

The Mineral Industry of Alaska

This chapter has been prepared under a Memorandum of Understanding between the Bureau of Mines, U.S. Department of the Interior, and the Alaska Department of Natural Resources for collecting information on all nonfuel minerals.

By Tom L. Pittman¹

The reported value of nonfuel mineral production in Alaska in 1978 and 1979 was \$163.7 million and \$123.4 million, respectively. This change is mostly due to the changes in the reported values for sand and gravel and gold. The quantities of tungsten concentrates and antimonial ores and concentrates were about the same in 1978 and 1979. Barite production was resumed in 1979 and crude ore was shipped.

Exploration expenditures reached an apparent maximum in 1978, estimated at between \$60 and \$75 million. Expenditures in 1979 are estimated to be 65 to 80% of the

amount expended in 1978. Interest remained high in exploration for gold and silver, molybdenum, tin, copper, lead, and zinc. Tungsten, nickel, and cobalt were given special attention in some areas. New claim location recordings in 1979 were about half of the recordings in 1978. A large proportion of claims made in earlier years were maintained in good standing. A large proportion of expenditures in 1979 were for drilling, geologic and other exploratory work on major prospects, and on smaller prospects showing promise of relatively high-grade ores. In 1978, 21,154 new mining claims

Table 1.—Nonfuel mineral production in Alaska¹

Mineral	1977		1978		1979	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
Gem stones.....	NA	\$60	NA	\$60	NA	\$60
Gold (recoverable content of ores, etc.)						
troy ounces.....	18,962	2,812	18,652	3,610	6,675	2,053
Sand and gravel... thousand short tons...	66,426	134,251	69,300	145,300	50,900	104,905
Silver (recoverable content of ores, etc.)						
troy ounces.....	2,000	8	2,000	11	(²)	5
Stone:						
Crushed... thousand short tons...	4,008	17,493	3,437	14,649	3,656	15,458
Dimension... do.....	(²)	1	--	--	--	--
Combined value of copper (1977-78), tin (1978-79), and tungsten.....	XX	10	XX	31	XX	938
Total.....	XX	154,635	XX	163,661	XX	123,419

NA Not available. XX Not applicable.

¹Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

²Less than 1/2 unit.

Table 2.—Value of nonfuel mineral production in Alaska, by region¹

Region	(Thousands)		Minerals produced in 1978 in order of value
	1977	1978	
Bristol Bay	\$8	--	
Cook Inlet-Susitna	4,011	\$10,486	Sand and gravel, gold, stone, silver.
Copper River	W	237	Stone, sand and gravel.
Kenai Peninsula	454	323	Sand and gravel, gold, silver, lead.
Kodiak	W	W	Sand and gravel, stone.
Kuskokwim	W	W	Tungsten.
Northern Alaska	W	13	Sand and gravel.
Seward Peninsula	W	W	Sand and gravel, stone, gold, tin.
Southeastern Alaska	W	W	Stone, sand and gravel.
Yukon River	1,187	1,392	Sand and gravel, copper, silver.
Undistributed ²	148,976	151,204	
Total ³	154,635	163,661	

W Withheld to avoid disclosing company proprietary data; included with "Undistributed."

¹No production was reported in Alaska Peninsula, Aleutian Islands, Bering Sea, and Northwestern Alaska Regions.

²Includes gem stones, some sand and gravel, gold, and silver that cannot be assigned to specific regions.

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

Table 3.—Indicators of Alaska business activity

	1977	1978	1979 ^P	1978-79 percent change
Employment and labor force, annual average:				
Total civilian labor force	175.0	181.0	180.0	-6
Unemployment	16.0	20.0	16.0	-20.0
Employment (nonagricultural):				
Mining ¹	5.0	5.6	5.7	+1.8
Manufacturing	10.9	11.7	12.6	+7.7
Contract construction	19.6	12.1	10.1	-16.5
Transportation and public utilities	16.2	16.4	16.8	+2.4
Wholesale and retail trade	28.3	28.9	29.7	+2.8
Finance, insurance, real estate	6.2	8.1	8.6	+6.2
Services	27.0	27.9	30.0	+7.5
Government	50.1	53.6	54.8	+2.2
Total nonagricultural employment ¹	163.3	164.3	168.3	+2.4
Personal income:				
Total	\$4,313	\$4,369	\$4,568	+4.6
Per capita	\$10,455	\$10,849	\$11,252	+3.7
Construction activity:				
Number of private and public residential units authorized	6,912	² 4,651	2,693	-42.1
Value of nonresidential construction	\$157.3	\$85.5	\$78.3	-8.4
Value of State road contract awards	\$111.8	\$46.0	\$90.0	+95.7
Shipments of portland cement to and within the State				
thousand short tons	120	116	90	-22.4
Nonfuel mineral production value:				
Total crude mineral value	\$154.6	\$163.7	\$123.4	-24.6
Value per capita, resident population	\$374	\$406	\$304	-25.1
Value per square mile	\$264	\$279	\$210	-24.7

^PPreliminary.

¹Includes bituminous coal and oil and gas extraction.

²Series revised in 1978; data not comparable with those of prior years.

Sources: U.S. Department of Commerce, U.S. Department of Labor, Highway and Heavy Construction Magazine, and U.S. Bureau of Mines.

were recorded on Federal and State lands. Annual assessment work was recorded on 50,942 claims, giving a total of 72,096 Federal and State claims. Through October 22, 1979, the Bureau of Land Management

reported 59,296 mining claims on federal land had been recorded as required by provisions in the Federal Land Management and Policy Act.

Increases in exploration effort and the

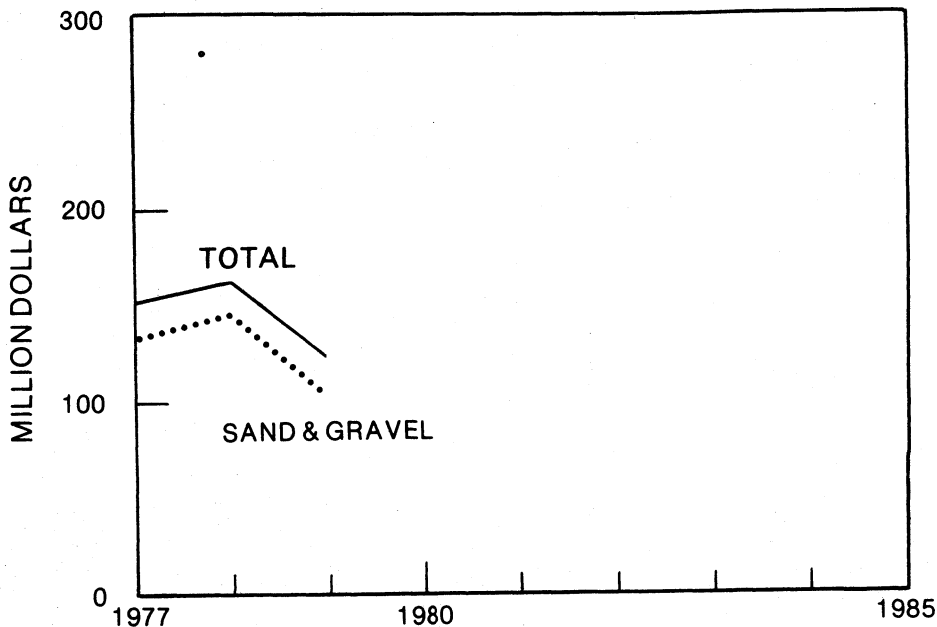


Figure 1.—Value of sand and gravel and total value of nonfuel mineral production in Alaska.

normal progression of otherwise viable prospects to producing mines will be slow until many of the problems facing the private mineral sector are resolved. Most of the problems are due to uncertainties in land tenure, access, and the economic implications of regulations and the permitting requirements of land and resource managing agencies. Some provisions in current and proposed water-rights and in-stream-flow legislation are of vital interest. Certain aspects of the developing district coastal zone management programs may become decisive elements in planning some mining,

milling, and related transportation projects.

Legislation and Government Programs.—In November 1978, Secretary of the Interior Andrus, using authority contained in Section 204 (E) of the Federal Land Policy and Management Act (PL94-579), withdrew from development 110 million acres of Federal lands:

In December, President Carter created 17 new national monuments under authority of the Antiquities Act of 1906 covering 56 million acres of the land withdrawn by the Secretary of the Interior.

REVIEW BY NONFUEL MINERAL COMMODITIES

METALS

Copper.—Exploration of a series of copper, zinc, lead, and silver deposits continued along the so-called schist belt in the central Brooks Range. Bear Creek Mining Co. continued work on its very large Arctic Camp deposit and performed necessary work at Bornite. Ambler Mining Co. was formed by the Anaconda Co. and Sunshine Mining Co.

to operate certain of their deposits. This company continued a vigorous exploration program. Other companies active in the Ambler district were Union Carbide Corp., Houston Oil and Minerals Corp., General Crude Oil Co., Noranda Exploration, Inc., and Falconbridge Nickel Mines, Ltd.

The Orange Hill copper-molybdenum deposit north of the Wrangell Mountains and east of the terminus of Nabesna Glacier was

examined and drilled by U.S. Borax & Chemical Corp. Inspiration Development Co. and Bear Creek did the necessary work to hold their Nabesna and Bond Creek properties.

In southeastern Alaska, assessment work was done on the Sumdum Chief copper deposit. Placid Oil Co. examined and drilled the Tracy and Magi Group copper-zinc deposit area. These deposits are east of Holkham Bay, about 45 miles south of Juneau.

Gold.—Gold is the most important metallic mineral produced in Alaska. The Division of Geological and Geophysical Surveys, Department of Natural Resources, State of Alaska (DG&GS), develops estimates for the number of producers and the quantity of gold recovered through observations by its mining geologist, mining engineer, and field personnel. It also uses information acquired from industry, private entities, and outside-agency sources. DG&GS estimates show about 60,000 troy ounces was recovered by about 200 operators in 1978, and about 65,000 troy ounces recovered by over 200 operators in 1979. In 1979, the number of respondents to the Bureau of Mines annual commodity canvass dropped to between 5% and 15% of the estimated number of placer gold producers. The quantity of gold produced by the respondents fell within about the same proportion of the estimated quantity of gold produced in Alaska.

Individual placer operators have reported recovering amounts of gold ranging from 1 troy ounce to several thousand troy ounces during the 1979 mining season. Gold was recovered chiefly from stream gravel and bench gravel deposits. Methods of recovery reported and observed were by bucket-line dredges, nonfloat washing plants, hydraulic suction dredging, small-scale mechanical methods, and hand methods.

Alaska Gold Co. operated its Dredge No. 5 on Dry Creek and Dredge No. 6 on the Submarine Beach, near the Nome Airport, during the 1978 mining season. Dredge No. 5 was not operated in 1979. Extensive drilling and preparatory work was accomplished to increase the rate of cold-water thawing ahead of the dredges. Two small dredges operated as family enterprises and several other placer operations were active on the Seward Peninsula. The Livengood area, about 60 miles north of Fairbanks, was very productive, and many other placers operated in the Fairbanks district. About 25 mines operated in the Fortymile

area and 15 mines in the Circle area. Other very active areas included Ruby, Long, Kantishna, Petersburg, Tofty-Eureka, McGrath-Ophir, Iditarod, Inoko, and Aniak.

Little Squaw Gold Mining Co. leased its placer claims in the Chandalar district to Whelan's Mining and Exploration, Inc. Whelan's moved in equipment, upgraded access routes, explored parts of the property, and prepared some ground for current and future mining.

The lode gold properties of Little Squaw in the Chandalar district were active during the 1978 and 1979 mining seasons. Chandalar Development Associates, lessees of the lode claims, rehabilitated the 100 ton-per-day mill, shops, camp, mining equipment, roads, and airstrips serving the Mikado and Little Squaw mines. Mine workings were reopened, and several stopes were prepared for mining. Test runs were completed on ores from each mine before work was terminated in early September by snow storms. Resumed operations are planned for May 1980.

Industry sources report a small amount of gold production from lode mines near Fairbanks and in the Willow Creek district, west of Palmer. A cleanup operation at the old Alaska Juneau mill has produced "lode" gold during 1978 and 1979.

Exploration interest in lode gold prospects continued to increase. The Big Hurrah mine and several other prospects were being investigated on the Seward Peninsula. In the Fairbanks area, Placid Oil Co. examined the Vetter gold-antimony property near Cleary Hill. St. Joe American Corp. did evaluation work at the Ryan Lode (Bartholomae) mine west of Fairbanks. The Independence mine, in the Willow Creek district was acquired by Starkey A. Wilson, who was having the underground workings reopened, mapped, and sampled.

Occidental Minerals Corp. was doing geological and geochemical work at the old Treadwell-group mines in preparation for planned diamond drilling in 1980. This property is just south of Douglas, on Douglas Island, and about 3 miles south of Juneau. Mapco, Inc., drilled and explored the Sweetheart Ridge gold-copper-zinc-lead prospect and nearby claims about 30 miles southeast of Juneau. Mapco also investigated gold prospects on Prince of Wales Island.

Lead and Zinc.—A relatively new deposit area about 20 miles southwest of Tok is attracting exploration projects. This area is

Table 4.—Alaska: Placer production of gold

Year	Mines producing	Material ¹ treated (thousand cubic yards)	Gold recovered		
			Troy ounces	Value (thousands)	Average value per cubic yard
1975	23	1,751	14,980	\$2,419	\$1,382
1976	26	1,699	22,605	2,833	1,667
1977	22	1,800	18,924	2,807	1,559
1978	21	1,455	18,599	3,600	2,474
1979	14	778	6,675	2,053	2,639

¹Excludes material treated primarily for the recovery of platinum.

often referred to as the Delta mineral belt. Major values are in zinc and lead, with minor amounts of copper and silver. Thirty-seven deposits have been reported in the district through 1979. They are described as stratiform sulfide deposits.

There were extensive exploration and drilling programs in the Delong Mountains, a western part of the Brooks Range about 80 miles northwest of Kotzebue. A group composed of General Crude, Houston Oil and Minerals, and WGM Inc., operated two exploration camps on their properties in 1979. After the 1978 season, they announced having 19 million tons of evaluated reserves averaging 3.35% lead, 9.3% zinc, and 1.4 troy ounces of silver per ton in the Wulik River area. Cominco American, Inc., continued drilling its Lik and Su properties.

Geologists of the Bureau of Mines discovered several mineral occurrences along the southern part of the National Petroleum Reserve of Alaska. They were engaged in mineral resource work on Reserve lands that are withdrawn from mineral entry. These occurrences are similar in mineralogy and character to the Red Dog - Wulik River deposits. Work by the Geological Survey suggests similarities in the respective host rocks. These discoveries may indicate a possible major mineral belt extending at least 120 miles easterly along the north side of the Brooks Range. This area is in the Misheguk Mountain and the Howard Pass Quadrangles, about 200 miles northeast of Kotzebue.

Anaconda has located prospects near Mount Schwatka, northeast of Fairbanks. The deposit area was subsequently included in the Yukon Flats National Monument.

Geologic trends favorable for zinc-lead-copper-silver deposits have been identified in southeast Alaska. One such trend on

Admiralty Island, extends from north of Greens Creek southerly past Gambier and Pybus Bays. Pan Sound Joint Venture (Noranda) has identified several prospects north of Greens Creek, and the "Greens Creek" prospect just south of it. The Anaconda Co. has the Pyrola Group about 6 miles south of the Greens Creek deposit, and WGM Inc., and some associates have several prospects west of Gambier and Pybus Bays. Almost 1,000 claims have been located along a similar trend on Kupreanof Island to the south of Admiralty Island and west of Petersburg. Locators included Amoco Minerals Co., Mapco, and Resource Associates of Alaska. Geologic work and some drilling was done during 1978 and 1979. BP Alaska Exploration, Inc., explored a group of claims on Zarembo, the next island south of Kupreanof.

The Riverside mine, north of Hyder, was examined and sampled by Nor-Quest Resources. Workings below the mill adit level were pumped out for the first time since 1927. The mine has produced lead, zinc, silver, gold, and tungsten.

Molybdenum.—U.S. Borax & Chemical Corp. has been developing a world-class molybdenite deposit at Quartz Hill, about 45 miles east of Ketchikan. After the end of the 1979 field season, U.S. Borax reported that since discovery in 1974, it has drilled 100,000 feet of core hole which indicated in-place reserves of 1.3 billion tons grading 0.13% molybdenite at 0.05% cutoff. This is equivalent to 2 billion pounds of contained molybdenum and is a 20% increase in the estimated in-place reserves over that reported at the end of 1978. U.S. Borax has invested \$14.5 million in its Quartz Hill project to date. The proposed budget for 1980 is over \$5 million. A major portion of the budget will be for continuation of the

environmental baseline data gathering programs. Access road construction has not been permitted, so all transport to and from the Quartz Hill project to tidewater has been by helicopter. The project is within the Misty Fiords National Monument, created on December 5, 1978.

AMAX Exploration, Inc., drilled a molybdenum occurrence and some base-metal sulfide deposits in the Groundhog Basin area east of Wrangell.

A molybdenum property on Mount Ogdén, on the Alaska-Canada boundary, was discovered in 1978. It is about 45 miles east of Juneau. Geologic mapping and surface sampling were followed by diamond drilling and some underground work in 1979 on the Canadian side of the located area. Bema Industries Ltd. reported discovery and initial testing of the Y-zone molybdenum deposit in 1979 after tracing float up the Wright Glacier, which is in Alaska, west of the Boundary ridge.

Nickel and Cobalt.—Inspiration Development Co. did geologic work and diamond drilling in 1978 and 1979 on its groups of unpatented nickel-cobalt-copper claims on Yakobi Island and at Mirror Harbor, on Flemming and Chichagof Islands. There was no reported activity at the Nunatak Group of patented claims near Brady Glacier, located in Glacier Bay National Monument.

Silver.—Industry and DG&GS sources estimate about 6,500 troy ounces of silver was produced as an alloy with placer gold. An unknown quantity of silver was shipped in ore by the Berry Brothers from a silver lode mine in the Wrangell Mountains.

The Greens Creek prospect on Admiralty Island may become the first major silver mine in Alaska. It was discovered in 1975 and explored by diamond drill holes from surface stations. After concluding surface drilling, the data released by Noranda Exploration, Inc., the operating partner, indicated about a million tons of reserves averaging 10.4% zinc, 3.29% lead, 0.4% copper, 0.13 troy ounce of gold per ton, and 9.40 troy ounces of silver per ton. The 1978-79 program included driving about 4,500 feet of 10- by 12-foot adit in the hanging wall parallel to the deposit, cutting drill stations every 150 feet opposite the deposit, and drilling a fan of holes at each station. This drilling totaled about 20,000 feet. The reserve tonnage and the average silver grade were both increased significantly by this exploration. The property is owned by the

Pan Sound Joint Venture. The venturers are Noranda Exploration, Inc., Marietta Resources International, Texas Gas Exploration, Inc., Mitsubishi Corp., and Bristol Bay Native Corp.

Tin.—Lost River Mining operated a tin placer washing plant on Cape Creek and produced cassiterite concentrates. Lee Bros. Dredging Co., Inc., produced some concentrates in the same general area on the Seward Peninsula. Several tons of tin concentrate was recovered as a coproduct at the Miller-Neubauer gold placer near Tofty, about 100 miles west of Fairbanks.

Tungsten.—Tungsten concentrates were recovered by the small mill at the Yellow Pup mine. The mine is on Gilmore Dome, about 15 miles northeast of Fairbanks.

NONMETALS

Asbestos.—Drilling and other exploration projects were conducted on the Eagle Asbestos prospect by Alaska Asbestos Co. This company is reported to be a partnership owned equally by Tanana Asbestos Corp., MacIntyre Mines Ltd., and General Crude Oil Co. Tanana Asbestos Corp. is a wholly owned subsidiary of Doyon, Ltd., an Alaska Native Corp. The prospect is on Doyon, Ltd., land north of Tok. Drilling is said to have confirmed the occurrence of fiber-bearing ultrabasic rocks extending about 1,200 feet on strike and 1,000 feet down dip.

ASARCO Incorporated and Canadian Superior Exploration Ltd., are active in the Eagle area on an asbestos program.

Barite.—Production of crude ore was resumed in 1979 at the Castle Island deposit of Chromalloy American Corp., in Duncan Canal, east of Petersburg. The barite was shipped to an outside processor.

The Lime Point deposit is again of interest. Adjoining land and offshore claims have been located and recorded. The property is on the east shore of Hetta Inlet, Prince of Wales Island, about 45 miles southeast of Ketchikan.

The Anaconda Co. is exploring the base-metals-and-barite deposit of Alyu Mining Co. The deposit is north of Jarvis Creek, about 40 miles northwest of Haines.

Barite is a prominent mineral in some of the stratiform and related zinc-lead deposits in the western part of the Brooks Range and has been found as the dominant mineral at several mineralized areas.

Gem Stones.—Most of the reported gem stone production consists of jade and soapstone. The jade is usually collected in the

Jade Mountain area and barged westerly down the Kobuk River to Kotzebue. Part of the jade is used there in Native handicrafts; the balance is shipped to other domestic or foreign destinations. Most of the soapstone is produced and marketed by the Hill family of Palmer, which mines it near the head of Grubstake Gulch in the Talkeetna Mountains.

Gypsum.—Domtar, Inc., a Canadian company, acquired the old Pacific Coast gypsum mine when it purchased the gypsum assets of Kaiser Cement and Gypsum Corp. Domtar has located a block of new claims adjoining the patented claims of the old mine. This property is on the east coast of

Chichagof Island, about 35 miles southwest of Juneau.

Sand and Gravel.—Sand and gravel production reported in 1978 totaled 69.3 million short tons; in 1979, reported production was 50.9 million short tons. All of the sand and gravel produced in 1978 and 1979 was classified as construction aggregate. Principal uses of the total aggregate reported in the biennium were as follows: fill, 78% in 1978 and 88% in 1979; concrete aggregate, 11% in 1978 and 8% in 1979; roadbase and coverings, 4% in 1978 and 3% in 1979; and asphaltic concrete, 5% in 1978 and 1% in 1979.

Table 5.—Alaska: Construction sand and gravel sold or used, by major use category

Use	1977			1978			1979		
	Quantity (thousand short tons)	Value (thousands)	Value per ton	Quantity (thousand short tons)	Value (thousands)	Value per ton	Quantity (thousand short tons)	Value (thousands)	Value per ton
Concrete aggregate	7,217	\$34,734	\$4.81	7,960	\$40,113	\$5.04	4,161	\$20,457	\$4.92
Plaster and gunite sands	NA	NA	NA	W	W	W	W	W	W
Concrete products	77	309	4.00	W	W	W	W	W	W
Asphaltic concrete	3,205	12,499	3.90	3,748	14,948	3.99	392	1,676	4.28
Roadbase and coverings	2,605	6,718	2.58	2,863	7,538	2.63	1,422	3,701	2.60
Fill	53,113	79,571	1.50	54,253	81,373	1.50	44,596	78,004	1.75
Snow and ice control	NA	NA	NA	334	W	W	W	W	W
Other uses	209	423	2.02	30	40	1.34	82	267	3.24
Total ¹ or average	66,426	134,251	2.02	69,300	145,300	2.10	50,900	104,905	2.06

NA Not available. W Withheld to avoid disclosing company proprietary data; included in "Total."

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

Table 6.—Alaska: Construction sand and gravel sold or used by producers

	1977			1978			1979		
	Quantity (thousand short tons)	Value (thousands)	Value per ton	Quantity (thousand short tons)	Value (thousands)	Value per ton	Quantity (thousand short tons)	Value (thousands)	Value per ton
Sand	59,421	\$119,655	\$2.01	63,143	\$131,215	\$2.08	45,551	\$91,845	\$2.02
Gravel	7,005	14,595	2.08	6,152	14,057	2.29	5,349	13,060	2.44
Total ¹ or average	66,426	134,251	2.02	69,300	145,300	2.10	50,900	104,905	2.06

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

Stone.—All of the stone reported produced in 1978 and 1979 was crushed stone. No dimension stone was reported. The principal uses reported in 1979 were unspecified aggregate (86.5%), dense roadbase (10.4%),

surface treatment (0.9%), agricultural limestone (0.8%) and rip rap and jetty (0.6%).

¹State mineral specialist, Bureau of Mines, Juneau, Alaska.

Table 7.—Alaska: Crushed stone¹ sold or used by producers, by use

(Thousand short tons and thousand dollars)

Use	1977		1978		1979	
	Quantity	Value	Quantity	Value	Quantity	Value
Agricultural limestone	---	---	---	---	28	142
Concrete aggregate	7	93	7	93	W	W
Bituminous aggregate	533	1,539	23	42	W	W
Dense-graded roadbase stone	3,309	15,487	3,240	13,994	379	1,456
Surface treatment aggregate	4	57	4	57	32	121
Other construction aggregate and roadstone	8	19	---	---	3,163	13,479
Riprap and jetty stone	77	156	116	232	23	50
Railroad ballast	70	143	3	12	---	---
Manufactured fine aggregate (stone sand)	---	---	43	217	---	---
Fill	---	---	2	---	17	68
Other uses ²	---	---	---	---	13	142
Total ³	4,008	17,493	3,437	14,649	3,656	15,458

W Withheld to avoid disclosing company proprietary data; included with "Other uses."

¹Includes limestone, granite, traprock, and miscellaneous stone.²Includes stone used for terrazzo and exposed aggregate (1979), and uses indicated by symbol W.³Data may not add to totals shown because of independent rounding.

Table 8.—Principal producers

Commodity and company	Address	Type of activity	Region
Barite:			
Chromalloy American Corp	Box 650 Petersburg, AK 99833	Open pit	Southeastern Alaska.
Gold:			
Bliss and Sons	129 East 11th Ave. Anchorage, AK 99501	Placer-dredge	Northwestern Alaska.
Engstrom and Son Dredging Co	Box 536 Nome, AK 99762	do	Seward Peninsula.
Heflinger Mining and Equipment Co	409 Clara St. Fairbanks, AK 99701	Placer	Yukon River.
Little Squaw Gold Mining Co	Box 184 Spokane, WA. 99210	Lode Placer	Do.
Marvel Creek Mining Co	Nyak, AK 99642	Placer-dredge	Kuskokwim River.
Miscovich Mining Co	Box 23 McGrath, AK 99627	Hydraulic	Do.
Peters Creek Mines	700 Ash Pl. Anchorage, AK 99501	Placer	Cook Inlet- Susitna.
Alaska Gold Co	437 Madison Ave. New York, NY 10022	Placer-dredge	Seward Peninsula.
Asamera Oil (U.S.), Inc	Box 118 Denver, CO 80201	Placer	Yukon River.
Ruby Mining Co	Box 1 Ruby, AK 99768	do	Do.
G. A. Hanks and Sons	Chicken, AK 99732	do	Do.
Candle Creek Placers	Candle Creek, AK 99728	do	Do.
Flat Creek Placers	Flat Creek, AK 99584	do	Do.
Sand and gravel:			
Alaska Brick Co	7800 Lake Otis Rd. Anchorage, AK 99507	Pit	Cook Inlet-Susitna.
Alaska Sand and Gravel, Inc	University Ave. Fairbanks, AK 99707	Pit	Yukon River.
Anchorage Sand and Gravel	1813 East 1st Ave. Anchorage, AK 99501	Pit	Cook Inlet- Susitna.
Castle Construction Co	8121 Sand Lake Rd. Anchorage, AK 99502	Pit	Do.
Central Construction Co., Inc	428-117 2d Ave. Seattle, WA 98101	Pit	Northwestern Alaska.
Green Associated	Pouch 85 Fairbanks, AK 99707	Pit	Southeastern Alaska.
Rogers and Babler Inc	4607 East Tudor Rd. Anchorage, AK 99507	Pit	Cook Inlet- Susitna.
Energy Co. of Alaska	do	Pit	Do.
Fairbanks Sand and Gravel Inc	2 1/2 Mile Richardson Highway Fairbanks, AK 99707	Pit	Yukon River.
Alaska Aggregate Corp	7800 Lake Otis Parkway Anchorage, AK 99507	Pit	Cook Inlet- Susitna.
Stone:			
Burgess Construction Co	394 Hamilton Fairbanks, AK 99707	Quarry	Yukon River and Southeastern Alaska.
Ketchikan Pulp Co	Box 11619 Ketchikan, AK 99901	do	Southeastern Alaska.

Table 8.— Principal producers —Continued

Commodity and company	Address	Type of activity	Region
Stone—Continued			
Olsen and Sons Logging Ltd -----	Box 950 Petersburg, AK 99833	Quarry -----	Southeastern Alaska.
Yutan Construction Co -----	Box 1775 Fairbanks, AK 99707	-----do -----	Yukon River.
Moore Construction Co. Inc -----	Box 8100 Ketchikan, AK 99901	-----do -----	Southeastern Alaska.
Soderberg Logging and Construction Co.	Box 400 Kake, AK 99830	-----do -----	Do.
Welborn Construction, Inc -----	Box 634 Kodiak, AK 99615	-----do -----	Kodiak.
Tin:			
Lee Bros. Dredging Co., Inc -----	Box 816 Nome, AK 99762	Dredge -----	Seward Peninsula.
Lost River Mining -----	Box 411 Nome, AK 99762	Placer -----	Do.
Miller and Neubauer -----	Manley Hot Springs, AK 99756	-----do -----	Yukon River.

