

Mineral Industry Surveys

For information, contact:

Peter H. Kuck, Nickel Commodity Specialist
U.S. Geological Survey
989 National Center
Reston, VA 20192
Telephone: (703) 648-4965, Fax: (703) 648-7757
E-mail: pkuck@usgs.gov

Barbara J. McNair (Data)
Telephone: (703) 648-7952
Fax: (703) 648-7975
E-mail: bmcnair@usgs.gov

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

NICKEL IN AUGUST 2003

In August, reported domestic nickel consumption on a daily average basis was slightly greater than that of July, according to the U.S. Geological Survey. Average daily nickel consumption of cathode, pellets, briquets, and ferronickel for stainless steel was 51.3 metric tons per day (t/d)—14% greater than the 45.0 t/d (revised) for July, but 34% less than the 77.4 t/d for August 2002. Consumption of elemental nickel to make superalloys increased by 6% from July levels, but consumption to make corrosion-resistant nickel alloys decreased by 15%. Sales to plating companies averaged 24.1 t/d, about 17% less than the revised July sales figure of 29.0 t/d.

On August 31, U.S. consumer stocks of cathode, pellets, briquets, and powder totaled 1,490 metric tons (t)—10% greater than the 1,360 t (revised) on July 31 and slightly less than the 1,500 t (revised) reported for yearend 2002. Stocks in London Metal Exchange (LME) warehouses worldwide totaled 18,888 t—5% less than the 19,848 t on July 31. Preliminary data collected by the International Nickel Study Group indicated that, at the end of July, world nickel producers (excluding those in Austria, China, the former Yugoslavia, and the Ural area of Russia) had approximately 84,300 t of nickel in primary products in stock, of which 58,000 t, or 69%, was Class I material. Class I materials are refined products with a nickel (Ni) content of 99% or greater (electrolytic cathode, pellets, briquets, rondelles, powder, etc.). Class II materials include ferronickel, oxide sinter, and East Asian utility nickel—products with a Ni content of less than 99%.

Percentages reported in the above paragraphs may not be verifiable owing to concealment of individual company proprietary data and late reporting of data.

The United States imported 77,400 t of primary nickel in the first 7 months of 2003, 9% more than the 70,800 t for the corresponding period of 2002. Class I materials accounted for 86% of total primary imports received during the first 7 months of 2003. Trade data for August 2003 will appear in a subsequent report.

Update: Proposed copper and nickel mining in the Duluth Complex of northeastern Minnesota

Mesaba Metals project.—Several mining companies have been actively exploring the Duluth Complex of northeastern Minnesota for platinum-group elements (PGE), copper, and nickel. Exploration efforts have accelerated in recent years because of the projected growth in demand for PGE for use in fuel cells. Higher prices for nickel in 2003 also encouraged exploration.

In 2001, Teck Cominco American, Inc. optioned the Mesaba copper-nickel-PGE deposit on the western edge of the Duluth Complex. The Canadian-owned company was considering spending \$530 million to develop the very large, low-grade resource. The proposed mining, concentrating, and refining operation would produce four products—(1) a PGE concentrate, (2) copper metal sheet, (3) an impure byproduct concentrate of nickel-cobalt sulfide or hydroxide, and (4) byproduct zinc sulfide or sulfate (Iron Range Resources and Rehabilitation Agency, 2002¹). The new company was to be called Mesaba Metals, LLC.

The Mesaba deposit is about 19 kilometers (km) south of Babbitt. Amax Inc. and Bear Creek Mining Company (a subsidiary of Kennecott Copper Corp.) conducted the initial evaluation of the property during the 1970s. Longyear Mesaba Company currently holds the mineral rights to most of the property. The State of Minnesota controls many of the remaining tracts.

Geologists estimate that the Mesaba deposit contains more than 700 million metric tons (Mt) of resources that could be recovered by open pit mining. The resources average 0.46% copper (Cu) and 0.12% Ni. An additional 300 Mt of higher grade resources could be mined by underground methods if an expansion were economically justifiable (Cominco Ltd., 2001). In-pit crushing would be an option. The crushed ore would be railed 20 km to Hoyt Lakes and processed at a shuttered iron ore concentrating and pelletizing complex. The former owner of the

¹A reference that includes a section mark (§) is found in the Internet Reference Cited section.

iron ore complex, LTV Steel Mining Company, was forced to close the operation in January 2001 because of financial difficulties.

Impact analysis of the Mesaba project.—On September 23, 2003, the University of Minnesota’s Bureau of Business and Economic Research (BBER) presented the results of its economic analysis of the proposed Mesaba project. Teck Cominco and the East Range Joint Powers Board had asked the Bureau to make the impact analysis. The analysis was limited to the economic impact that the proposed project would have on local communities and did not delve into environmental or social issues. The BBER is part of the Labovitz School of Business and Economics and is located at the University of Minnesota’s Duluth campus. The BBER made the analysis using a computer model called IMPLAN (Impact Analysis for Planning).

The study area covered seven counties with a combined population of 322,000. In the model, construction work began in 2005 with 266 workers and ramped up to 1,462 workers in 2007. An additional 141 indirect jobs would be created in 2005, for a total construction employment impact in the first year of 407. By 2007, total construction and construction-generated employment would have risen to 2,239. The construction output impact would be \$30.5 million in 2005 and would ramp up to \$168.0 million in 2007 (University of Minnesota—Duluth, Bureau of Business and Economic Research, 2003).

The Bureau also analyzed the impact of day-to-day operations over the 30-year life of the mine. The model showed that an

additional 1.3 jobs would be created in the region for every one job at Mesaba Metals. An estimated 818 employees would be needed to operate Mesaba Metals, generating an additional 1,069 jobs in the region. The total number of permanent jobs created would be 1,887. About \$48.5 million per year would be injected into the region, generating an additional \$51.1 million in the process, for a total value added impact of \$99.6 million per year. The total output impact of the operation for the region would be \$421 million (University of Minnesota-Duluth, Bureau of Business and Economic Research, 2003).

References Cited

- Cominco Ltd., 2001, Cominco obtains rights to Mesaba copper-nickel deposit: Vancouver, British Columbia, Canada, Cominco Ltd. press release, June 13, 1 p.
- University of Minnesota—Duluth, Bureau of Business and Economic Research, 2003, Economic impact—Mesaba Metals copper and nickel mining in northeast Minnesota—Mesaba Metals, LLC: Duluth, MN, University of Minnesota—Duluth, Labovitz School of Business and Economics, presentation, September 23, 30 slides.

Internet Reference Cited

- Iron Range Resources and Rehabilitation Agency, 2002, Meeting notes—Minnesota Blue Ribbon Committee on Mining, *with a section entitled* Teck Cominco update, by John Key, Embassy Suites Hotel, St. Paul, MN, February 25, 2002, accessed November 12, 2003, at URL <http://www.irrb.org/mining15.php>

TABLE 1
CONSUMPTION OF NICKEL (EXCLUSIVE OF SCRAP), BY FORM AND USE¹

(Metric tons, nickel content)

Period	Cathodes, pellets, briquets, and powder		Oxide-sinter, salts, and other forms	Total	Total year to date
		Ferronickel			
2002:					
August	4,890	843	230	5,960	47,200
September	4,790	754	59	5,600	52,800
October	5,150	750	62	5,960	58,700
November	4,640	632	58	5,330	64,000
December	4,550	505	53	5,110	69,100
January-December	57,800	9,080	2,270	69,100	XX
2003:					
January	4,820	529	75	5,420	5,420
February	4,410	390	23	4,830	10,300
March	4,420	653	42	5,110	15,400
April	4,790	400	46	5,230	20,600
May	4,330	524	351	5,200	25,800
June	4,130	271	43	4,440	30,200
July	3,700	664	24	4,380	34,600
August:					
Steel:					
Stainless and heat resisting	961	628	W	1,590	13,500
Alloy (excludes stainless)	W	--	--	W	1,680
Superalloys	888	--	10	898	6,740
Copper-nickel alloys	W	--	--	W	W
Electric, magnetic, and expansion alloys	10	--	--	10	125
Other nickel & nickel alloys	W	--	W	W	W
Cast iron	W	--	--	W	W
Electroplating (sales to platers)	747	--	--	747	7,050
Chemical and chemical uses	W	--	--	W	W
Other uses	1,190	--	18	1,210	9,940
Total reported	3,790 ²	628	28	4,450	39,100
Total all companies (calc) ³	XX	XX	XX	6,840	60,100
2003: January-August	34,400	4,060	633	39,100	XX
2002: January-August	38,700	6,430	2,040	47,200	XX

W Withheld to avoid disclosing company proprietary data; included in "Other uses" category. XX Not applicable. -- Zero.

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

²Of consumption, 3,070 metric tons were consumed as cathodes and pellets, the remainder as briquets and powder.

³Figures represent calculated apparent consumption; based on the revised proportion of reported primary consumption (65.01%) to apparent primary consumption for 2001.

TABLE 2
ENDING STOCKS OF NICKEL (EXCLUSIVE OF SCRAP) HELD BY CONSUMERS, BY FORM AND USE ^{1,2}

(Metric tons, nickel content)

Period	Cathodes, pellets, briquets, and powder		Ferronickel	Oxide-sinter, salts, and other forms	Total
	2002:				
August	1,820		112	83	2,010 ^r
September	2,240 ^r		89	78	2,410 ^r
October	1,790 ^r		140	76	2,010 ^r
November	1,610 ^r		93	84	1,790 ^r
December	1,500 ^r		60	81	1,640 ^r
2003:					
January	1,360 ^r		100	44	1,500 ^r
February	1,430 ^r		54	34	1,520 ^r
March	1,230 ^r		148	43	1,420 ^r
April	1,440 ^r		49	47	1,540 ^r
May	1,430 ^r		58	41	1,530 ^r
June	1,750 ^r		101	71	1,920 ^r
July	1,360 ^r		76	56	1,490 ^r
August:					
Steel (stainless, heat resisting and alloy)	525		(3)	(3)	525
Nonferrous alloys ⁴	953		(3)	(3)	953
Foundry (cast irons)	(3)		--	--	(3)
Chemical (catalysts, ceramics, plating salt, etc.) and unspecified uses	16		111	49	176
Total	1,490		111	49	1,650

^rRevised. -- Zero.

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

²Stocks held by companies that consume nickel in more than one end-use category are credited to the major category. Stocks are subject to revisions owing to inventory adjustments.

³Included in the "Chemical and unspecified uses" category.

⁴Includes superalloys, nickel-copper and copper-nickel alloys, permanent magnet alloys, and other nickel alloys.

TABLE 3
CONSUMPTION AND ENDING STOCKS OF PURCHASED SECONDARY NICKEL, BY USE¹

(Metric tons, nickel content)

Period	Consumption			Stocks		
	Ferrous scrap ²	Nonferrous scrap ³	Total scrap	Ferrous scrap ²	Nonferrous scrap ³	Total scrap
2002:						
August	6,060	662	6,720	3,110	113	3,220
September	4,770	606	5,370	3,400	120	3,520
October	5,170	660	5,830	3,540	104	3,640
November	4,590	506	5,100	3,240	104	3,350
December	3,870	641	4,510	3,210	101	3,310
January-December	61,600	8,070	69,700	XX	XX	XX
2003:						
January	4,710	645	5,350	3,420	107	3,530
February	4,030	758	4,790	3,080	96	3,180
March	6,430	650	7,080	2,930	105	3,040
April	5,310	675	5,990	3,210	93	3,310
May	4,920	774	5,700	3,150	102	3,250
June	4,040	647	4,690	3,100	109	3,210
July	4,340	684 ^r	5,020 ^r	3,370	105	3,480
August	4,780	757	5,530	3,310	115	3,430
2003: January-August	38,600	5,590	44,100	XX	XX	XX
2002: January-August	43,200	5,660	48,900	XX	XX	XX

^rRevised. XX Not applicable.

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

²Nickel content is calculated from an average nickel content and the reported gross weight of scrap.

³Combined consumption and stocks of aluminum-base, copper-base, and nickel-base scrap.

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF NICKEL, BY COUNTRY¹

(Metric tons, nickel content)²

Period and country of origin	Cathodes pellets, and briquets	Powder and flakes	Ferro-nickel	Metal-lurgical-grade oxide	Waste and scrap	Stainless steel scrap	Chemicals	Total ³	Total year to date ⁴	Wrought nickel
2002:										
July	11,800	627	1,080	214	367	874	225	15,200	75,900	69
August	7,750	603	1,790	127	152	762	171	11,400	87,200	72
September	13,000	566	1,570	2	160	641	194	16,200	103,000	85
October	5,140	609	1,010	11	230	564	183	7,740	111,000	106
November	6,560	684	991	27	181	627	222	9,300	120,000	51
December	6,970	512	750	16	225	530	312	9,310	130,000	70
January-December	97,200	6,970	12,300	1,230	3,030	6,080	2,860	130,000	XX	878
2003:										
January	5,950	928	605	10	341	322	223	8,380	8,380	55
February	7,060	954	916	8	323	424	269	9,960	18,300	115
March	17,400	1,130	1,310	34	420	476	309	21,100	39,400	93
April	7,770	678	1,700	--	496	533	321	11,500	50,900	64
May	6,160	933	1,530	7	412	461	378	9,880	60,800	37
June	10,800	368	692	(5)	226	408	327	12,800	73,600	41
July:										
Australia	696	60	--	11	--	--	--	767	7,820	2
Brazil	--	--	--	--	--	--	--	--	748	--
Canada	1,490	95	--	--	54	228	--	1,870	26,900	--
Colombia	--	--	232	--	--	--	--	232	1,680	--
Dominican Republic	--	--	1,450	--	--	2	--	1,450	5,160	--
Finland	731	37	--	--	--	--	72	840	3,750	--
France	140	--	--	--	121	--	68	329	1,910	(5)
Germany	(5)	11	--	--	29	1	57	98	610	21
Japan	--	4	(5)	--	12	--	19	35	461	9
Mexico	--	--	--	--	5	176	2	183	1,150	--
New Caledonia	--	--	106	--	--	--	--	106	1,470	--
Norway	2,140	--	--	--	--	--	--	2,140	8,530	--
Russia	801	54	56	--	--	--	--	911	19,300	--
South Africa	--	20	--	--	--	--	--	20	78	--
Sweden	--	5	--	--	--	--	--	5	56	--
United Kingdom	226	6	--	--	126	--	25	383	1,580	(5)
Venezuela	--	--	--	--	--	2	--	2	18	--
Zimbabwe	20	--	--	--	--	--	--	20	295	--
Other	(5)	2	--	--	5	11	69	87	1,520	17
Total	6,240	294	1,840	11	352	420	312	9,470	83,000	49
2003: January-July	61,300	5,290	8,590	70	2,570	3,040	2,140	83,000	XX	452
2002: January-July	57,800	4,000	6,220	1,050	2,080	2,950	1,780	75,900	XX	496

XX Not applicable. -- Zero.

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

²The nickel contents are assumed to be as follows: metallurgical-grade oxide (77%), waste and scrap (50%), and stainless steel scrap (7.5%). The chemical category includes chlorides (25%); sulfates (22%); other salts (22%); supported catalysts (22%); and oxide, sesquioxide, and hydroxide (65%).

³Excludes wrought nickel.

⁴May include revisions for prior months.

⁵Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 5
U.S. EXPORTS OF NICKEL, BY COUNTRY¹

(Metric tons, nickel content)²

Period and country of destination	Cathodes pellets, and briquets	Powder and flakes	Ferro-nickel	Metal-lurgical-grade oxide	Waste and scrap	Stainless steel scrap	Chemicals	Total ³	Total year to date	Wrought nickel
2002:										
July	131	139	1	9	1,560	2,040	204	4,080	30,600	200
August	76	222	1	42	826	1,510	168	2,840	33,500	230
September	164	122	2	55	718	1,660	153	2,880	36,300	249
October	113	99	8	34	1,010	1,840	167	3,270 ^r	39,600	221
November	64	95	8	6	830	1,470	184	2,650	42,300	181
December	75	65	7	3	983	2,080	423	3,630	45,900	175
January-December	1,740	1,480	46	685	13,700	25,700	2,580 ^r	45,900	XX	2,570
2003:										
January	92	58	10	11	853	3,060	267	4,350	4,350	586
February	24	84	13	7	948	5,050	261	6,380	10,700	462
March	46	113	5	13	770	5,150	243	6,340	17,100	629
April	78	86	8	19	894	2,880	466	4,430	21,500	149
May	30	59	11	11	836	2,380	379	3,710	25,200	147 ^r
June	90	47	29	33	516	2,310	276	3,300	28,500	143
July:										
Australia	--	(4)	--	--	13	--	(4)	13	44	--
Belgium	--	8	--	--	--	11	1	20	190	(4)
Canada	20	14	--	--	340	208	122	704	6,870	4
China	--	(4)	15	--	--	473	--	488	3,460	--
Germany	--	9	--	--	23	4	1	37	230	(4)
India	--	--	--	--	--	152	--	152	651	--
Italy	--	(4)	--	--	--	--	--	(4)	494	1
Japan	--	13	--	1	48	20	17	99	948	5
Korea, Republic of	--	4	2	--	--	1,140	134	1,280	3,530	(4)
Mexico	42	2	--	1	--	(4)	12	57	421	58
Netherlands	--	1	--	--	18	266	16	301	1,090	(4)
South Africa	--	--	--	--	9	--	(4)	9	65	(4)
Spain	--	--	--	--	--	602	--	602	2,580	--
Sweden	--	--	--	--	31	10	(4)	41	279	--
Taiwan	2	--	--	--	9	473	--	484	6,980	1
United Kingdom	17	12	10	--	15	29	4	87	841	30
Other	6	32	--	--	4	180	86	308	4,520	49
Total	87	95	27	2	510	3,570	393	4,690	33,200	148
2003: January-July	447	542	103	95	5,330	24,400	2,280	33,200	XX	2,260
2002: January-July	1,250	872	21	545	9,320	17,100	1,480	30,600	XX	1,520

¹Revised. XX Not applicable. -- Zero.

²Data are rounded to no more than three significant digits; may not add to totals shown.

³The nickel contents are assumed to be as follows: metallurgical-grade oxide (77%), waste and scrap (50%), and stainless steel scrap (7.5%). The chemical category includes chlorides (25%); sulfates (22%); other salts (22%); supported catalysts (22%); and oxide, sesquioxide, and hydroxide (65%).

⁴Excludes wrought nickel.

⁵Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF NICKEL ALLOYS, BY COUNTRY¹

(Metric tons, gross weight)

Period and country of origin	Unwrought alloyed ingot	Bars, rods and profiles	Wire	Plates and sheets	Foil	Tubes and pipes	Other alloyed articles	Total	Total year to date
2002:									
July	133	259	624	361	31	124	196	1,730	11,800
August	170	217	360	356	34	180	161	1,480	13,200
September	64	153	412	207	35	243	131	1,250	14,500
October	180	150	400	212	28	106	117	1,190	15,700
November	231	279	324	348	28	194	149	1,550	17,200
December	170	192	510	353	21	147	153	1,550	18,800
January-December	2,540	2,640	5,230	3,520	196	2,850	1,810	18,800	XX
2003:									
January	54	252	427	332	(2)	133	91	1,290	1,290
February	167	158	356	264	11	93	140	1,190	2,480
March	129	209	600	308	(2)	148	163	1,560	4,040
April	184	245	697	316	6	204	266	1,920	5,950
May	181	204	504	328	7	206	195	1,630	7,580
June	150	156	579	244	35	292	102	1,560	9,140
July:									
Australia	86	--	--	--	--	--	--	86	420
Belgium	--	--	(2)	--	--	(2)	--	(2)	112
Canada	--	--	9	--	--	7	4	20	118
China	--	--	19	1	--	--	20	40	190
France	--	--	89	--	--	10	33	132	918
Germany	3	82	176	153	29	158	1	602	3,780
Italy	--	114	5	--	--	--	1	120	673
Japan	(2)	--	6	(2)	--	101	2	109	389
Mexico	--	--	--	--	--	--	65	65	547
Netherlands	--	--	--	--	--	--	15	15	114
South Africa	20	--	--	--	--	--	--	20	215
Sweden	--	45	225	6	--	17	--	293	1,630
United Kingdom	21	22	5	117	1	11	11	188	1,440
Other	--	3	20	1	(2)	1	16	40	317
Total	130	266	554	278	30	305	168	1,730	10,900
2003: January-July	996	1,490	3,720	2,070	90	1,380	1,130	10,900	XX
2002: January-July	1,730	1,640	3,230	2,040	49	1,980	1,100	11,800	XX

XX Not applicable. -- Zero.

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

²Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 7
U.S. EXPORTS OF NICKEL ALLOYS, BY COUNTRY¹

(Metric tons, gross weight)

Period and country of destination	Unwrought alloyed ingot	Bars, rods and profiles	Wire	Plates and sheets	Foil	Tubes and pipes	Other alloyed articles	Total	Total year to date
2002:									
July	437	518	94	392	8	144	307	1,900	17,400
August	951	527	142	545	15	128	426	2,730	20,200
September	788	568	174	733	4	133	333	2,730	22,900
October	290	507	146	717	3	187	320	2,170	25,100
November	739	418	174	546	10	147	295	2,330	27,400
December	415	316	78	302	14	115	426	1,660	29,100
January-December	8,720	6,020	1,520	6,590	169	1,770	4,290	29,100	XX
2003:									
January	729	375	138	236	12	231	192	1,910	1,910
February	1,160	419	93	215	38	168	374	2,460	4,380
March	226	615	113	399	214	150	307	2,020	6,400
April	600	743	158	315	14	182	292	2,300	8,700
May	857	950	82	295	44	184	256	2,670	11,400
June	180	980	94	521	21	163	280	2,240	13,600
July:									
Australia	--	--	(2)	2	--	(2)	(2)	2	26
Belgium	5	41	2	9	--	--	(2)	57	631
Canada	8	37	18	13	15	36	28	155	1,590
France	146	31	8	14	(2)	1	2	202	1,590
Germany	523	40	4	12	(2)	7	6	592	3,400
India	--	5	(2)	2	--	--	--	7	88
Ireland	(2)	--	(2)	1	--	--	(2)	1	12
Italy	18	1	(2)	3	--	9	1	32	270
Japan	1	37	3	28	3	(2)	3	75	791
Korea, Republic of	2	7	2	9	(2)	1	1	22	232
Mexico	--	3	12	14	1	60	99	189	1,960
Netherlands	--	6	(2)	1	--	(2)	21	28	100
Singapore	1	11	2	2	--	(2)	(2)	16	71
Spain	2	--	1	3	(2)	3	(2)	9	103
Sweden	--	1	--	2	--	--	(2)	3	45
Switzerland	19	1	2	6	1	11	--	40	314
Taiwan	(2)	(2)	--	6	--	3	2	11	250
United Kingdom	19	288	4	71	(2)	3	2	387	2,540
Other	6	44	14	25	5	129	51	274	1,700
Total	750	553	72	223	25	263	216	2,100	15,700
2003: January-July	4,500	4,640	750	2,200	368	1,340	1,920	15,700	XX
2002: January-July	5,540	3,680	808	3,750	123	1,060	2,490	17,400	XX

XX Not applicable. -- Zero.

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

²Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 8
NICKEL CONSUMPTION IN CAST AND WROUGHT PRODUCTS

	Percent	
	Wrought	Cast
<u>August 2003:</u>		
Stainless and heat resisting steels	66	34
Alloy steels	99	1
Superalloys	88	12
Copper-nickel alloys	99	1
Other nickel-base alloys	100	(1)

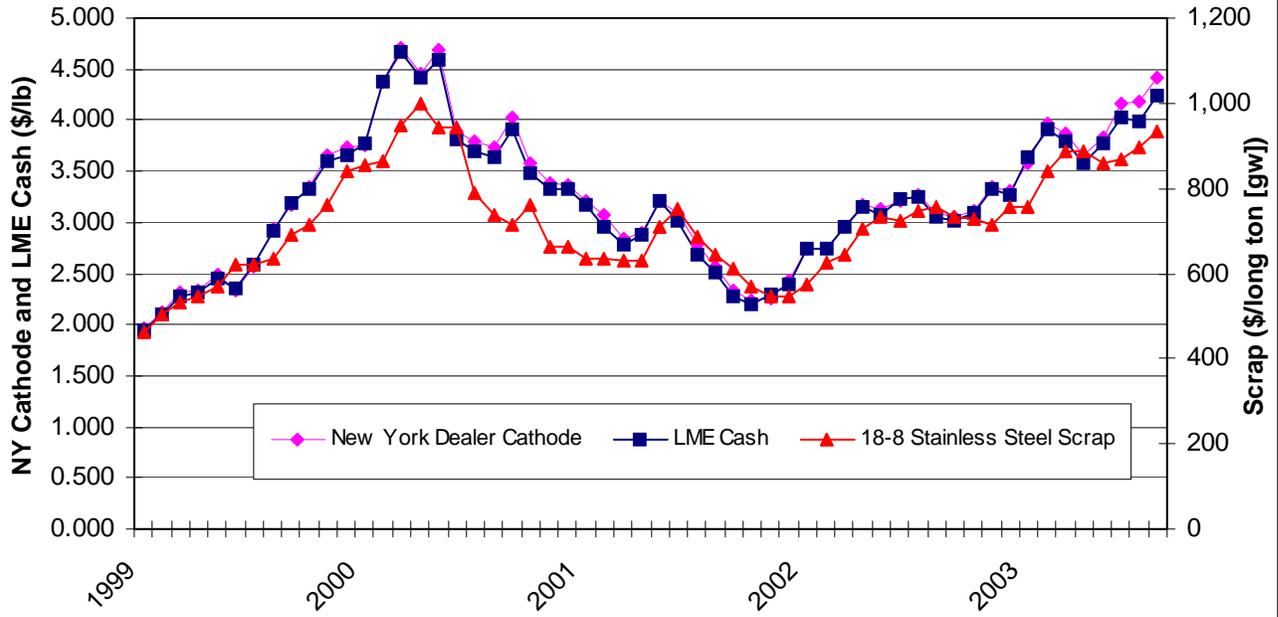
¹Less than 1/2 unit.

TABLE 9
NICKEL PRICES

Date	Platts Metals Week				American
	Cathode NY Dealer \$/lb.	LME Cash \$/t	LME Cash \$/lb.	18/8 Stainless steel scrap Free market \$/long ton (gw)	Metal Market, 18/8 Stainless steel scrap Pittsburgh \$/long ton (gw)
<u>2002:</u>					
<u>Average for month of:</u>					
August	3.094	6,717.143	3.047	XX	755
September	3.053	6,640.238	3.012	XX	733
October	3.118	6,804.457	3.086	XX	729
November	3.349	7,313.929	3.318	XX	716
December	3.308	7,193.158	3.263	XX	755
Yearly average	3.095	6,771.751	3.072	XX	703
<u>2003:</u>					
<u>Average for week ending:</u>					
August 1	4.42-4.52	9,279.000	4.209	890-920	900-910
August 8	4.40-4.49	9,203.500	4.175	900-930	930-940
August 15	4.40-4.49	9,156.500	4.153	900-930	930-940
August 22	4.47-4.70	9,606.500	4.357	910-930	930-940
August 29	4.40-4.71	9,463.750	4.293	910-930	930-940
September 5	4.55-4.77	9,795.000	4.443	965-985	980-990
September 12	4.65-4.69	9,814.500	4.452	965-985	980-990
September 19	4.68-4.77	9,920.500	4.500	965-985	980-990
September 26	4.79-4.88	10,251.500	4.650	980-990	980-990
<u>Average for month of:</u>					
January	3.580	8,026.020	3.641	XX	757
February	3.978	8,623.000	3.911	840	840
March	3.865	8,378.810	3.801	886	885
April	3.655	7,910.125	3.588	885	885
May	3.826	8,330.625	3.779	839	861
June	4.155	8,874.762	4.026	874	867
July	4.178	8,797.391	3.990	893	897
August	4.418	9,351.375	4.242	918	935
September	4.668	9,965.341	4.520	978	985

XX Not applicable.

1999-2003 AVERAGE MONTHLY PRICES (Derived from Metals Week and American Metal Market quotations)



1999-2003 STOCKS

