadian Mine Production of Lead, 1996-2001



Source: Natural Resources Canada.

Figure 3
Canadian Refined Lead Metal Production, 1996-2001



Source: Natural Resources Canada.

WORLD DEVELOPMENTS

World	1999	2000	2001
	(000 tonnes)		
Mine production	2 978	2 973	3 003
Metal production	6 280	6 593	6 510
Usage	6 231	6 497	6 418

According to ILZSG data, world mine production of lead increased slightly to just over 3 Mt in 2001, up from 2.9 Mt in 2000 (Figure 4). A 10% rise in mine production in Australia was mainly due to increased output at the Century and Pillara mines. Chinese production of lead rose by 7% in 2001. Asian output was also up, based on a 15.4% rise in production in Kazakhstan.

World lead metal production fell by 1.3% to 6.5 Mt in 2001 (Figure 5). Output in the United States fell by 6.6% in 2001, mainly as a consequence of cutbacks at the Herculaneum smelter. In Europe, cutbacks in Belgium, France, Germany and Italy were partially offset by an increase in the United Kingdom, resulting in a slight fall in European production of less than 1% in 2001. Increases in China offset losses in Japan, South Korea and Kazakhstan, leading to a 4% rise in lead metal production in Asia in 2001. A record 61.6% of Western World refined lead metal output was produced using recycled materials in 2001, mainly in the form of used lead-acid batteries.

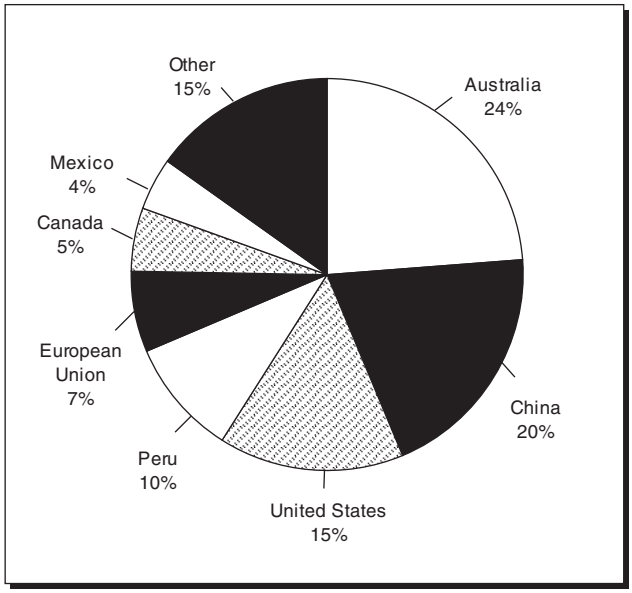
- In March 2001, The Doe Run Company reduced its lead output by 80 000 t/y by closing two mines in the United States and cut its lead concentrates purchases. The company placed its No. 29 mine in its southeast Missouri Mining Division on care and maintenance. The No. 28 mine at the division will be mined to closure this year. As a result of the closures, production at Doe Run's Herculaneum smelter will fall from 250 000 t/y to 170 000 t/y.

- Grupo Mexico S.A. de C.V. announced in May that its wholly owned subsidiary, Asarco Inc., would continue the suspension of operations at its 70 000-t/y East Helena lead smelter in the United States until market conditions and the supply of lead concentrates and other raw materials improved.

- Weak zinc prices and the strength of the Mexican peso led Dowa Mining Co., Ltd. to temporarily suspend production at the Minera Rey de Plata lead-zinc mine in Guerrero State in December. Minera Rey de Plata is owned 51% by Mexico's Mina Peñoles SA, 39% by Dowa Mining, and 10% by Sumitomo Corp.; it began operations in 1997.

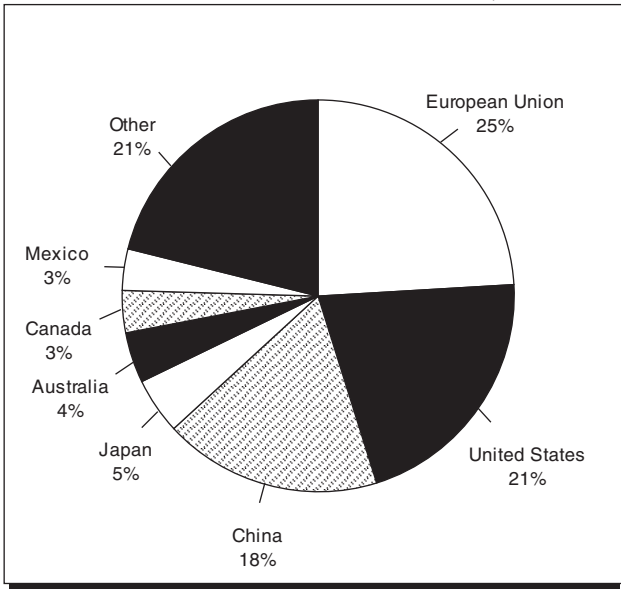
- Boliden Limited closed the Laisvall mine located in Norrbotten, Sweden, in October after nearly 60 years of production. Elsewhere in Europe, the company's subsidiary, Boliden Apirsa SL, ceased production at its Los Frailes operations in Spain.

Figure 4
World Lead Mine Production, 2001



Source: International Lead and Zinc Study Group.

Figure 5
World Refined Lead Metal Production, 2001



Source: International Lead and Zinc Study Group.

- Exide Technologies, the U.S.-based battery maker and lead recycler, announced plans to close two automotive battery manufacturing plants in North America and to restructure its European operations.

- The Yuguang Gold and Lead Group completed an expansion project in China that added 50 000 t/y of capacity, increasing the company's total lead production capacity to 130 000 t/y.

- Pasminco Limited was placed into voluntary administration in September in an attempt to restructure the company's debt of over A$3.4 billion. As part of the restructuring, the new Century lead-zinc mine in Queensland was put up for sale. By year-end, however, the administrator had applied for and received permission from the Australian Federal Court to reschedule the next meeting of creditors from January 7, 2002, to April 7, 2002.

LEAD USE

Preliminary statistics from the ILZSG indicate that total world lead demand fell slightly to just over 6.4 Mt in 2001. Western World demand declined 3% to 5.4 Mt. European Union member states and the United States accounted for more than half of world lead demand while China accounted for another 10% (Figure 6).

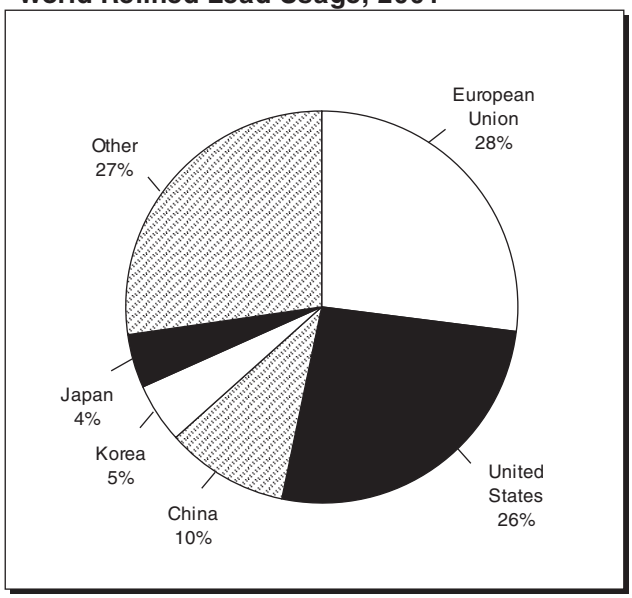
Lead-acid batteries constitute the largest market for lead, representing about 75% of total Western World usage. The largest market for batteries, representing about 80% of lead used in the industry, is the automotive sector. The average automobile battery contains about 10 kg of lead. Some factors that influence lead demand in the automotive sector are new vehicle production, trends and age in vehicle population, and climatic conditions. For example, hotter summers and colder winters in North America and Europe during the last few years have contributed to a greater number of battery failures and increased replacement battery demand (Figure 7).

The second largest use of lead is in pigments and compounds, which accounted for 8.8% of Western World demand in 2000. The principal uses are in PVC stabilizers, which prevent degradation during processing or from ultraviolet radiation; in colour pigments; and in the manufacture of glass, including crystal, light bulbs, insulators and television/computer screens. While lead is still used for some specific paint applications, its general use in this application has declined significantly due to the potential risk involved in exposure to weathered or flaked paint.

INTERNATIONAL ORGANIZATIONS

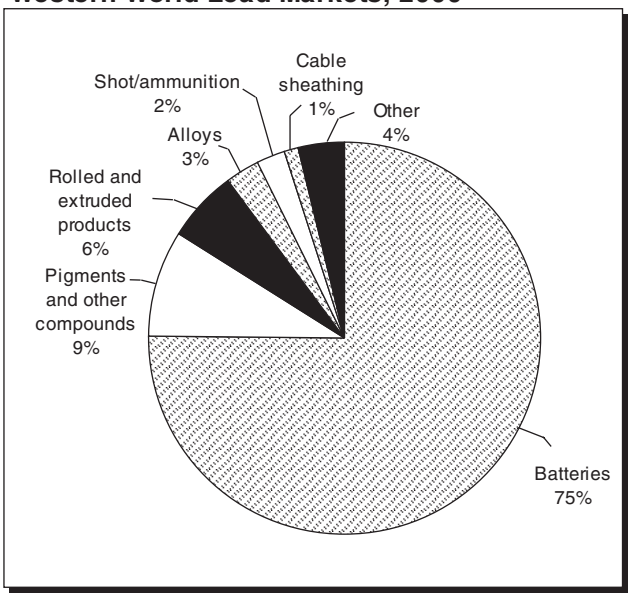
The International Lead and Zinc Study Group was formed in 1959 to improve market information and provide opportunities for regular intergovernmental consultations on issues related to lead and zinc mar-

Figure 6
World Refined Lead Usage, 2001



Source: International Lead and Zinc Study Group.

Figure 7
Western World Lead Markets, 2000



Source: International Lead and Zinc Study Group.

kets. Particular attention is given to providing regular and frequent information on the supply, demand and outlook for lead and zinc.

The Study Group is headquartered in London, England. In 2000, 28 countries, representing most of the world's major lead- and zinc-producing and using nations, were members of the Group. The Group has an extensive information-gathering and dissemination role and acts as an effective mechanism for increasing market transparency related to the production, usage and trade of lead and zinc. The Group is also an important forum for communication among governments, among industry, and between governments and industry. It holds a general session each year in October. Member countries' delegations include industry representatives as advisors. Canada has been an active member of the Group since its inception.

The 46th Session of the Study Group was held in New Delhi, India, in October 2001 and was attended by some 85 registered participants, including representatives of 23 member countries and observers from several invited nations, industry and non-governmental organizations. As part of the work of the Group's Economic and Environment Committee, two new reports will be published in 2002: *The Use of Zinc in Construction and Public Infrastructure* and *The Use of Lead and Zinc in Chemicals*. Work is also continuing on a joint Study Group workshop on recycling to be held sometime in 2003.

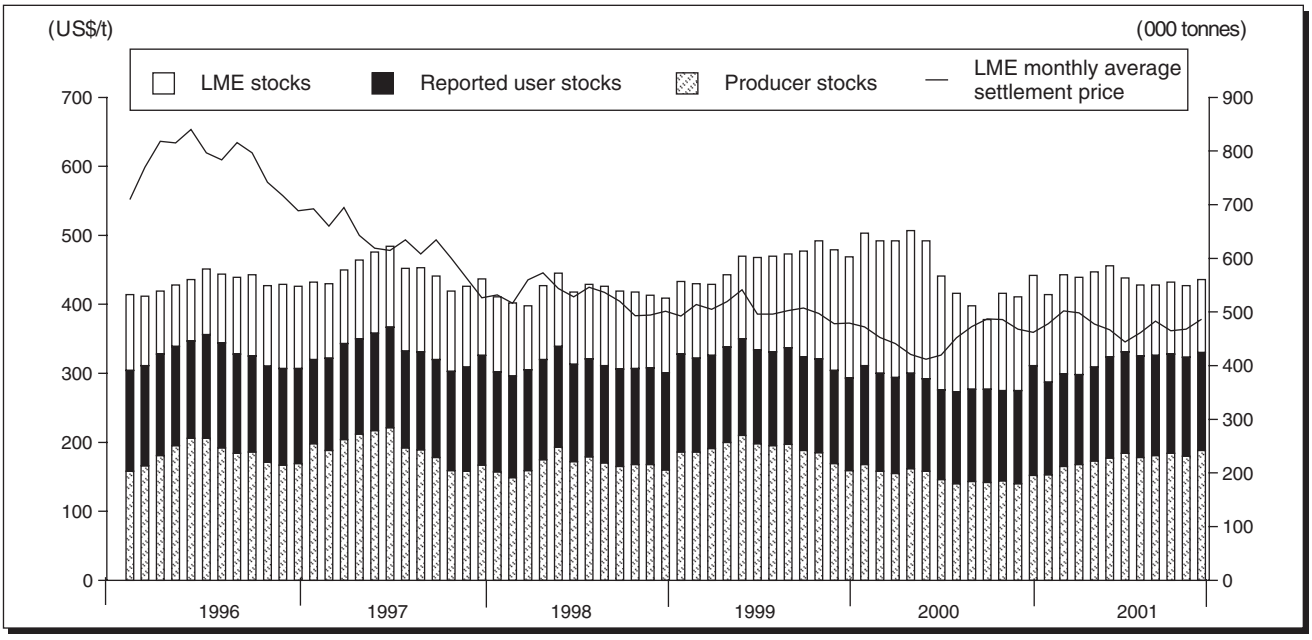
The Group continues to work on updating its capacity to deliver, through electronic means, its monthly lead and zinc statistical bulletin. The monthly bulletin is now available to member countries and subscribers on-line through the Group's web site. The development of an interactive version of the bulletin and other improvements to the site continue. The Study Group will hold its next Annual Session and meetings of its Committees and Industry Advisory Panel in Stockholm, Sweden, from October 4 to 6, 2002.

More information about the Group's activities and the availability of a wide range of publications pertaining to lead and zinc can be obtained from its web site at www.ilzsg.org. For information on the Group's activities in partnership with the International Copper Study Group and the International Nickel Study Group related to the contribution nonferrous metals make to sustainable development and the Non-Ferrous Metals Consultative Forum, visit their joint web site at www.nfmsd.org.

PRICES AND STOCKS

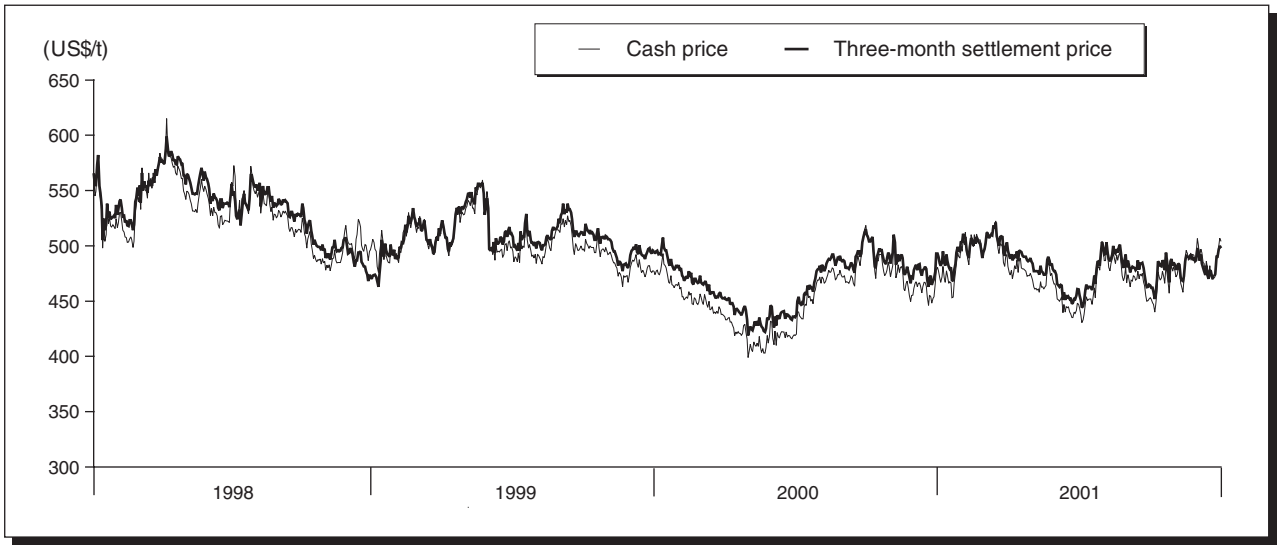
Cash settlement and forward three-month prices on the London Metal Exchange (LME) in 2001 averaged US$476/t and US$483/t, respectively, 4.8% and 3.2% higher than in 2000. Prices during the year peaked at US$523/t in March and reached their lowest level of US$431/t in July (Figure 9).

Figure 8
Lead Prices and Stocks, 1996-2001



Source: International Lead and Zinc Study Group.

Figure 9
LME Daily Official Cash and Three-Month Settlement Prices, 1998-2001



Source: London Metal Exchange.

Inventories held in LME warehouses fell by 33 000 t in 2001 to 97 700 t at year-end. However, stocks reported by producers were 46 000 t higher than at the end of 2000, reaching a total of 198 000 t (Figure 8).

OUTLOOK

According to the International Lead and Zinc Study Group, a forecast rise in lead demand in Asia of 2.7% is expected to be balanced by a 4.3% decline in the United States, resulting in an overall similar level of global demand for refined lead metal in 2002 compared to 2001. In the West, however, demand is forecast to fall by just over 1%. Reductions in lead mine output in the United States and mine closures in Canada, Spain and Sweden are expected to result in an overall decrease in mine output of 7.2% globally and 9.7% in the West. In Canada, mine production is expected to decline by about 37% in 2002 to 85 000 t with the closure of the Sullivan mine at the end of 2001 and the Polaris and Nanisivik mines at the end of the first half of 2002.

Decreases in refined lead metal output in Europe, China and the United States are expected to be offset by rises in Australia, Canada, South Korea, Malaysia and Morocco. Overall, the production of refined lead metal in 2002 is expected to be 0.8% lower globally than in 2001 and 0.5% higher in the Western World. The level of net exports of refined lead from China to the West is expected to be constrained by the restricted availability of suitable raw materials.

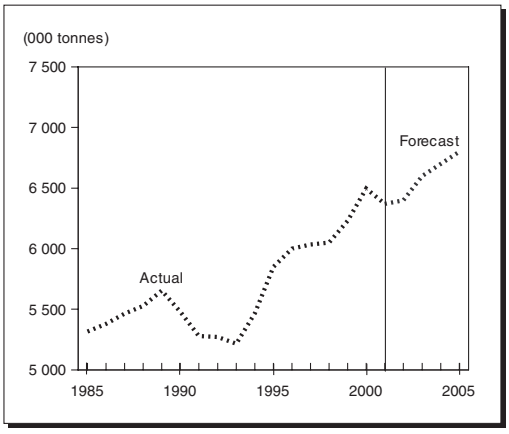
Taking all available factors into consideration, the Study Group's latest forecast indicates that there will be a close balance between the supply and demand for refined lead in the Western World in 2002. Over the long term, lead demand is expected to maintain an average annual growth rate of 1.5-2.0%. The battery sector will continue to account for most of the growth, with the newly industrialized nations of Southeast Asia expected to continue to record their most rapid growth as their vehicle population expands.

Prices are expected to average slightly higher than last year at about US$490/t. In the longer term, prices are expected to average between US$500 and $550/t to the year 2005.

Notes: (1) For definitions and valuation of mineral production, shipments and trade, please refer to Chapter 64. (2) Information in this review was current as of June 5, 2002. (3) This and other reviews, including previous editions, are available on the Internet at www.nrcan.gc.ca/mms/cmy/index_e.html.

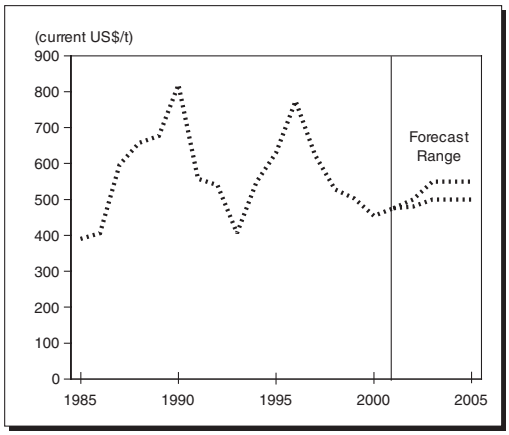
NOTE TO READERS

Figure 10
World Lead Usage, 1985-2005



Source: Natural Resources Canada.

Figure 11
LME Cash Settlement Lead Prices, 1985-2005



Source: Natural Resources Canada.

TARIFFS

Item No.	Description	Canada			United States	EU	Japan (1)
		MFN	GPT	USA	Canada (1)	MFN	WTO
2607.00	Lead ores and concentrates	Free	Free	Free	Free	Free	Free
78.01	Unwrought lead						
7801.10	Refined lead						
7801.10.10	Pig and block	Free	Free	Free	Free	2.5%	Free-2.70 yen/kg
7801.10.90	Other	2.5%	Free	Free	Free	2.5%	Free-2.70 yen/kg
7801.91	Other: Containing by weight antimony as the principal other element	Free	Free	Free	Free	2.5%	Free to 2.8%
7801.99.10	Lead bullion	2.5%	Free	Free	Free	Free	3%
7801.99.20	Lead alloys	2.5%	Free	Free	Free	2.5%	Free to 2.8%
7801.99.90	Other	2.5%	Free	Free	Free	2.5%	Free-2.70 yen/kg
7802.00	Lead waste and scrap	Free	Free	Free	Free	Free	2.1%
7803.00	Lead bars, rods, profiles and wire						
7803.00.10	Bars and rods, not alloyed	2.5%	Free	Free	Free	5%	3%
7803.00.90	Unwrought lead, other	3%	Free	Free	Free	5%	3%
7804.11	Lead sheets, strip and foil of a thickness (excluding any backing) not exceeding 0.2 mm						
7804.11.10	Of lead-tin alloys, whether or not containing antimony	Free	Free	Free	Free	5%	3%
7804.11.90	Other	3%	Free	Free	Free	5%	3%
7804.19	Lead plates, sheet, strip and foil, n.e.s.						
7804.19.10	Not alloyed, of a thickness exceeding 0.2 mm but not exceeding 5 mm, and a width exceeding 600 mm	2.5%	Free	Free	Free	5%	3%
7804.19.20	Of lead-antimony-tin alloys	2.5%	Free	Free	Free	5%	3%
7804.19.90	Other	2.5%	Free	Free	Free	5%	3%
7804.20	Powders and flakes						
7804.20.10	Powders, not alloyed	2.5%	Free	Free	Free	Free	3%
7804.20.20	Alloyed powders; flakes	2.5%	Free	Free	Free	Free	3%
7805.00	Lead tubes, pipes, and tube or pipe fittings	3%	Free	Free	Free	5%	3%
7806.00	Other articles of lead	3%	Free	Free	Free	Free to 5%	3%

Sources: *Customs Tariff*, effective January 2002, Canada Customs and Revenue Agency; *Harmonized Tariff Schedule of the United States*, 2002; *Worldtariff Guidebook on Customs Tariff Schedules of Import Duties of the European Union* (41st Annual Edition: 2001); *Customs Tariff Schedules of Import Duties for Japan* (35th Annual Edition: 2001).

(1) WTO rate is shown; lower tariff rates may apply circumstantially.

TABLE 1. CANADA, LEAD PRODUCTION AND TRADE, 2000 AND 2001, AND USE, 1999 AND 2000

Item No.		2000		2001 (p)	
		(tonnes)	($000)	(tonnes)	($000)
SHIPMENTS (1)					
	New Brunswick	64 490	43 466	79 998	57 999
	British Columbia	46 930	31 631	36 688	26 599
	Nunavut	31 883	21 489	32 743	23 738
	Total	143 303	96 586	149 429	108 336
	Mine output (2)	148 769	..	157 127	..
	Refined production				
	Primary	159 192	..	125 185	..
	Recycled	125 141	..	101 637	..
	Total	284 333	..	226 822	..
EXPORTS					
2603.00.20	Lead content of copper ores and concentrates	1 000	269	–	–
2607.00	Lead ores and concentrates				
	Sweden	23 786	17 224	23 384	16 597
	Germany	10 196	7 480	10 600	7 860
	China	3 691	1 141	15 049	7 575
	Belgium	–	–	4 792	2 454
	Italy	–	–	4 368	2 320
	Total	37 673	25 845	58 193	36 806
2607.00.20	Lead content of lead ores and concentrates	37 673	25 845	58 163	32 809
2608.00.20	Lead content of zinc ores and concentrates	12 227	3 761	10 929	3 458
2616.10.20	Lead content of silver ores and concentrates	–	–	–	–
7801.10	Unwrought lead				
	Refined lead				
	United States	146 223	122 216	123 586	104 485
	Italy	–	–	1 604	1 120
	Japan	199	266	116	166
	Malaysia	–	–	71	61
	Other countries	722	503	–	–
	Total	147 144	122 985	125 377	105 832
7801.91	Lead, unwrought, containing by weight antimony as the principal other element	19 717	18 901	18 225	18 234
7801.99	Lead, unwrought, n.e.s.	59 371	50 999	28 775	26 603
7802.00	Lead waste and scrap				
	United States	4 016	1 320	1 632	729
	Other countries	31	39	–	–
	Total	4 047	1 359	1 632	729
7803.00	Lead bars, rods, profiles and wire				
	United States	485	1 398	308	490
	Other countries	1	1	–	–
	Total	486	1 399	308	490
7804.11	Lead sheets, strip and foil of a thickness (excluding any backing) <0.2 mm	47	117	–	–

TABLE 1 (cont'd)

Item No.		2000		2001 (p)	
		(tonnes)	($000)	(tonnes)	($000)
EXPORTS (cont'd)					
7804.19	Lead plates, sheet, strip and foil, n.e.s.	745	1 156	877	1 199
7804.20	Lead powders and flakes	6	61	89	113
7805.00	Lead tubes, pipes, and tube or pipe fittings (i.e., couplings, elbows, sleeves)	18	152	8	28
7806.00	Other articles of lead				
	United States	..	4 752	..	5 876
	Other countries	..	21	..	48
	Total	..	4 773	..	5 924
	Total exports	..	257 622	..	232 225
IMPORTS (3)					
2603.00.00.20	Lead content of copper ores and concentrates	...	...	–	–
2607.00	Lead ores and concentrates				
	United States	14 318	21 457	23 477	58 579
	Peru	26 786	43 103	28 374	39 120
	Chile	10	3 131	3 079	3 859
	Honduras	3 269	3 923	16	2 793
	Morocco	9	2 712	1 579	2 273
	Brazil	5	771	13	1 776
	Other countries	6 181	7 825	1 286	2 449
	Total	50 578	82 922	57 824	110 849
2607.00.00.20	Lead content of lead ores and concentrates	47 300	56 373	52 652	63 520
2608.00.00.20	Lead content of zinc ores and concentrates	380	529	2 376	2 153
2616.10.00.20	Lead content of silver ores and concentrates	4 359	2 113	3 186	1 767
7801.10.10	Unwrought lead	4 747	4 370	975	834
	Refined lead, pig and block				
7801.10.90	Refined lead, other	179	206	2 349	6 762
7801.91	Lead, unwrought, containing by weight antimony as the principal other element	4 177	4 241	205	236
7801.99	Lead, unwrought, other	8 431	38 157	495	1 770
7802.00	Lead waste and scrap				
	United States	65 354	14 241	54 956	11 882
	Other countries	54	40	221	102
	Total	65 408	14 281	55 177	11 984
7803.00	Lead bars, rods, profiles and wire				
	United States	1 535	2 104	842	1 354
	Other countries	11	20	275	498
	Total	1 546	2 124	1 117	1 852
7804.11	Lead sheets, strip and foil of a thickness (excluding any backing) <0.2 mm	311	387	396	429
7804.19	Lead plates, sheet, strip and foil, n.e.s.	152	230	201	294
7804.20	Lead powders and flakes	93	169	71	136

TABLE 1 (cont'd)

Item No.		2000		2001 (p)	
		(tonnes)	($000)	(tonnes)	($000)
IMPORTS (3) (cont'd)					
7805.00	Lead tubes, pipes, and tube or pipe fittings (i.e., couplings, elbows, sleeves)	25	39	18	30
7806.00	Other articles of lead				
	United States	3 913	4 554	4 049	5 416
	Japan	512	660	371	467
	Netherlands	4	4	234	327
	France	56	32	166	173
	Germany	98	91	130	122
	Other countries	94	122	161	190
	Total	4 677	5 463	5 111	6 695
	Total imports	192 363	211 604	182 153	209 311

	1999			**2000 (**p)		
	Primary	**Recycled** (5)	**Total**	**Primary**	**Recycled** (5)	**Total**
QUANTITY USED (4)						
Lead used for or in the production of:						
Antimonial lead	x	x	x	x	x	x
Batteries and battery oxides	16 741	20 024	36 765	13 286	12 915	26 201
Chemical uses: white lead, red lead, litharge, tetraethyl lead, etc.	x	x	x	x	x	x
Copper alloys: brass, bronze, etc.	14	11	25	14	13	27
Lead alloys:						
Solders	462	910	1 373	273	1 184	1 457
Others (including babbitt, type metals, etc.)	x	x	x	x	x	x
Semi-finished products:						
Pipe, sheet, traps, bends, blocks for caulking, ammunition, etc.	2 914	241	3 155	2 428	195	2 624
Other lead products	2 375	844	3 219	2 014	1 809	3 823
Total, all categories	34 108	58 449	92 557	30 146	51 219	81 365

Sources: Natural Resources Canada; Statistics Canada.
– Nil; **. .** Not available; **. . .** Amount too small to be expressed; n.e.s. Not elsewhere specified; (p) Preliminary; x Confidential.
(1) Production includes recoverable lead in ores and concentrates shipped valued at the Montréal Exchange average price for the year.
(2) Lead content of domestic ores and concentrates exported. (3) Imports from "other countries" may include re-imports from Canada.
(4) Available data, as reported by users. (5) Includes all remelt scrap lead used to make antimonial lead.
Note: Numbers may not add to totals due to rounding.

TABLE 2. CANADA, LEAD PRODUCTION, TRADE AND USE, 1975, 1980 AND 1985-2001

	Production				Exports (1)				
		Refined			In Ores and			Imports	Quantity
	All Forms (2)	Primary	Recycled	Total	Concentrates	Refined	Total	Refined	Used (3)
					(tonnes)				
1975	349 133	171 516	..	171 516	211 909	110 882	322 791	(a) 1 962	89 192
1980	251 627	162 463	72 117	234 580	147 008	126 539	273 547	(a) 2 602	106 836
1985	268 291	173 220	66 791	240 011	93 657	113 993	207 650	(a) 5 675	104 447
1986	334 342	169 934	87 746	257 680	118 373	111 831	230 204	(a) 4 247	94 680
1987	373 215	139 475	91 186	230 661	207 936	100 204	308 140	(a) 12 558	97 281
1988	351 148	179 461	88 615	268 076	200 822	179 946	380 768	15 132	88 728
1989	268 887	157 330	85 515	242 845	170 582	121 444	292 026	11 734	88 408
1990	233 372	87 180	96 465	183 645	221 566	84 007	305 573	11 781	72 203
1991	248 102	106 420	105 946	212 366	175 150	86 631	261 781	7 553	80 253
1992	339 626	151 252	101 633	252 885	190 822	131 546	322 368	8 289	92 420
1993	183 105	147 907	69 107	217 014	96 428	124 610	221 038	11 612	91 915
1994	167 584	153 035	98 605	251 640	55 923	133 203	189 126	5 119	95 764
1995	204 227	178 019	103 372	281 391	90 254	140 478	230 732	3 967	91 171
1996	241 751	192 877	117 914	310 791	154 697	159 860	314 557	4 179	93 373
1997	170 847	139 736	131 659	271 395	112 694	155 639	268 333	5 843	92 997
1998	150 019	129 750	135 737	265 487	52 250	145 358	197 608	6 458	87 466
1999	155 369	148 526	117 889	266 415	58 831	139 622	198 453	7 663	92 557
2000	143 303	159 192	125 141	284 833	50 900	148 428	199 328	7 028	81 365
2001(p)	149 429	125 185	101 637	226 822	69 092	126 652	195 744	5 109	..

Sources: Natural Resources Canada; Statistics Canada.
.. Not available; (p) Preliminary.
(a) Lead in pigs, blocks and shot.
(1) Beginning in 1988, exports and imports are based on the new Harmonized System and may not be in complete accordance with previous method of reporting. Ores and concentrates include HS classes 2603.00.20, 2607.00.20, 2608.00.20 and 2616.10.20. Refined exports include HS classes 7801.10, 7803.00, 7804.11, 7804.19 and 7804.20. Refined imports include HS classes 7801.10.10, 7801.10.90, 7803.00, 7804.11, 7804.19 and 7804.20.
(2) Recoverable lead in ores and concentrates shipped. (3) Primary and recycled in origin, as measured by a survey of users.

TABLE 3. ANNUAL AVERAGE LEAD PRICES, 1975-2001

	London Metal Exchange			
	Settlement		Three Months	
	(US$/t)	(US¢/lb)	(US$/t)	(US¢/lb)
1975	413.48	18.75	441.93	18.82
1976	451.51	20.48	469.03	21.28
1977	617.78	28.02	626.84	28.43
1978	658.87	29.89	659.07	29.90
1979	1 203.15	54.57	1 149.95	52.16
1980	909.12	41.24	911.46	41.34
1981	734.73	33.33	750.12	34.03
1982	544.08	24.68	562.53	25.52
1983	425.27	19.29	440.55	19.98
1984	444.36	20.16	445.25	20.20
1985	394.10	17.88	394.12	17.88
1986	406.89	18.46	407.26	18.47
1987	597.41	27.10	567.38	25.74
1988	655.83	29.75	635.68	28.83
1989	676.14	30.67	659.36	29.91
1990	817.85	37.10	790.82	35.87
1991	557.84	25.30	568.90	25.81
1992	540.04	24.50	553.56	25.11
1993	406.38	18.43	420.36	19.07
1994	549.01	24.90	564.10	25.59
1995	630.51	28.60	638.88	28.98
1996	773.96	35.11	771.22	34.98
1997	624.08	28.31	633.01	28.71
1998	528.42	23.97	533.29	24.19
1999	502.24	22.78	508.89	23.08
2000	454.22	20.60	468.07	21.23
2001	476.04	21.59	483.24	21.92

Source: International Lead and Zinc Study Group.

TABLE 4. LME MONTHLY AVERAGE LEAD PRICES, 2000 AND 2001

	London Metal Exchange			
	Settlement		Three Months	
	(US$/t)	(US¢/lb)	(US$/t)	(US¢/lb)
2000				
January	472.08	21.41	488.18	22.14
February	452.38	20.52	470.24	21.33
March	441.30	20.02	456.59	20.71
April	421.14	19.10	439.75	19.95
May	412.12	18.69	430.43	19.52
June	419.59	19.03	436.36	19.79
July	452.12	20.51	462.60	20.98
August	473.09	21.46	485.82	22.04
September	487.05	22.09	493.26	22.37
October	486.14	22.05	493.00	22.36
November	468.02	21.23	481.27	21.83
December	462.34	20.97	477.11	21.64
2001				
January	478.05	21.68	488.84	21.17
February	501.80	22.76	500.63	22.71
March	498.39	22.61	503.50	22.84
April	477.50	21.66	489.63	22.21
May	466.69	21.17	478.74	21.72
June	444.14	20.15	456.14	20.69
July	461.55	20.94	470.39	22.34
August	482.95	21.91	491.16	22.28
September	465.25	21.10	475.45	21.57
October	468.11	21.23	477.78	21.67
November	486.48	22.07	485.57	22.03
December	483.26	21.92	481.15	21.82

Source: International Lead and Zinc Study Group.

TABLE 5. MINE PRODUCTION OF LEAD, BY COUNTRY, 1997-2001

	1997	1998	1999	2000	2001 (p)
			(000 t)		
EUROPE					
Bulgaria	32	22	14	14	16
Greece	19	23	19	16	27
Ireland	45	36	39	57	45
Italy	12	6	5	3	3
Macedonia	28	30	27	24	24
Poland	55	60	68	53	48
Romania	17	15	18	19	19
Russia	16	13	14	14	12
Spain	23	19	29	51	50
Sweden	109	112	118	107	88
Yugoslavia	14	16	9	4	4
Other Europe	7	5	–	–	–
Total Europe	377	357	361	362	336
AFRICA					
Morocco	77	80	80	82	91
Namibia	18	14	12	12	12
South Africa	83	84	80	75	51
Other Africa	2	4	8	8	8
Total Africa	180	182	180	179	162
AMERICAS					
Canada	186	190	162	149	154
Mexico	174	166	126	138	130
Peru	262	258	271	271	289
United States	459	491	513	466	459
Other Americas	195	180	39	37	38
Total Americas	1 129	1 146	1 111	1 061	1 070
ASIA					
China	712	581	549	570	599
India	33	38	38	36	32
Iran	19	17	17	17	16
Japan	5	6	6	9	5
Kazakhstan	29	26	31	39	43
North Korea	35	30	22	18	16
Thailand	6	7	12	11	–
Turkey	10	12	14	17	16
Other Asia	17	9	5	5	4
Total Asia	858	726	694	722	731
OCEANIA					
Australia	486	584	633	650	714
Total Western World	2 130	2 246	2 261	2 245	2 246
Total World	3 030	2 995	2 978	2 973	3 003

Sources: Natural Resources Canada; International Lead and Zinc Study Group.

TABLE 6. REFINED LEAD PRODUCTION, BY COUNTRY, 1997-2001

	1997	1998	1999	2000	2001 (p)
			(000 t)		
EUROPE					
Belgium	111	92	110	119	100
Bulgaria	73	77	82	84	81
Czech Republic	22	24	25	28	28
France	283	289	273	262	230
Germany	329	353	353	387	375
Italy	212	199	215	231	222
Poland	65	64	64	56	58
Russia	52	36	44	32	58
Spain	90	94	98	120	122
Sweden	86	87	79	78	75
United Kingdom	399	370	372	338	382
Other Europe	168	167	170	147	144
Total Europe	1 890	1 852	1 885	1 882	1 875
AFRICA					
Morocco	64	62	65	67	54
South Africa	43	50	52	46	55
Other Africa	17	15	14	12	12
Total Africa	124	127	131	125	121
AMERICAS					
Brazil	53	48	52	50	47
Canada	271	266	266	284	231
Mexico	259	259	199	241	222
Peru	98	104	111	116	118
United States	1 431	1 436	1 447	1 471	1 374
Other Americas	70	69	61	68	63
Total Americas	2 182	2 182	2 136	2 230	2 055
ASIA					
China	708	757	918	1 034	1 172
India	60	66	64	67	63
Japan	297	302	293	312	302
Kazakhstan	82	92	159	208	170
Malaysia	36	29	33	32	38
North Korea	30	25	22	19	18
South Korea	182	180	190	220	211
Taiwan	36	39	45	42	40
Other Asia	171	163	164	158	170
Total Asia	1 602	1 648	1 882	2 092	2 184
OCEANIA					
Australia	229	200	271	259	271
New Zealand	6	6	6	5	5
Total Oceania	235	206	277	263	276
Total Western World	4 972	4 911	4 938	5 094	4 885
Total World	6 033	6 015	6 280	6 593	6 510

Sources: Natural Resources Canada; International Lead and Zinc Study Group.
(p) Preliminary.

TABLE 7. REFINED LEAD USE, BY COUNTRY, 1997-2001

	1997	1998	1999	2000	2001 (p)
			(000 t)		
EUROPE					
Austria	61	67	55	61	58
Belgium	60	58	51	57	40
France	256	251	260	268	265
Germany	340	356	372	390	403
Ireland	29	26	32	30	32
Italy	259	262	279	279	284
Netherlands	57	51	30	29	30
Poland	57	59	64	59	60
Russia	103	92	95	83	94
Spain	170	188	192	231	246
United Kingdom	345	310	329	328	323
Other Europe	231	251	231	244	254
Total Europe	1 968	1 971	1 990	2 059	2 089
AFRICA					
Algeria	20	21	21	21	20
Egypt	9	8	8	9	9
South Africa	63	74	67	59	59
Other Africa	29	32	33	38	36
Total Africa	121	135	129	127	124
AMERICAS					
Brazil	110	110	108	114	112
Canada	71	67	70	68	55
Mexico	148	163	179	185	180
United States	1 664	1 742	1 793	1 805	1 686
Other Americas	112	116	100	109	97
Total Americas	2 105	2 198	2 250	2 281	2 130
ASIA					
China	485	505	524	590	650
India	88	95	112	119	127
Indonesia	66	53	45	66	51
Iran	68	64	65	68	70
Japan	330	308	289	301	284
Malaysia	73	62	76	84	82
South Korea	292	236	272	303	315
Taiwan	141	132	150	145	145
Thailand	48	46	66	96	82
Other Asia	180	179	198	207	218
Total Asia	1 771	1 681	1 798	1 980	2 024
OCEANIA					
Australia	63	54	56	41	41
New Zealand	7	10	8	9	9
Total Oceania	70	64	64	50	50
Total Western World	5 259	5 256	5 411	5 603	5 436
Total World	6 034	6 049	6 231	6 497	6 418

Sources: Natural Resources Canada; International Lead and Zinc Study Group.
(p) Preliminary.

TABLE 8. WESTERN WORLD RECOVERY OF RECYCLED[1] LEAD, 1997-2001

	1997	1998	1999	2000	2001 (p)
			(000 t)		
EUROPE					
Austria	22	23	24	23	22
Belgium	27	33	77	107	100
France	159	158	150	137	132
Germany	198	192	192	216	218
Ireland	12	13	11	9	10
Italy	146	142	148	163	164
Netherlands	19	17	18	21	20
Spain	90	94	98	120	122
Sweden	43	48	44	47	44
United Kingdom	189	184	183	182	183
Other Europe	42	39	40	36	34
Total Europe	947	943	985	1 061	1 049
AFRICA					
Algeria	7	6	6	6	6
Morocco	4	4	4	2	2
South Africa	43	50	52	46	49
Other Africa	9	9	7	6	5
Total Africa	63	69	69	60	62
AMERICAS					
Brazil	53	48	52	50	47
Canada	132	136	118	125	104
Mexico	80	87	91	79	80
United States	1 089	1 099	1 097	1 130	1 098
Other Americas	65	68	60	59	54
Total Americas	1 419	1 438	1 418	1 443	1 383
ASIA					
India	17	17	19	25	19
Indonesia	30	22	18	18	18
Iran	28	26	28	28	28
Japan	154	158	168	182	175
Malaysia	36	29	33	32	38
South Korea	61	47	50	50	50
Taiwan	36	39	45	42	40
Thailand	15	19	23	24	28
Other Asia	70	69	69	70	76
Total Asia	447	426	453	471	472
OCEANIA					
Australia	25	28	32	34	34
New Zealand	6	6	6	5	5
Total Oceania	31	34	37	38	39
Total Western World	2 907	2 910	2 963	3 073	3 005

Sources: Natural Resources Canada; International Lead and Zinc Study Group.
(p) Preliminary.
(1) Refined lead and lead alloys (lead content) produced from scraps, wastes and residues.