

Mineral Industry Surveys

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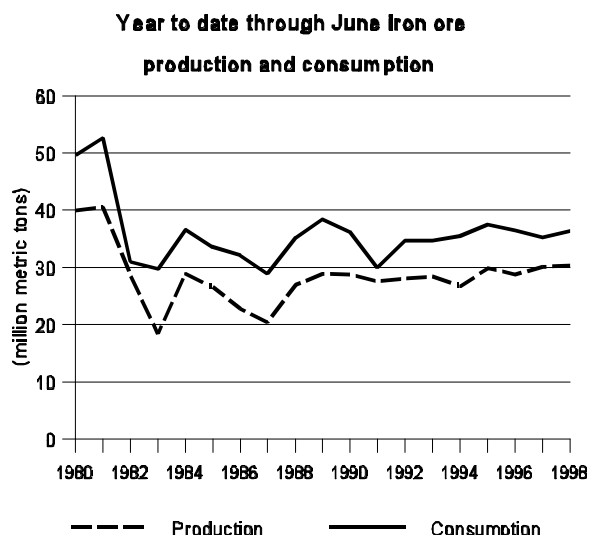
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IRON ORE IN JULY 1998

U.S. mine production of iron ore in July 1998 was 3.6% lower than that of June 1998, according to the U.S. Geological Survey. Shipments increased by 1.4% while stocks decreased by 9.6%. Consumption and trade data for July 1998 will be included in a subsequent issue.

Year-to-date through June iron ore production of 30.3 million metric tons (Mt) was at its highest level since 1981, while consumption of 36.3 Mt was at its highest level since 1996 (see graph below).



News of the Mesabi Iron Range

Fires at two Mesabi operations.—On June 29, EVTAC Mining Co. experienced a major fire at its taconite processing plant in Forbes, MN, that destroyed its No. 3 conveyor, which carries crude ore from a stockpile; damaged the No. 1 conveyor, which transports crude ore from EVTAC's mine; and caused extensive electrical and structural damage to the fine-crusher building. A broken idler that heated up and ignited a belt in the conveyor is suspected as the fire's cause. Parts of the plant are not expected to be repaired until late

September or October. Replacing the damaged belts, electrical wiring, idlers, and support structure is expected to cost millions of dollars. The taconite plant had casualty insurance. In the wake of the fire, EVTAC will install fire control systems along all of its major conveyor lines. Company officials say improvements at the plant will continue to be made, including installation of a new \$7.5 million distributive control system beginning later this year (Bloomquist, Lee, reporter, Duluth News-Tribune, EVTAC back on track after devastating fire—Plant hopes for financial recovery: accessed July 24, 1998, at URL <http://www.duluthnews.com/>). On July 14, 1998, less than 3 weeks after the EVTAC incident, fire damaged a conveyor belt at another Iron Range taconite plant. This fire, at the National Steel Pellet Co. taconite processing plant near Keewatin, caused only minimal structural damage. There were no injuries at either plant (Bloomquist, Lee, reporter, Duluth News-Tribune, National Steel latest fire victim—Plant's production won't be slowed: accessed on July 17, 1998 at URL <http://www.duluthnews.com/>).

Inland Steel purchased by Ispat.—The Inland Steel Co. of Chicago, owner of Inland Steel Mining Co., Virginia, MN, was purchased by Ispat International NV, of Rotterdam, the Netherlands. The \$1.4 billion acquisition was completed on July 16, 1998 and makes Ispat the seventh largest steel company in the world (Skilling's Mining Review, 1998).

New trucks for Northshore.—Northshore Mining Co. has bought five new ore hauling trucks for its Peter Mitchell Mine in Babbitt, MN, on the eastern end of the Mesabi Range. The \$8.6 million purchase is part of Northshore's efforts to maintain its position as one of North America's lowest cost iron ore producers. The trucks will replace a fleet of 14 side-dump trucks that have been in use for more than 30 years. The old trucks carried only 100 tons each and, because of their age, were unavailable about 30% of the time. The 5 new trucks will be able to haul the same quantity of crude ore and overburden as the 14 old ones with only about 5% down time. Moreover, crude ore production costs are expected to be cut by 22 cents per ton. Because the old trucks dumped their loads from the side and the new trucks are rear-dump models, Northshore is renovating the crude ore crusher's loading pocket to accommodate

the new trucks (Bloomquist, Lee, reporter, Duluth News-Tribune, Northshore takes step forward—Taconite producer invests \$10.3 million in new truck fleet, coarse crusher: accessed July 24, 1998, at URL <http://www.duluthnews.com/>).

This purchase is counter to the trend elsewhere on the Mesabi Range in the sense that Northshore bought 205-ton trucks rather than 240-ton trucks as many of the other iron ore producers had. The larger trucks offer economy of scale benefits, but were not considered suitable for the Peter Mitchell Mine because Northshore has less material (overburden and ore) to move than other iron ore operations of similar capacity. If the company had chosen the 240-ton trucks, they would have required only three trucks instead of the five 205-ton trucks. If any one of the three larger trucks were disabled, it would have had a large negative effect on mining operations as compared to having one of five smaller trucks disabled. The company is adding a 190-ton truck as a spare. Northshore has less overburden to move because much of it had been stripped by their predecessor at the Peter Mitchell Mine, Reserve Mining Co. The company has less ore to move because they are mining the highest grade ore on the Mesabi Range and less is required to make pellets (Oral communication, Northshore Mining Co.).

CVRD Expansion plans.—Cia. Vale do Rio Doce (CVRD), Brazil, plans to build a 6 million metric-ton-per-year (Mt/yr) pellet plant and increase production capacity at its Brucutu Mine from 2 to 24 Mt/yr. The new pellet plant will use ore from Carajás and be located at the port of Ponta da Madeira Marine Terminal near Sao Luis in the northern State of Maranhao. The port is the terminus of the railroad line that begins at Carajás. The plant is expected to begin operation by the end of 2000 and be at full production in early 2001. The \$350 million project is expected to produce primarily pellets for the direct reduction market.

This will be CVRD's first pellet plant in its northern system. CVRD has two systems, the Northern and the Southern, each with its own mines, port, and connecting railroad. In the Southern system, the mines are in Minas Gerais State and the port is near Tubarao, where CVRD manages seven pellet plants. Two are wholly owned by CVRD; the others are joint ventures. The seventh, named Kobrasco, is a 50-50 joint venture between CVRD and Pohang Iron and Steel Co. (Posco) of Korea. This 4 Mt/yr plant is expected to begin operations in the last week in September or the first week in October (Metal Bulletin, 1998b).

The mine expansion will take place in CVRD's Southern system. The \$247 million project, which will consist of building and expanding a beneficiation plant at Brucutu, is to proceed in three stages. CVRD operated the mine from the early 1980's until 1997, at which time production was 2 Mt/yr. CVRD had been hauling ore by truck from the Brucutu Mine to the nearest railway, a distance of about 25 kilometers (15.5 miles). The company suspended

production while a railway spur was built from the mine to the main rail line. The first stage, an investment of \$82 million, will hike production to 6 Mt/yr by July 2000. The output from this stage will be 3.4 Mt/yr of pellet feed and 2.6 Mt/yr of sinter feed. The pellet feed will supply the Tubarao pellet plants. The second stage, with an investment of \$85 million, is to raise capacity to 12 Mt/yr by July 2003, while the third stage, with a further investment of \$80 million will increase output to 24 Mt/yr by July 2015. The production capacity increase will offset the decrease in production in CVRD's other mines in Minas Gerais (Kepp, 1998) (Written communication, CVRD 1998).

ABM to take over Sydvaranger operation.—Australian Bulk Minerals (ABM) has decided to exercise its option to take over the Sydvaranger mine and pellet plant in northern Norway. In 1996, the Norwegian Parliament voted to close Sydvaranger, the world's most northerly iron mine. To remain in operation, the mine would have had to convert from open pit to underground mining, requiring further Government subsidies. The mine had been operating at a loss since the mid-1970's. Before beginning operations at the iron ore mine at Björnevatn and the pellet plant near Kikenes, ABM must obtain all the approvals necessary for a resumption of activity before the end of 1998. ABM plans to increase production from the 1-1.5 Mt/yr rate in recent years to 2.5 Mt/yr. The company would also concentrate on the low-cost blast furnace pellet market, rather than the specialty markets that Sydvaranger had developed. ABM is the company that restarted the Savage River iron ore pelletizing operation in Tasmania in 1997 (Metal Bulletin, 1996, 1998a).

Wabush to install screens.—Wabush Mines, Wabush, NF, plans to install a screening system in its pellet plant to reduce the fines that are generated when pellets are moved. Several of Wabush's customers have installed pulverized coal injection systems in their blast furnaces to reduce the quantity of coke used. These systems require a high degree of permeability in the blast furnace. Screening the pellets before they are shipped reduces the quantity of fines that would otherwise reduce the permeability (Metal Bulletin, 1998c).

References Cited

- Kepp, Michael, 1998, CVRD planning \$247M expansion: American Metal Market, v. 106, no. 103, August 25, p. 4.
- Metal Bulletin, 1996, Sydvaranger Mine heads underground: Metal Bulletin, no. 8091, p. 202.
- 1998a, ABM agrees to take over Kirkenes pelletizer: Metal Bulletin, no. 8276, p. 19.
- 1998b, CVRD goes ahead with Carajás pellet project: Metal Bulletin, no. 8296, p. 19.
- 1998c, Wabush invests to reduce fines content: Metal Bulletin, no. 8267, April 8, p. 23.
- Skills Mining Review, 1998, Ispat International completes its acquisition of Inland Steel: Skills Mining Review, v. 87, no. 30, July 25, p. 44.

TABLE 1
U.S. PRODUCTION AND SHIPMENTS OF IRON ORE, BY DISTRICTS 1/
(Exclusive of ore containing 5% or more manganese)

(Thousand metric tons)

Period	Lake Superior		Other U.S.		Total 2/	
	Monthly	Year to date	Monthly	Year to date	Monthly	Year to date
Production:						
1997:						
July	5,109	35,097	24	161	5,133	35,259
August	5,593	40,690	25	186	5,618	40,877
September	5,511	46,201	25	211	5,536	46,413
October	5,705	51,906	31	242	5,736	52,149
November	5,289	57,195	26	268	5,316	57,464
December	5,285	62,480	W	W	5,285	62,750
1998:						
January	5,000	5,000	W	W	5,000	5,000
February	4,496	9,496	W	W	4,496	9,496
March	4,736	14,232	W	W	4,736	14,232
April	4,900	19,132	W	W	4,900	19,132
May	5,506	24,637	W	W	5,506	24,637
June	5,636	30,273	W	W	5,636	30,273
July	5,433	35,706	W	W	5,433	35,706
Shipments:						
1997:						
July	6,287	30,807	21	155	6,308	30,964
August	6,657	37,464	26	181	6,683	37,646
September	6,351	43,815	27	208	6,378	44,024
October	6,057	49,872	32	240	6,089	50,113
November	6,189	56,061	27	267	6,215	56,329
December	6,408	62,469	W	W	6,408	62,737
1998:						
January	2,822	2,822	W	W	2,822	2,822
February	900	3,722	W	W	900	3,722
March	3,053	6,775	W	W	3,053	6,775
April	6,401	13,176	W	W	6,401	13,176
May	6,508	19,683	W	W	6,508	19,683
June	6,302	25,986	W	W	6,302	25,986
July	6,392	32,378	W	W	6,392	32,378

W Withheld to avoid disclosing company proprietary data.

1/ Excludes byproduct ore.

2/ Data may not add to totals shown because of independent rounding.

TABLE 2
U.S. PRODUCTION, SHIPMENTS AND STOCKS OF IRON ORE IN JULY 1/
(Exclusive of ore containing 5% or more manganese)

(Thousand metric tons)

District	Production		Shipments 2/		Stocks 3/	
	1998	1997	1998	1997	1998	1997
Lake Superior:						
Michigan	1,449	755	1,667	1,616	2,784	2,470
Minnesota	3,984	4,354	4,725	4,671	5,287	6,472
Other U.S.	W	24	W	21	W	112
Total 4/	5,433	5,133	6,392	6,308	8,071	9,055

W Withheld to avoid disclosing company proprietary data.

1/ Excludes byproduct ore.

2/ Includes rail and vessel.

3/ Includes mines, plants, and loading docks.

4/ Data may not add to totals shown because of independent rounding.

TABLE 3
CANADA: SHIPMENTS OF IRON ORE

(Thousand dry metric tons)

Period	Newfoundland	Quebec	Ontario	British Columbia	Total 1/
1997:					
June	2,464	1,544	--	9	4,017
July	2,093	1,504	--	11	3,608
August	2,565	1,146	19	8	3,738
September	2,553	1,229	54	10	3,846
October	1,783	1,692	112	8	3,597
November	2,194	1,255	112	7	3,567
December	1,941	1,078	118	9	3,146
Year total	21,848	13,914	799	102	36,663
1998:					
January	1,400	989	111	8	2,509
February	1,036	1,090	112	9	2,247
March	727	806	108	7	1,648
April	2,221	1,054	100	10	3,386
May	2,327	1,585	102	12	4,026
June	2,734	932	102	8	3,777
July	NA	NA	NA	NA	NA

NA Not available.

1/ Data may not add to totals shown because of independent rounding.

Source: Natural Resources Canada.

TABLE 4
CONSUMPTION AND STOCKS OF IRON ORE AND AGGLOMERATES AND
BLAST FURNACE PRODUCTION OF HOT METAL AT U.S. IRON AND STEEL PLANTS

(Thousand metric tons)

	Consumption of ores and agglomerates			
	June		January-June	
	1998	1997	1998	1997
Consumption by source				
United States ores	4,576	4,576	29,873	28,438
Canadian ores	537	583	3,340	3,377
Foreign ores	470	502	3,090	3,368
Total 1/	5,585	5,662	36,302	35,184
Consumption by process				
Blast furnaces	5,095	5,091	32,938	31,766
Steel furnaces	6	7	37	49
Agglomerating plants 2/	483	559	3,307	3,327
Miscellaneous 3/	1	5	20	42
Total 1/	5,585	5,662	36,302	35,184
	Stocks of ores and agglomerates			
	June 30			
	1998	1997		
Storage point				
Furnace yards	14,655	13,566		
Receiving/transfer docks	2,513	1,824		
Total consumer	17,168	15,390		
	Blast furnace production of hot metal			
	June		January-June	
	1998	1997	1998	1997
Hot metal and pig iron produced in blast furnaces	3,900	4,039	25,315	24,472
No. of blast furnaces operating on the last day of the month	39	36	XX	XX

XX Not applicable.

1/ Data may not add to totals shown because of independent rounding.

2/ Iron ore and iron ore concentrates consumed in agglomerating plants not located at the mine site.

3/ Sold to nonreporting companies or used for purposes not listed.

4/ May include revisions to prior months' data.

Sources: American Iron Ore Association (consumption of iron ore) and American Iron and Steel Institute (production of hot metal and pig iron).

TABLE 5
U.S. EXPORTS OF IRON ORE AND AGGLOMERATES, BY COUNTRY
OF DESTINATION AND TYPE

(Thousand metric tons)

Country of destination and type	1998				
	1st quarter	2nd quarter	April	May	June
Canada	897	1,791	665	726	400
Mexico	(1/)	(1/)	(1/)	(1/)	(1/)
Other	1	6	(1/)	6	(1/)
Total 2/	898	1,799	666	732	400
Pellets	892	1,763	665	724	374
Other	7	36	2	8	26
Total 2/	898	1,799	666	732	400

1/ Less than 1/2 unit.

2/ Data may not add to totals shown because of independent rounding.

Source: Bureau of the Census.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF IRON ORE AND AGGLOMERATES,
BY COUNTRY AND TYPE
(Exclusive of ore containing 20% or more manganese)

Country of origin and type of product	1998					1997
	June		January-June			January-June
	Thousand metric tons	Value 1/ (thousand dollars)	Thousand metric tons	Value 1/ (thousand dollars)	Value 1/ (dollars per ton)	Thousand metric tons
Australia	--	--	273	2,162	7.92	408
Brazil	404	11,689	2,988	87,701	29.35	2,514
Canada	766	26,300	3,450	118,568	34.37	3,514
Chile	--	--	--	--	--	126
China	--	--	--	--	--	40
Finland	--	--	4	186	46.50	4
Indonesia	--	--	--	--	--	(2/)
Japan	--	--	55	1,916	34.84	--
Madagascar	--	--	(2/)	2	11.04	--
Mexico	1	25	6	104	17.33	10
Peru	--	--	95	1,234	12.99	183
South Africa	--	--	--	--	--	4
Sweden	--	--	108	4,198	38.87	--
Venezuela	126	4,455	653	27,752	42.50	948
Zaire	--	--	--	--	--	(2/)
Total 3/	1,297	42,468	7,631	243,823	31.95 4/	7,751
Concentrates	139	2,426	215	3,807	17.71	428
Coarse ores	--	--	178	5,892	33.10	820
Fine ores	72	1,637	1,317	24,252	18.41	1,679
Pellets	886	31,220	5,299	189,172	35.70	4,357
Briquettes	126	4,455	186	10,509	56.50	--
Other agglomerates	75	2,731	432	10,001	23.15	464
Roasted pyrites	--	--	4	190	47.50	4
Total 3/	1,297	42,468	7,631	243,823	31.95 4/	7,751

1/ Customs value. Excludes international freight, insurance, and other c.i.f. charges.

2/ Less than 1/2 unit.

3/ Data may not add to totals shown because of independent rounding.

4/ Weighted average calculated by dividing total value by total tonnage.

Source: Bureau of the Census.

TABLE 7
U.S. IMPORTS FOR CONSUMPTION OF IRON ORE AND AGGLOMERATES IN JUNE 1998
(Exclusive of ore containing 20% or more manganese)

(Thousand metric tons)

Country of origin	Type of product						Total 1/
	Concentrates	Coarse ores	Fine ores	Pellets	Briquettes and other agglomerates	Roasted pyrites	
Brazil	89	--	72	170	73	--	404
Canada	50	--	--	716	1	--	767
Mexico	--	--	--	--	1	--	1
Venezuela	--	--	--	--	126	--	126
Total 1/	139	--	72	886	201	--	1,297

1/ Data may not add to totals shown because of independent rounding.

Source: Bureau of the Census.

TABLE 8
U.S. IMPORTS FOR CONSUMPTION OF PELLETS, BY COUNTRY

Country of origin	1998					1997
	June		January-June			January-June
	Thousand metric tons	Value 1/ (thousand dollars)	Thousand metric tons	Value 1/ (thousand dollars)	Value 1/ (dollars per ton)	Thousand metric tons
Brazil	170	5,846	1,792	62,578	34.92	935
Canada	716	25,374	3,152	113,151	35.88	3,251
Japan	--	--	(2/)	3	78.95	--
Peru	--	--	7	99	14.14	--
Sweden	--	--	96	3,761	39.18	--
Venezuela	--	--	250	9,580	38.32	171
Total 3/	886	31,220	5,299	189,172	35.70 4/	4,357

1/ Customs value. Excludes international freight, insurance, and other c.i.f. charges.

2/ Less than 1/2 unit.

3/ Data may not add to totals shown because of independent rounding.

4/ Weighted average calculated by dividing total value by total tonnage.

Source: Bureau of the Census.

TABLE 9
U.S. IMPORTS FOR CONSUMPTION OF IRON ORE AND
AGGLOMERATES, BY CUSTOMS DISTRICT
(Exclusive of ore containing 20% or more manganese)

(Thousand metric tons)

Customs district	June	January-June	
	1998	1998	1997
Baltimore, MD (13)	--	1,674	2,126
Buffalo, NY (09)	--	11	--
Charleston, SC (16)	97	271	306
Chicago, IL (39)	273	639	811
Cleveland, OH (41)	77	319	208
Detroit, MI (38)	206	814	709
Houston - Galveston, TX (53)	26	49	42
Laredo, TX (23)	13	13	--
Los Angeles, CA (27)	--	(1/)	(1/)
Miami, FL (52)	--	(1/)	--
Mobile, AL (19)	407	2,058	2,016
New Orleans, LA (20)	197	1,680	797
Nogales, AZ (26)	1	6	10
Ogdensburg, NY (07)	--	(1/)	(1/)
Philadelphia, PA (11)	--	97	726
San Francisco, CA (28)	--	(1/)	(1/)
Savannah, GA (17)	--	--	(1/)
Total 2/	1,297	7,631	7,751

1/ Less than 1/2 unit.

2/ Data may not add to totals shown because of independent rounding.

Source: Bureau of the Census.

TABLE 10
U.S. IMPORTS FOR CONSUMPTION OF PELLETS, BY CUSTOMS DISTRICT

(Thousand metric tons)

Customs district	June	January-June	
	1998	1998	1997
Baltimore, MD (13)	--	602	786
Charleston, SC (16)	24	173	163
Chicago, IL (39)	159	449	384
Cleveland, OH (41)	52	267	156
Detroit, MI (38)	206	814	709
Houston - Galveston, TX (53)	26	49	42
Laredo, TX (23)	13	13	--
Mobile, AL (19)	407	1,810	1,606
New Orleans, LA (20)	--	1,029	280
Philadelphia, PA (11)	--	94	231
San Francisco, CA (28)	--	(1/)	--
Total 2/	886	5,299	4,357

1/ Less than 1/2 unit.

2/ Data may not add to totals shown because of independent rounding.

Source: Bureau of the Census.