





# PEAT INDUSTRY 1964



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# PEAT INDUSTRY

# 1964

The Peat Industry is part of Other Non-metal Mines—Industry 079 of the Standard Industrial Classification Manual, Catalogue No. 12-501.

During 1964 the Canadian producers of peat moss shipped 255,475 short tons valued at \$8,399,648. Comparable data for the preceding year was 248,311 tons valued at \$8,715,228. These valuations do not include the cost of containers. There were no shipments of peat fuel during recent years.

Peat moss, the dead fibrous moss produced from peat bogs, is valuable because of its high absorbent capacity for liquids and gases, high resistance to decomposition, and low heat conduclivity. Because of these properties it makes an excellent stable litter for horses and cattle, and it is especially valuable for poultry litter. Although not a fertilizer in itself, it is a good soil condi-Honer as it loosens up a clay soil, helps to maintuin the moisture in a light sandy soil, and adds valuable organic matter to depleted soils. The main use of peat moss is horticultural, for better lawns, more luxuriant flowers, and stronger plants and shrubs are obtainable through its addition to the soil. It makes excellent packing material for the shipment of perishable fruits, vegetables and cut flowers. It is useful for making compost and as a diluent and carrier in the application of artificial fertilizers.

Technical information on peat moss appears in the Mines Branch Information Circular IC 104 and Technical Bulletin TB 22 published by the Department of Energy, Mines and Resources, Ottawa.

Data presented in this report under the heading of The Peat Industry (Tables 1-8) reflect the full implementation of the revised Standard Industrial Classification (S.I.C.) and the New Establishment Concept including an extension of the latter to cover total activities of mining establishments (see Explanatory Notes section of this report). Commodity statistics reflecting total production from all sources, world figures on production, trade data, etc. are presented along the same general lines as in the earlier issues of this report.

The combination of improvements in internal procedures with the introduction of the final stage of the establishment concept in the annual Census of Mining produced changes which, for some industries, required major adjustments in industry statistical data—see Explanatory Notes. However, in the case of the industry under review in this report, the changes were relatively minor as evidenced in the comparative series of statistics presented in Tables 1 and 2. The reduction in the number of establishments which is indicated is the result of the exclusion of non-producers. These latter are no longer being included as establishments under the new definition.

# SYMBOLS

The following standard symbols are used in Dominion Bureau of Statistics publications:

- .. figures not available.
- ... figures not appropriate or not applicable.
- nil or zero.
- amount too small to be expressed.
- p preliminary figures.
- r revised figures.
- ${\bf x}$  confidential to meet secrecy requirements of the Statistics Act.

PEAT INDUSTRY M+5

TABLE 1. Principal Statistics of the Peat Industry, 1957-63

Basis: Revised Standard Industrial Classification

Your	Establish- ments	Employees	Salaries and wages	Cost of fuel and electricity at works	Cost of materials and supplies	Vaiue of production	Value added¹
	пип	per			dollars		
1957 1958 1959 1960 1961 1962 1963	34 37 37 40 42 49 56	1,168 1,447 1,333 1,172 1,332 1,370 1,482	2,542,210 2,484,732 2,659,836 3,060,511 3,528,474 3,397,964 3,952,334	182.987 180.976 238.878 279.827 303.976 363,159 401,690	1, 283, 093 1, 406, 515 1, 732, 682 1, 863, 202 2, 246, 064 2, 357, 063 2, 301, 369	5,898.696 6,185.375 7,908,662 7,937,055 9,551,831 9,817,904 11,040,347	4,432,616 4,559,203 5,937,102 5,794,026 7,001,791 7,097,682 8,337,288

<sup>&</sup>lt;sup>1</sup> Value of production less cost of fuel, electricity and process supplies. See footnote Table 2,

TABLE 2. Principal Statistics. Peat Industry. 1961-64

Basis: Revised Standard Industrial Classification and New Establishment Concept

	Estab- lish- ments	Mining activity								Total activity				
Year		Production and related workers			Cost of		Value		Working owners and partners		Employees			
		Number	Man- hours paid	Wages	fuel and elec- tricity	materials and supplies	produc- tion	Value added	Number	With- drawals	Number	Salaries and wages	Value added	
	No.		,000			\$'000				\$'000		\$'0	00	
1961 1962 1963	37 42 45 51	1,112 1,118 1,198 1,173	2,360 2,344 2,517 2,429	2,989 3,037 3,343 3,279	305 362 398 387	2, 420 2, 586 2, 699 2, 868	8,671 9,618 9,938 9,965	5,946 6,669 6,841 6,711	6 7 7 7	27 30 29 31	1,207 1,220 1,303 1,290	3,498 3,576 3,915 3,965	5,944 6,655 7,046 6,765	

Rein: See Explanation Notes for description of concepts and definitions and an explanation of differences in Tables 1 and 2. See also text page 3.

TABLE 3. Employment and Payroll, Peat Industry, 1961-63

Basis: Revised Standard Industrial Classification

	Employees											Salaries and wages				
Year		Product related			Adminis- trative and office		ve and		Total		Production and related workers		Admin-	Sales	Total	
	At b		0	ther									istra- tive and	and distri- bution		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	At bogs and plants	Other	office	button		
					num	ber							\$'000			
1961 1962 1963	1,222 1,267 1,387	40 28 16	=	=	48 53 56	22 22 23	-		1,270 1,320 1,443	62 50 39	3, 194 3, 068 3, 580		334 330 373	_	3,528 3,398 3,952	

See footnote Table 2.

TABLE 4. Employment and Payroll, Peat Industry, 1961-64

Basis: Revised Standard Industrial Classification and New Establishment Concept

	Employees											Salaries and wages				
	Production and related workers				Adminis- trative		Sales				Production and		Admin-			
Year	At b		0	her	and o			ind ibution	10	otal	related w		istra- tive and	Sales and distri- bution	Total	
	Male	Female	Male	Female	Male	Female	Mule	Female	Male	Female	At hogs and plants	Other	office	Ducton		
					numl	her			-				\$'000	-		
1961 1962 1963 1964	1,098 1,101 1,182 1,162	14 17 16 11	_ _ _ 2	Grand Grand Grand Grand	67 72 74 85	28 30 31 30	_ _ _	-	1,165 1,173 1,256 1,249	42 47 47 41	2,989 3,037 3,343 3,279	- - - 5	509 540 573 682	=	3, 498 3, 576 3, 915 3, 965	

See footnote Table 2.

TABLE 5. Production and Related Workers, Peat Industry, 1963 and 1964

Basis: Revised Standard Industrial Classification and New Establishment Concept

		196	33			19	€1 ±	
Mon <sup>t</sup> h	At 1	ogs	At dre		At bogs			essing ants
	Male	Female	Male	Female	Male	Female	Male	Female
				num	ber			
Establishments reporting monthly detail (large establishments only):								
January	153	-	248	9	118	_	286	7
February	213	-	342	9	203	_	370	6
March	267	_	430	11	235	_	501	10
April	351	_	423	10	301	_	480	5
May	B68	13	422	10	767	10	506	12
June	1,476	16	475	12	1,370	4	434	10
July	1,361	7	422	12	1,458	6	395	9
August	1,399	14	380	12	1.380	7	410	10
September	1, 136	6	377	14	1,044	7	402	1
October	939	3	314	11	813	6	333	1
November	421	2	279	10	353	2	271	
December	100	_	221	4	88	-	217	1
Averages	724	5	361	10	677	4	384	
Stablishments reporting annual averages (small establishments only)	68		30	-	76	_	25	-
Average for all establishments	792	5	391	10	753	4	409	-

TABLE 6. Purchased Fuel and Electricity Used, Peal Industry, 1963 and 1964 Basis: Revised Standard Industrial Classification and New Establishment Concept

1963 1964 Description Quantity Cost Quantity \$1000 \$'000 1. Large establishments reporting commodity detail: Bituminous coal: (a) From Canadian mines ..... (b) Imported ..... Sub-bituminous coal (from Alberta mines only) ..... 585 Anthracite cost Lignite coal Gasoline (including gasoline used in cars and trucks) ...... Imp. gal, 306.373 286, 467 94 Fuel oil including kerosene or coal oil ..... 343,877 42 304,550 39 Wood 20 260 2 (a) Liquefied petroleum gases ...... Imp. gal. 69,441 12 (b) Other manufactured gas ...... M cu. ft. (c) Natural gas 259, 486 111 273,801 114 Other fuel Electricity purchased 6.971.311 6, 128, 953 97 Steam purchased ..... 2. Small establishments not reporting commodity detail: Estimate for fuel and electricity ..... 24 3. All establishments: Total fuel and electricity used ..... 387

# TABLE 7. Waterials and Supplies. Peat Industry. 1963 and 1964

Hants: Revised Standard Industrial Classification and New Establishment Concept

Description	Co	st
	1963	1964
	\$'0	00
aw or other semi-processed materials purchased and used in bog/mill operations? ontainers, shipping materials and supplies used perating, maintenance and repair supplies used (excluding fuel) mount paid out to others for work done on materials owned by establishments	2, 277 388	2,339 386
Totals	2,699	2, 868

### TABLE 8. Value of Production, Peat Industry, 1963 and 1964

Basis: Pevised Standard Industrial Classification and New Establishment Concept

Va	lue =
1963	1964
8'0	000
9,938	9, 965
-	-
9,938	9,965
	1963 \$70 9,938

See Jonapan Table 7

TABLE 9. Specified Taxes Paid by Companies Engaged in Peat Rog Operations, 1964

Nature of tax	Dollars
ominion income taxes, including taxes on non-operating revenue	90.571
rovincial taxes	41, 141
unicipal taxes	56,111
Total taxes paid	187,823

<sup>1</sup> Includes related corporate activities associated with operations of peat bogs and plants.

TABLE 10. Miscellaneous Expenditures Made by Companies Engaged in Peat Bog Operations, 1964

	Dollars
) Workmen's compensation	65, 138
o) Silicosis assessment	_
C) Unemployment insurance	31,351
l) Aggregate cost of structures, roads, machinery, equipment, etc., built by or purchased from outside contractors or suppliers and chargeable to Fixed Assets Account	167.312
e) Book value of fixed assets (new structures, roads, machinery, equipment, etc., including major repairs and alterations) produced by own employees and chargeable to Fixed Assets Account	105,604
Other capital expenditures not reported in (d) and (e)	23,084
Cost of materials and supplies used in the production of machinery and equipment and in the construction of roads and new structures (including major repairs and alterations by own employees and chargeable to Fixed Assets Account)	80,497
Cost of office supplies used during the year, not chargeable to Fixed Assets Account. Fxcludes cost of stamps and meter expenses	19,789

<sup>1</sup> Includes related corporate activities associated with Canadian operations of peat bogs and plants not allocable separately elsewhere.

<sup>&</sup>lt;sup>1</sup> Refer to Explanatory Notes for explanation of differences in Tables 7 and 8 with data published in earlier years.
<sup>2</sup> No detailed information on materials used was collected from small establishments, the estimated costs for which are included here. These estimated costs were \$137,012 in 1963 and \$127,517 in 1964.

TABLE 11. Production of Peat Fuel and Peat Moss, by Uses and by Provinces, 1963 and 1964

						Peat mo	SS			
Province	Peat	fuel	For horticulture		For poultry and stable litter		For other uses			l moss ments
	Tons	Value	Tons	Value	Tons	Value	Tons	Value	Tons	Value <sup>1</sup>
		\$	<b>.</b>	\$		s		\$		\$
1963										
Nova Scotia New Brunswick	} -		32, 896	1,126,282	222	10,132	-	-	33,118	1,136,414
Quebec	, –		84, 914	2,207.278	1,196	32,251	52	6,084	86, 162	2,245,613
Ontario Manitoba	} -	-	57,854	1,681,634	_		-		57,854	1,681,634
Alberta	_	_	780	27, 906				-	780	27, 906
British Columbia	-		70, 265	3,616,289	132	7, 372	-	_	70,397	3,623,661
Totals	-	_	246, 709	8, 659, 389	1, 550	49, 755	52	6,084	248, 311	8, 715, 228
1964										
Nova Scotia New Brunswick	} -	_	30,019	961,620	323	9,850	-		30,342	971,470
Quebec			94, 122	2,469,279	924	25,015	74	8,651	95,120	2,502,945
Ontario Manitoba	} -	*****	51,090	1,672,884	4,058	185,670	_		55, 148	1,858,554
Alberta	_	_	4,404	222,369	-	_	-		4,404	222,369
British Columbia	_		70,355	2,838,287	106	6,023	-	40-10	70,461	2, 844, 310
Totals	-	_	249, 990	8, 164, 439	5, 411	226,558	74	8,651	255, 475	8, 399, 648

<sup>1</sup> Does not include cost of containers which were valued at \$2,271,747 in 1963 and \$2,230.339 in 1964.

TABLE 12. Production of Peat Fuel, 1946-64

Year	Short tons	Value	Year	Short tons	Value
		\$	L. L. Land		8
946	145 95 85 56 58	1,305 950 850 560 580	1951 1952 1953 1954 1956	50 32 — 6	1,100 320 60

TABLE 13. Production of Peat Moss, 1955-64

Year	Short tons	Value	Year	Short tons	Value
1955	117. 579	\$ 3, 485, 287	1960	184, 784	\$ 6, 088, 138
956 957 958 959	1 28, 054 137, 747 149, 401 184, 049	4, 240, 714 4, 734, 504 4, 778, 860 6, 226, 688	1961 1962 1963 1964	224,031 238,035 248,311 255,475	7, 295, 087 7, 480, 396 8, 715, 228 8, 399, 648

TABLE 14. Exports of Peat Moss and Other Mosses, 1955-64

Year	Quantity	Value	Year	Quantity	Value
	lons	\$		tons	\$
955	102, 997 113, 346 117, 877 129, 138 161, 236	5, 388, 362 6, 068, 845 6, 668, 723 7, 507, 463 8, 976, 389	1960 1961 1962 1963 1964	157, 490 187, 621 205, 222 206, 911 217, 629	8,825,540 10,414,574 10,999,085 9,901,186 10,200,315

Note: The weight of peat moss shipped varies greatly depending on the moisture content. Weight is used as a unit of measure of production (shipmenist) owing to the fact that Canadian moss is shipped in various forms, including bales, bags, pads, etc., and at present there is no general standardization in Canadia as to the size of these units.

Source: Trade of Canada, "Exports by Commodities", Catalogue No. 64-004.

TABLE 15. World Production of Peat, by Countries

Source: Minerals Year Book published by the United States Bureau of Mines

Creativ <sup>4</sup>	1960	1961	1962	1963	1964
	thousand short tons				
Argentina, fuel	32	1	2	12	4
Austria, fuel <sup>1</sup>	40	6	6	6	6
Canada, agricultural use <sup>3</sup>	185	224	238	244	255
Denmark, fuel	187	125	67	55	40
Pinland: Agricuitural use Fuel	6 159	1 1 28	4 68	3 88	4 79
Trance: Agricultural use <sup>2</sup> Fuel	19 2	33	31	35 3 <sup>2</sup>	40 3 <sup>2</sup>
Germany: East <sup>2</sup>	550	550	550	550	550
West: Agricultural use Fuel	895 871	830 672	911 776	884 837	1,085 773
lungary, agricultural use <sup>2</sup>	65	65	65	65	70
reland: Agricultural use Fuel	14 4, 514	3, 912	4, 539	28 3, 918	5, 101
srael, agricultural use <sup>2</sup>	50	9	11	13	15
apan²	80	80	80	80	75
orea, South, agricultural use	107	45	137	1 28	1 27
etherlands <sup>1</sup>	500	500	500	440	440
o way: Agricultural use Fiel	42 198	50 180	40 161	40 115	46 115
mand, fuel	1 25	83	73	112	110
w den: Agricultural use Puel	77 231	70 <sup>2</sup> 252	61 169	52 <sup>2</sup> 234	70 275
S.S.R.: Agricultural use <sup>2</sup> Fuel	100,000 59,100	100,000 57,300	100,000 38,300	100,000 64,500	100,000 65,600
Inited States, agricultural use	471	531	572	579	649
World totals <sup>1,2,5</sup>	168, 500	165, 700	147, 400	173, 000	185, 600
Fuel peat (included in world totals) <sup>1,2,5</sup>	65,710	63, 300	44,800	70,400	72, 700

Data do not add exactly to totals shown because of rouding where estimated figures are included in the details.
 Estimates.
 In addition, Canada produces a negligible amount of peat fuel.
 Less than 500 tons.
 In addition Iceland, Italy and Spain produced a negligible amount of peat fuel.

### List of Establishments classified to this Industry, 1964

(Does not include establishments classified to other industries which recover peat as a secondary activity)

Name	Head office address	Location		
Nova Scotia: Annapolis Valley Peat Moss Co. Ltd.	Berwick	Berwick		
New Brunswick:				
Atlantic Peat Moss Co, Ltd.	4460, boul. Pie IX, Montréal, Québec	Shippegan, Lameque		
Bushland Products Ltd.	Lower Caraquet	Pokesudie		
Pafard Peat Moss Co. Ltd.	Shippegan	Shippegan		
Grand Anse Peat Moss Co. Ltd,	Grand Anse	Grand Anse		
iieveco, Ltd,	Tabusintac	Covedell		

# List of Establishments classified to this Industry, 1964 - Concluded

Name	Head office address	Location
Québec:		
Belange, G.	Rimouski	Rimouski
Boulanger, Andeé-Albert		
Bourque & Fils Enr'g.		
Fortin, Jean J. Mme		
Gagnon & Théberge		
Leclerc Peat Moss		
Michaud, A.		
Ouellet, E.		
Premier Peat Moss Producers Ltd.		
	THE TOTAL ME MANUEL THE	Loup
Québec Peat Moss Reg'd.	St-Guillaume D'Upton	St-Bonaventure
R. & B. Moss & Peat Products	Box 243, Waterville	
Roy, Benoit	Rivière Blanche	Matane Co.
Roy, Ernest	St-Fabien	St-Fabien
Roy, Roméo	St-Ulric	St-Ulric
Saguenay Peat Moss Co. Ltd.	582, boul, Lamarche, Chlcoutimi	Bagot Twp.
Smith Canadian Peat Inc.	Box 215, Magnolia, Ohio, U.S.A.	St-Charles de Bellechasse
Théberge, Henri	St-Fabien	St-Fabien
Tourbe du St. Laurent Ltée	C.P. 175, Rivière-du-Loup	Rivière-du-Loup
Tourbière Clair Inc.		
Tourbières Lambert Inc.	Rivière-Ouelle	
Tourbière de Pointe-au-Père	Mont-Joli	Pointe-au-Père
Tourbière St-Alexandre	St-Alexandre	St-Alexandre
Tourbière de St-Fabien	St-Fabien	St-Fabien
Tourbières du Saguenay Ltée, Les	C,P, 11 St-Fabien	Les Escoumina
Tourbière Theberge Inc.	St-Fabien	St-Fabier
Tourbière-Thibault	St-Fabien	St-Eugène
Ontario:		
Atkins & Durbrow (Erie) Ltd.	Port Colborne	
Amaranth Peat Products	Shelburne	Amaranth Twp.
Manitoba:		
Western Peat Co. Ltd.	New Westminster, British Columbia	Moss Spur
Alberta:		
Banff Mining Quarrying Ltd.	Evansburg	Evansburg
L. M. Consumers Supply Ltd.	1063t-92nd St., Edmonton	Edmonton
Noralta Peat Moss Products Ltd.	Alpen	Alpen
British €olumbia:		
Acme Peat Products Ltd.	687 No. 7 Road, R.R. 2, Richmond	Lulu Island
Atkins & Durbrow Ltd.	401-1033 Davie St., Vancouver	Ladner
Blundell Peat Co. Ltd.	820 No. 6 Road, Richmond	No. 6 Road
Byrne Road Peat Farms	6350 McKay Ave., South Burnaby	Burnaby South
Coast Peat Co. Ltd.	736 Granville St., Vancouver	Pitt Meadows
Lulu Island Peat Co. Ltd.	261 No. 7 Road, R.R. 2, Richmond	Lulu Island
Meadowland Peat Ltd.	575 W. 22nd. Ave., Vancouver	South Burnaby
North American Peat Ltd.	5280 Byrne Road, Burnaby	
Northern Industries Ltd.	245 No. 8 Road, Richmond	
Richmond Peat Products Ltd.		
Western Peat Moss Ltd.	Box 399, New Westminster	

# EXPLANATORY NOTES

(Including Concepts and Definitions)

#### INTRODUCTION

The Common of Missa, Courties and C. Well is an annual mail survey covering Canada's Mineral Industries based on the Standard Classification of Industries. While principal statistics are collected and compiled for all mineral industries not all can be published separately by province because of the confidential nature of the data in certain provinces.

The reporting unit for the Census is designated as the establishment (see definition of Establishment in following section) and a return is requested from every establishment classified to a mineral industry. When an establishment is operated for only part of a year a report is required covering the period of operation.

There are four different questionnaires used in this Census: (a) short form (introduced in 1965) (b) long form (c) head office questionnaire and (d) commodity questionnaire. The short and long forms are used to obtain principal statistics and commodities shipped from establishments classified to mineral industries and differ only in the amount of detail requested.

The head office questionnaire is generally used for company head offices and for auxiliary units separately located from the mineral establishment(s), (see following notes on Head offices and auxiliary units). The Commodity questionnaire is used to survey certain establishments to collect information on the quantity and value of goods of own production shipped or used by such establishments in order to achieve full coverage of domestically produced commodities, (See the following note under Value of production).

#### General

This report is one in a series of 18 publications which relate to the operations of industries comprising Major Groups 1.3. and 4 of Division 4, Mines (including Milling) Quarries und Oil Wells of the revised Standard Industrial Classification (S.I.C.). These groups are respectively Metal Mines, Nonmetal Mines and Quarries and Sand Pits, Industries comprising Major Group 2 (Mineral Fuels) are covered in a separate series of reports. The industries included in Major Group 5, Services Incidental to Mining are not covered by separate reports. However, certain relevant statistics are published in various publications, for example, "Contract Drilling for the Mining Industry" (Catalogue No. 26-207), "Construction in Canada'' (Catalogue No. 64-201) and a special report "Private and Public Investment in Canada'' (available on request from the Bureau or the Queen's Printer). The Bureau has also developed a new survey "Annual Survey of Mining and Exploration Companies". This survey is being introduced for the 1967 reporting period and will attempt to bring together details on exploration, development and capital and repair expenditures for the mining universe (excluding oil and gas).

The publication of this series of 18 reports constitutes the final phase of the implementation of the revised Standard Classification for these three Major Groups (see above). Because of its size and complexity, this project has to be carried out in several stages and over a period of years. These stages were as follows: (a) reclassification of establishments according to the revised S.I.C. (b) implementation of a new establishment definition (c) an extension of the establishment definition to cover the non-mining activities of mining establishments. The first stage was completed with the 1960 Census of Mines, etc. and the results were published in the 1960 and 1961 reports on the basis of the revised Standard Industrial Classification. This part of the project was confined entirely to a re-coding of existing reporting units. Under the revised Standard Industrial Classification reporting establishments are classified or allotted to specific industries in the classification system on the basis of the value of principal products made or shipped. Full details concerning the revised classification system are contained in the "Standard Industrial Classification Manual", Catalogue No. 12-501, which is available from either the Queen's Printer or the Dominion Bureau of Statistics.

The second stage in the project consisted of the implementation of the new definition of the reporting unit i.e. "establishment" as it applied to mining activities of mining satablishments (see following note on Establishment). Results of the 1962 Census of Mining reflected this change in concept and, in order to provide comparability of data for previous years, the 1962 reports contained principal statistics on the basis of the new establishment definition for years back to 1957. This naturally included the projection of stage one.

The third stage in the project which was the extension of the definition of the establishment to cover total activities of mining establishment, is reflected in the 1964 data presented in the present report. By definition "total activity" relates to all operational data and excludes such non-operational items as rent, interest and dividends. Statistics on man-hours included in the earlier publications for the mining industry will continue to be included as part of the regular series but will be confined to production and related workers as in the reports for the Census of Manufactures. Adjustments and revisions made in the statistics for mining activities covering the period 1961-63 and carried in the mining series of publications for this period were further revised in the course of the final stage of the programme to bring them in line with reporting procedures followed in the 1964 Census of Mining which reflect the final application of the new concept. The 1961-63 statistics on mining statistics on the new basis are thus not comparable with those published in earlier issues in this series. However, the 1961-63 statistics are shown in this publication in both their previously published and revised forms in order to provide a link with the immediate past.

Reference has already been made to changes implemented and in the course of implementation in the mining industries in reports published in this series prior to the 1964 issues; however a more complete account of the changes and additions and brief descriptions of the principal industry statistics are given in the following sections of those notes. This latter includes as well a special section dealing specifically with the impact of a new concept in the treatment of the Smelting and Refining industry on the metal mines industries. A description of conceptual and definitional changes appropriate to the statistics for Major Group 4, Mineral Fuels will be included in the relevant industry reports for this group.

# Metal Mines

The effect of the application of a special concept to the reporting procedures followed by plants carrying on integrated mining/smelting/refining operations will be evident in the comparison of the 1961-64 data particularly for the items Materials and supplies and Value of production shown in the publications on Metal Mines and the data published in reports prior to 1964. The industries in which the application of this concept had a major effect are those included in S.I.C. Major Group 1—Metal Mines of the Annual Census of Mining (Mines (including Milling) Quarries and Oil Wells) but more particularly the following:

Copper-Gold-Silver Mines Nickel-Copper Mines Silver-Lead-Zinc Mines

These industries which are dominated by a sector of vertically integrated companies involved in mining and manufacturing (smelting and refining) operations have historically created significant distortions in the statistics for these industries. These were caused, for the most part, as a result of applying a value to the ores, concentrates, etc. which were part of the materials (inputs) of the Smelting and Refining industry. The method of valuation used was based on the recoverable metal content of these materials, that is, ores, concentrates, etc. A similar procedure was followed in valuing the output portion of these mtnes. Since the major output of the mines served as an input to the Smelting and

Refining industry and in turn became a part of the output of the Smelting and Refining industry there was, in effect, a duplication of values for recoverable metal content in the mining and manufacturing sector (smelting and refining). The procedure followed also tended to understate the total output value of the mines sector because the recoverable metal content was valued at a lower level in the processing operations that is, as ores, concentrates, etc. before smelting and/or refining.

Prior to the full implementation of the establishment concept to include total activities, the "Materials and supplies" section included primarily a limited number of consumable materials such as explosives, drill steel, lubricants, etc. Many kinds of supplies, for example, maintenance and repair supplies were not reported. The extension of the Materials and supplies section in accordance with the total activities concept to provide for a more complete coverage of materials and supplies accounts for a major part of the increase in the total cost of Materials and supplies used. In the case of the vertically integrated companies the procedure followed omitted treatment charges such as milling, smelting refining, etc. from the input side of the mines sector involving these companies as well as from the output side of the Smelting and Refining industry. As a result the cost of materials (inputs) reported, particularly for the industries in the mines sector mentioned above was considerably understated.

As a result of the foregoing it was necessary to find some statistical device which would eliminate the above practices and permit the derivation of more meaningful principal statistics—for both the metal mines and for the smelting and refining industry.

While it has been suggested that smelting and refining should be treated as part of the metal mines, and that the statistics should be compiled on this basis, this would be difficult to justify from the statistical viewpoint. Smelting and refining by the nature of its operations constitutes a

manufacturing activity and is considered such, not only in the Canadian and International classification systems but also in the systems of most foreign countries. To include it as part of the mining universe would not only make international comparisons virtually impossible but would affect the impostance of Canada's manufacturing industries even more dratically than the changes which resulted from the approach adopted.

After a thorough study of these problems and consultstions with the firms involved, it was found that the only satisfactory solution was to continue to consider smelting and refining as a manufacturing industry and to treat such operations of vertically integrated companies as "custom" operations regardless of whether or not the smelting and refining plants (establishments) of such companies were concerned solely with the smelting and refining of ore, concentrates, etc. of their own company. This procedure eliminated the need to arbitrarily value the ores, concentrates, etc. transferred to the smelter and to value the output of the smelter and refinery in terms of commodities produced. Although, for the purpose of commodity statistics, these are still valued on the basis of recoverable metal content, the revenue from integrated operations accrues to the mines concerned and is not duplicated, as in the past, in both the mining and the smelting and refining industries. Thus the revenue from smelting and refining in such integrated operations now consists primarily of treatment costs of own ores, etc. plus any revenue from toll charges of non-company ores, byproducts, etc.

The effects of allocating the final revenues of the vertically integrated companies included in this industry to the metal mining industries and the broadening of coverage for materials used, as well as any changes resulting from the implementation of the revised Standard Industrial Classification and the New Establishment Concept, are reflected in the tables of principal statistics for the years 1961 to 1964. Additionally, these tables reflect the inclusion of the normining activities, i.e. the total activity concept.

#### CONCEPTS AND DEFINITIONS

## Establishment

A mining establishment is typically a mine, mine/mill (concentrator), quarry, pit, bog, or plant principally engaged in commercial production activities. In many cases a mining company consists of a single establishment but it is not uncommon for a company to consist of a number of establishments some of which may be in mining i.e. mine/mill and others in manufacturing i.e. smelter, cement plant, etc. In addition a number of locations may be involved. Such firms are requested to submit a separate Census of Mining report for each mineral establishment which can meet the reporting requirements embodied in the following definition of the "establishment".

"The smallest unit which is a separate operating entity capable of reporting the following principal statistics:

Materials and supplies used Goods purchased for resale as such Fuel and power consumed Number of employees and salaries and wages Man-hours worked and paid Inventories Shipments or sales."

Each establishment is required to report on all the activities carried out within its accounting boundaries (except non-operating revenues such as rent, interest and dividends) and data on the different activities (mining etc., trading in goods not of own manufacture, construction by own labour force, revenue from services, etc.) are requested to be reported separately. It should be noted that the statistics for separate activities are not completed consistent since some respondents cannot distinguish, in their records, materials, shipments and inventories relating solely to their own mining a tivities. For example, inventory of norms dittal parchased

for re-sale any not be distributional from avenue; of own mineral commodities. Comprete consistency, therefore, can be obtained only at the "all operations" (total activity) level and for studies or statistical measures requiring accurate coordinated data, the "total activity" statistics should be used.

The number of establishments represents the number of operating units that are principally engaged in the activities of the mineral industries to which they have been classified. These units do not necessarily represent the total number engaged in the production of a commodity mainly produced in a certain industry. Some commodities are produced as secondary products in other mineral and non-mineral industries. It should be noted that head offices and auxiliary units which are surveyed separately are not included in the establishment count, (see following notes on Head offices and auxiliary units).

## Head Offices and Auxiliary Units

Head offices and auxiliary units of companies classified to the mineral industries such as sales offices, administrative offices, warehouses, laboratories, etc. are now surveyed as part of the Census of Mining.

These head offices and auxiliary units are either included in an establishment report or are surveyed by means of the head office questionnaire. The former is the most common case where a single establishment firm has its executive personnel, sales office, etc. located at the site of the mine (establishment). The special head office questionnaire is generally used where a firm, regardless of the number of establishments, has separately located offices or auxiliary units. Such offices or units do not constitute establishments within the Census of Mining as they do not normally generate operational revenues, but give rise only to cost of applications

(mainly salaries and wages) which are automatically included in the value of shipments or sales. Although not considered as establishments, and hence, not included in the "establishment" count for an industry, the operational costs are reflected in either the "Industry" statistics (3 or 4 digit level) of the "Major group" statistics (2 digit level) according to the following rules:

- (n) In the case of single establishment firms, statistics of offices and units located in a different municipality to the mining establishment are classified to the same industry (3 or 4 digit) as the mining establishment;
- (b) In the case of multi-establishment firms, the statistics for such offices and units are coded to the same industry as the establishments of the firm, when all establishments are in the same industry (3 or 4 digits). When establishments of such firms are coded (1) to different industries within a major group, (2) to industries in different major groups or (3) to industries in different divisions of the Standard Industrial Classification, then the statistics are included in the major group totals (2 digit level) in which the major part of the company's operations are classified. Although this may result in some distortion of major group statistics in the case of (2) and (3) the statistics at the industry (3 or 4 digit) level in all cases will be left free of these company-wide data.

#### **Employees**

#### (a) Production and related workers - Mining activities

In addition to those engaged directly in mining production activities, they include those employed in storing, inspecting handling, packing, warehousing, etc. They also include employees engaged in maintenance, repair, janitorial and watchman services and line supervisors (working foremen) engaged in similar work to that of the employees they supervise. For those establishments reporting on the "long" form, production and related workers engaged in mining activity are reported as those receiving pay during the last pay period of each month, an average for the year being obtained by summing the monthly figures and dividing by 12. This procedure is followed even though the establishment did not operate in all months in order to arrive at equivalent annual full-time employment. The numbers are somewhat affected by turnover, in that employment is overstated when an employee changes employment during a pay period. The man-hours of production and related workers in mining activity represent total man-hours paid (total hours at work during the calendar year plus hours not worked but nevertheless paid for, such as paid vacations, sick leave, statutory holidays, etc.). In reporting overtime hours, respondents are requested to report only hours actually at work. It should be noted that the division of hours paid into production and related workers payrolls results in average hourly earnings and does not represent hourly wage rates which are collected and published by the Department of Labour and which are based on selected occupations.

## (b) Production and related workers - Non-mining activities

Such employees include those on mining establishments' payrolls engaged in activities such as construction undertaken for the use of these establishments and any other production workers who are not engaged directly in the production of ore and/or concentrates.

### (c) Administrative and office employees

This category includes all executive and supervisory officials such as presidents, vice-presidents, comptrollers, secretaries, treasurers, etc., together with managers, professional, technical and research employees, superintendents and plant supervisors above the line supervisor or working foreman level, and clerical staff. Also included are employees in activities such as advertising, credit collections, purchasing, personnel, legal, medical, etc. It should be noted that prior to 1961 this category also included working owners and partners. Also included in this category are employees located at head offices or auxiliary units separately located from the establishment; in accordance to the rules outlined under "Head offices and auxiliary units" above.

#### (d) Sales and distribution workers

This category includes office personnel whose salaries are charged to selling expense, e.g. travelling salesmen. It may also include some sales employees who are reported as part of a mining establishment but are not working at the establishment. These are generally broken down by location in cases where more than 15 employees are involved in any one location. The figures exclude persons working on a commission basis who are not considered regular employees of the establishment.

### (e) Total employees

This total comprises the foregoing categories including employees located at separately located head offices and auxiliary units. The numbers of employees included under categories (b), (c) and (d) are reported in the form of annual averages and represent as closely as possible full time employment; adjustments are made when reported figures indicate the existence of part-time or seasonal employment.

#### Working Owners or Partners

These are not now included in the statistics of employees and salaries and wages. There is some duplication in numbers when a person owns more than one establishment and is reported as a working owner on each Census return. Withdrawals of working owners are defined as amounts withdrawn by owners or partners for normal living expenses excluding withdrawals for payment of income tax.

## Salaries and Wages

Salaries and wages refer to gross earnings of employees before deductions for income tax and employees contributions to social services such as sickness, accident and unemployment insurance, pensions, etc. They include all salaries, wages, bonuses, profits shared with employees, the value of room and board where provided, commissions (paid to regular employees only) as well as any other allowance forming parl of the worker's earnings. Payments for over-time are included.

#### Fuel and Electricity

Figures for fuel refer to amounts actually used (including fuel used in cars, trucks, locomotives, etc.), not to purchases unless the quantities are substantially the same. Any fuel and electricity produced by establishments for internal consumption are not included in the total cost. Values represent laid down cost at the establishment including freight, duty, etc. Although fuel and electricity used is considered part of mining activity it should be noted that it also includes relatively small amounts used in non-mining activities since these cannot be reported separately.

# Materials and Supplies

#### (a) Mining activities

Figures represent quantities and laid down cost values, at the establishment, of materials, supplies and purchased components owned and used during the year in mining activities and related processes. These statistics represent only commodity items or physical goods (cost of services or overhead charges such as advertising, insurance, depreciation, etc. are not included) whether purchased from others or received as transfers (in the form of materials, components or semi-processed goods) from other establishments of the reporting company. Included are maintenance and repair supplies not chargeable to fixed assets accounts and any amounts charged by other establishments for work done on materials owned by the reporting establishment. Cost of repairs or maintenance done by outside contractors and cost of returnable containers are not included.

# (b) Non-mining activities

1. Purchases for re-sale as such

Figures represent cost of materials or products purchased from others by the reporting establishment (or received as transfers from other establishments of the reporting company) for re-sale as such in the same condition as purchased. Included are any finished products received on consignment from other countries.

2. Other materials and supplies used

Figures represent the cost of materials and supplies, if any, used in new construction and in the production of machinery and equipment (for the use of the reporting estabment) by the establishment's own employees. Included are materials used for any capital repairs and alterations carried out by the establishment's employees. Amounts paid to outside contractors for construction and repair work are not included nor is the cost of purchased machinery and equipment. Also included is the cost of office supplies not chargeable to fixed assets accounts and the cost of such other items of materials and supplies used as food, beverages and supplies for establishment-operated cafeterias and lunch counters, first aid and medical supplies, laboratory supplies, etc.

#### Value of Production

#### (a) Value of production of goods produced in the establishment

These figures represent the values in Canadian dollars of products shipped by the reporting establishments adjusted by changes in value between closing and opening inventory values of goods-in-process and finished products on hand. Included are revenues from repairs and custom work performed for other establishments and the cost (book value) of any goods produced by the mining establishment and shipped on a rental basis.

All products and by-products of own production shipped from the establishment are covered, including transfer shipments to sales outlets, distributing warehouses or to other processing plants of the reporting firm, when such units are treated as separate establishments. Production values are net of returned goods, discounts, returns, allowances, sales tax, excise taxes and duties, returnable containers and charges for outward transportation by common or contract carriers. Transportation or delivery expense incurred by the reporting establishment's own carriers are included,

Shipments of goods of own production of establishments which are coded to some other division of the Standard Industrial Classification (on the basis of principal activity but which are engaged in mining as a subsidiary activity are collected by means of the Commodity questionnaire referred to earlier. Such shipments together with shipments of goods of own production of establishments forming the universe of mineral industries are compiled and recorded under appropriate headings in the various mineral industry publications; however, operational details relating to the production of such commodities are not included in the principal statistics shown in the reports for individual mineral industries.

## (b) Shipments of goods not of own manufacture

These figures represent the net selling value at establishment (net of discounts, returns, allowances, sales

taxes and excise duties and taxes and transportation charges by common or contract carriers) of all products or materials (including products transferred from other establishments of the reporting firm) sold as such in the same condition as purchased or received as transfers. All sales of consistment goods from other countries are included.

#### (c) Other revenue

Figures represent the book value of fixed assets, if any, (new construction and machinery and equipment including major repairs, alterations, additions, modifications, installation and assembly work) produced during the year for the use of reporting establishments by the establishment's own employees and for which depreciation accounts are maintained. Included also are any revenues from the sale of electricity, servicing revenues, commissions on sales (when not included in value of sales), revenue for company-operated cafeterias and lunch counters and revenue from outside installation or construction work not related to the establishment's own products, sale of used materials (excluding sale of used fixed assets) research and development work, etc. As mentioned previously the figures do not include non-operating revenue such as rent, dividends, interest, etc.

#### Value Added

#### (a) By mining activities

Figures are compiled by deducting the cost of operating materials, supplies, etc. and fuel and electricity consumed from the value of production.

#### (b) By non-mining activities

The figures are compiled by deducting the cost of goods purchased for re-sale (adjusted for changes in the value of inventories of goods purchased for re-sale) and the cost of non-mining materials and supplies used from the value of shipments of roots and of own manufactures are supplied.

# (c) By total activities

The figures consist of value added by mining activities plus value added by non-mining activities. "Value added by sometimes referred to as net output or net production. However, to arrive at the National Accounts concept of net production, or Gross Domestic Product at "Factor cost" it would be necessary to subtract also the cost of advertising, insurance and other business expenses which are not collected as part of the annual Census of mining, "Value added" figures for the primary industries, manufacturing and construction are published in DBS publication Catalogue No. 61-202. "Survey of Production".

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