



# 2005 Minerals Yearbook

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## ALASKA

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## LEGEND

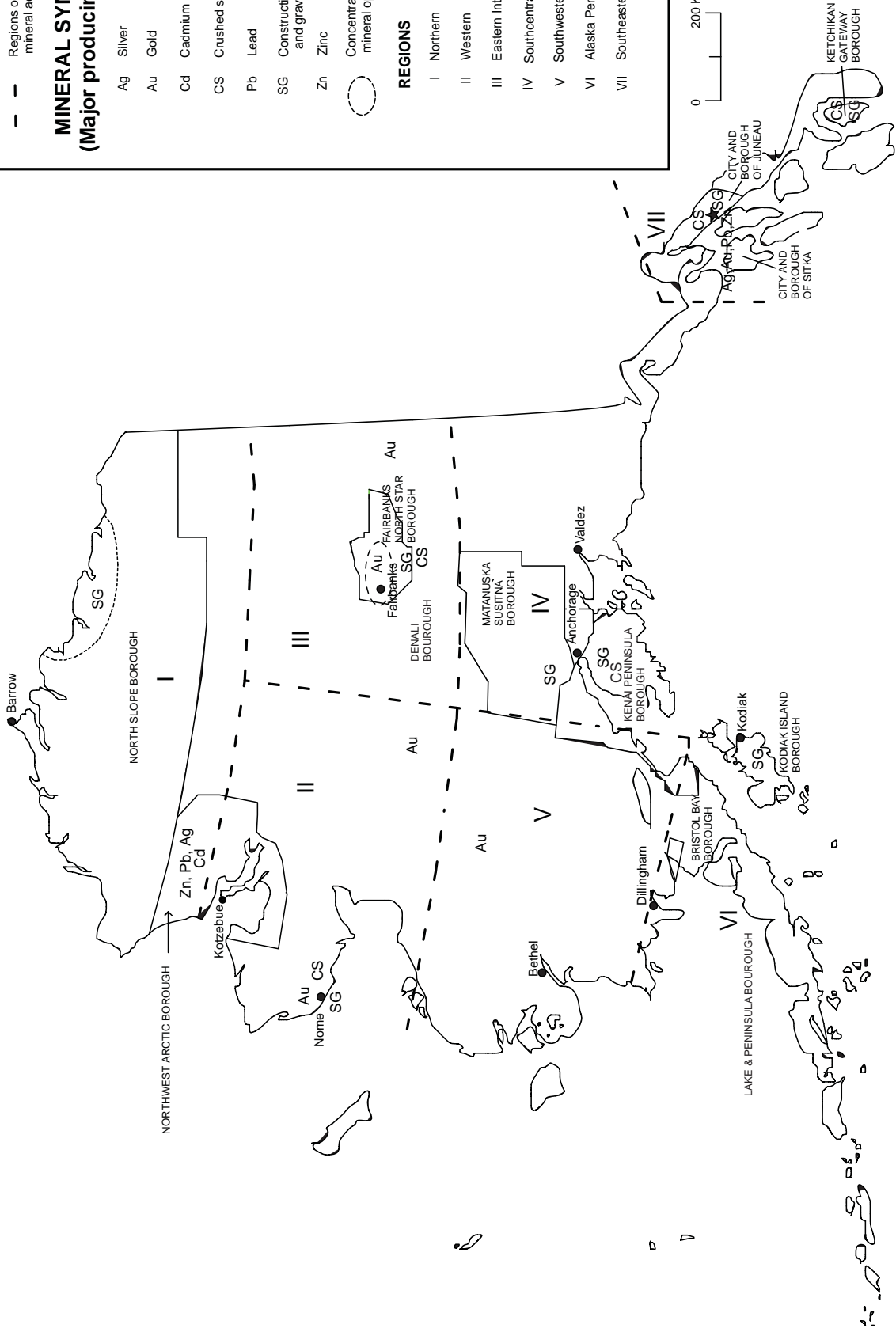
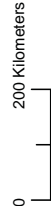
- Borough boundary
- ★ Capital
- City
- - - Regions of mineral activity

## MINERAL SYMBOLS (Major producing areas)

- Ag Silver
- Au Gold
- Cd Cadmium (byproduct)
- CS Crushed stone
- Pb Lead
- SG Construction sand and gravel
- Zn Zinc
- Concentration of mineral operations

## REGIONS

- I Northern
- II Western
- III Eastern Interior
- IV Southcentral
- V Southwestern
- VI Alaska Peninsula
- VII Southeastern



# THE MINERAL INDUSTRY OF ALASKA

In 2005, Alaska's nonfuel raw mineral production was valued<sup>1</sup> at \$1.47 billion, based upon annual U.S. Geological Survey (USGS) data. This was a \$200 million, or a 15.7% increase, from the State's total nonfuel mineral value for 2004, which was up \$190 million, or up 17.6% from that of 2003. The State ranked 13th among the 50 States in total nonfuel mineral production value following three consecutive years as 12th and accounted for about 2.7% of the U.S. total value. Yet, per capita, the State ranked second in the Nation in the value of its mineral industry's nonfuel mineral production; with a population of 664,000, the value of production was about \$2,220 per capita.

During 2005, metallic minerals accounted for nearly 96% of the total value of Alaska's nonfuel mineral production. Nearly all the metals value was the result of zinc, lead, gold, and silver production (in descending order of value) from Teck Cominco Alaska Inc.'s Red Dog Mine near Kotzebue in northwestern Alaska and the Greens Creek Mine (a joint venture of Kennecott Mineral Co. and Hecla Mining Co.) in southeastern Alaska southwest of Juneau and most of the gold production from Kinross Gold Corp.'s Fort Knox Mine near Fairbanks in east-central Alaska and from the Greens Creek Mine. Nearly all other gold production was from placer gold resources. Although the production levels of silver and zinc decreased somewhat from those of 2004, increases in the average unit values of each, especially in that of zinc, resulted in significant increases in the values of those mineral commodities. In the case of zinc, the rise in value and unit value was substantial, its total value rising by more than \$190 million. Although production was down somewhat for gold and lead, their unit values rose, the largest increase being that of lead, up nearly 11%.

Although crushed stone production was only up slightly, the value of crushed stone was up nearly 10%, or about \$1.4 million. An 8% decrease in construction sand and gravel production resulted in an about 7%, or a \$3.5 million decrease, in its value (table 1).

In 2005, Alaska continued to rank first in the quantities of zinc and silver produced, second in lead, and was third of 11 gold-producing States (second in 2004). The State ranked first in the production of cadmium as a byproduct of zinc production. Production of peat in Alaska was not reported to the USGS partly because of reporting difficulties associated with the seasonal, intermittent nature of peat mining in the State. The Alaska Department of Natural Resources (ADNR), Division of Geological and Geophysical Surveys (DGGs), estimated peat production to be about 62,500 cubic meters, valued at

about \$810,000 (Hughes and Szumigala, 2006<sup>2</sup>). The DGGs provided the following narrative information;<sup>3</sup> the data are based on DGGs surveys and estimates.

## Exploration, Development, and Drilling Activities

Estimated exploration expenditures during 2005 were about \$104 million, which was a substantial increase compared with expenditures of \$71 million in 2004 (Hughes and Szumigala, 2006\$). Although most of the effort was directed toward gold projects, some expenditure was noted for nickel-copper and platinum-group metals, diamond, and base metals. Exploration was conducted across Alaska, but primarily in southwestern Alaska. There were 16 exploration projects with budgets greater than \$1 million. The Fairbanks mining district gold projects (Kinross Gold Corporation), the Pebble copper-gold project (Northern Dynasty Minerals Ltd.), and the Donlin Creek gold project near Crooked Creek on the Kuskokwim River accounted for most of the exploration expenditures and drill footage. Advanced exploration projects included the Donlin Creek gold project (Calista Corp., NovaGold Resources Inc., and Placer Dome Inc.) and the Pebble copper-gold project (Northern Dynasty Minerals Ltd.).

Base-metal exploration was led by NovaGold Resources Inc.'s exploration of the Arctic volcanogenic massive sulfide deposit in the Brooks Range. Platinum and associated metals exploration continued at the MAN project in the Alaska Range (Anglo American Exploration Ltd. and Nevada Star Resource Corp.) and at Union Bay in southeastern Alaska (Freegold Ventures Ltd., Lonmin Plc, and Pacific North West Capital Corp.).

Gold remained a major exploration target, but copper-gold porphyry systems (grouped with polymetallic deposits) were the major exploration target in 2005. Base-metal exploration expenditures decreased significantly from 2004 levels. Platinum-group-metal exploration was unchanged.

Investment in mine development increased to \$348 million for 2005, which was a significant increase compared with the \$209 million spent in 2004. The increase was primarily owing to significant advancements in the development of five mining projects.

Teck Pogo Inc. continued construction at the Pogo project after the company received its final permits and started construction in 2004. An all-weather, 80-kilometer (km) road was completed between Richardson Highway and the project site. In addition, construction of ground-level mining operations and associated facilities were nearly completed by yearend.

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<sup>1</sup>The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the mineral products. Production may be measured by mine shipments, mineral commodity sales, or marketable production (including consumption by producers) as is applicable to the individual mineral commodity.

All 2005 USGS mineral production data published in this chapter are those available as of December 2006. All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—can be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

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<sup>2</sup>References that include a section mark (\$) are found in the Internet References Cited section.

<sup>3</sup>Richard A. Hughes of the Alaska Department of Commerce, Community and Economic Development's Division of Community and Business Development, and David J. Szumigala, Senior Mineral Geologist with the Alaska Department of Natural Resources' Division of Geological and Geophysical Surveys, authored the text of the State mineral industry information provided by that State agency.

Fairbanks Gold Mining Co., Inc., (a wholly owned subsidiary of Kinross Gold) continued advanced stripping at the Fort Knox Mine. Coeur Alaska Inc. continued development investment at its Kensington project. However, construction efforts were suspended on the tailings facility, pending resolution of a nongovernment organization's lawsuit to prevent the disposal of tailings in a nearby alpine lake. The lawsuit was advanced to the Ninth District Court. Kennecott Greens Creek Mining Co. allocated expenditures for further development of its Greens Creek underground mine near Juneau.

Drilling was conducted on various projects across Alaska during 2005, covering all phases of mining, including exploration, development, and production. Drilling totals for 2005 were 181,000 meters (m) of core drilling, 12,700 m of reverse-circulation drilling, and 1,020 m of placer auger/churn drilling.

Extensive drilling programs were conducted in most areas of the State during the year. Northern Dynasty continued a very aggressive program at its Pebble property. Liberty Star Gold Corp. also began an extensive drilling project at the Big Chunk property near Pebble. Fairbanks Gold Mining Co., Inc. continued ore definition and exploration drilling at the Fort Knox Mine in the Fairbanks mining district. In southeastern Alaska, Kennecott Minerals Co. had the largest program, including exploratory drilling associated with further development of its Greens Creek Mine. Other drilling programs in southeastern Alaska were conducted by Coeur Alaska Inc. at the Kensington and Jualin properties, by Freegold Ventures Ltd./Pacific North West Capital Corp./Lonmin Plc at the Union Bay property, by Niblack Mining Corp. on the Niblack property, and by Quaterra Resources Inc. at the Duke Island property. In south central Alaska, major drilling programs were conducted by Kennecott Exploration Co. at the Whistler property, by Piper Capital Inc. on the Golden Zone property, and by Anglo American Exploration (USA) Inc. on the MAN property. AngloGold Ashanti (USA) Exploration Inc. drilled at several properties including the LMS and Terra projects. NovaGold Resources Inc. drilled at the Rock Creek, Big Hurrah, Khotol and Arctic properties in the northern and western regions. Teck Cominco Alaska Inc. drilled in the Red Dog area and on the Pogo property, and St. Andrew Goldfields Ltd./Mystery Creek Resources Inc. continued underground drilling at the Nixon Fork property.

## Commodity Review

The production estimates included in this report were compiled from DGGs questionnaires and telephone interviews of Alaskan Native corporations, agencies, and municipalities (Hughes and Szumigala, 2006§). Production data were collected on metals (gold, lead, silver, and zinc), industrial minerals (rock and sand and gravel), and coal and peat. In 2005, total minerals industry employment was estimated to be 2,821 full-time-equivalent jobs compared with 3,048 in 2004 (Hughes and Szumigala, 2006§).

## Industrial Minerals

**Crushed Stone and Sand and Gravel.**—Production of crushed rock decreased to 2.5 million metric tons (Mt) in 2005, down significantly from the 6.6 Mt produced in 2004. Sand and gravel production also declined in 2005, decreasing to 15.1 Mt from the 17.7 Mt produced in 2004. The data reflect some shortfall in reporting, but mainly reflect curtailments or reductions in production (Hughes and Szumigala, 2006§).

## Metals

**Gold.**—Fairbanks Gold Mining Co., Inc. operated the Fort Knox Mine during 2005. However, its satellite True North Mine remained on care-and-maintenance status after having been closed indefinitely at yearend 2004. Approximately 13.1 Mt of ore was mined and milled during the year, from which about 10,240 kilograms (kg) of gold was recovered. This was slightly less than the quantity recovered in 2004. Stripping volumes at Fort Knox totaled 57.4 Mt. The number of employees at the mine and mill averaged 411 during the year.

Reports of placer gold production were limited but reflected a decrease in production to 765 kg in 2005. The 2004 reported production was 873 kg (Hughes and Szumigala, 2006§).

**Zinc, Lead, and Silver.**—The Red Dog Mine was the world's leading producer of zinc. Red Dog is 100% owned by Teck Cominco Limited and is operated by its subsidiary (Teck Cominco Alaska Inc.) under an agreement with NANA Regional Corporation, Inc. (an Alaskan Native-owned corporation). The mine is located in the DeLong Mountains of Alaska's Brooks Range. This remote site is approximately 144 km north of Kotzebue and 88 km from the Chukchi Sea.

Red Dog dominated Alaska's mineral production value and accounted for more than 64% of the annual value of Alaska's mineral industry. The mill processed 3.09 Mt at an average grade of 21.7% zinc. Sulfide concentrates contained 568,000 metric tons (t) of zinc, and 102,000 t of lead; the mine was credited with about 61,300 kg of recovered silver. Red Dog reported an operating profit of \$325 million compared with \$207 million for 2004. The higher profits were attributed to an increase in average metal prices (Teck Cominco Limited, 2006§). According to Platts Metals Week published quotations, the North American price for Special High Grade zinc was about \$1.48 per kilogram (\$0.67 per pound) in 2005 compared with \$1.17 per kilogram (\$0.53 per pound) in 2004.

The Greens Creek Mine produced a silver-gold dore and sulfide concentrates that contained zinc and lead. In 2005, about 651,000 t of ore was milled, representing an 11% decrease compared with that of 2004 (Rio Tinto plc, 2006§). Metal production from the milled ore totaled 2,260 kg of gold, 16,500 t of lead, 302,000 kg of silver, and 52,900 t of zinc.

## Government Programs, Activities, Reclamation Awards

The Alaska DGGGS continued its active participation in the STATEMAP program, a component of the USGS National Cooperative Mapping Program, which is congressionally mandated by the National Cooperative Geologic Mapping Program (NCGMP). The USGS distributes Federal funds through NCGMP to support geologic mapping efforts utilizing a competitive funding process. The NCGMP has three primary components: FEDMAP, which funds Federal geologic mapping projects, STATEMAP, which is a matching-funds grant program with State geological surveys, and EDMAP, a matching-funds grant program with universities that has a goal to train the next generation of geologic mappers.

By yearend 2005, in excess of 2.46 million hectares (ha) (6.1 million acres - more than 9,500 square miles) of Alaska was flown over for detailed geophysical surveys. About 1.1 million ha (2.7 million acres) of 1:63,360-scale geologic maps were produced. These surveys were conducted as part of the State-funded Alaska Airborne Geophysical/Geological Mineral Inventory (AGGMI) Program. Federal monies through the STATEMAP Program funded some of the geologic mapping within the AGGMI Program.

During the year, geologists from the Mineral Resources Section of the DGGGS mapped and sampled 33,929 ha (131 square miles) around the historic Liberty Bell Mine near Healy. Geochemical data from this work was released in November. A 1:50,000-scale geologic map was expected to be available in late 2006.

DGGGS also released a series of new 1:50,000-scale surficial and bedrock geologic maps of the Council and Big Hurrah areas of the southern Seward Peninsula as part of an integrated program following up the airborne geophysical survey results previously released by DGGGS in 2003 and fieldwork conducted in 2004.

In addition, DGGGS released new trace-element geochemical data from reanalyses of archived stream-sediment pulps originally collected in 1982 near the town of Livengood. Of the 1,597 stream-sediment samples originally collected in 1982, DGGGS recovered 952 samples for reanalyses. Revenue for these new geochemical analyses was provided by AngloGold Ashanti North America Inc. These data complemented data collected over 33,670 ha (130 square miles) of the central Livengood Quadrangle in 2001 and 2003 by DGGGS.

In early 2005, DGGGS released a 54,390-ha (210-square-mile) airborne magnetic and electromagnetic geophysical survey in the southern Goodpaster region of the Big Delta Quadrangle. DGGGS also funded and acquired airborne magnetic and electromagnetic geophysical surveys for 244,495 ha (944 square miles) of highly prospective areas for mineral deposits in the Circle, Fairbanks, Goodpaster, and Richardson mining districts. The survey maps and data for these surveys were to be released in 2006. In addition, induced electromagnetic conductivity and total magnetic field geophysical surveys were flown over 375,548 ha (1,450 square miles) of mineral-rich lands in the southern National Petroleum Reserve-Alaska (NPR-A). These surveys were funded by the U.S. Bureau of Land Management (BLM) and were to be released by DGGGS in early 2006. The

NPR-A surveys included 9,656 line-kilometers (6,000 line miles) flown at a 400-meter (quarter-mile) spacing with sensors 61 meters (200 feet) above the ground. The area around the Drenchwater Creek Sedex-type lead-zinc-silver deposit was flown at a 200-meter (one-eighth mile) line spacing. Data from the NPR-A surveys, plus all historic DGGGS publications, and most USGS publications concerning Alaska's geology and resources are available for download at no charge at the DGGGS Web site (<http://www.dggs.dnr.state.ak.us>).

The State of Alaska, through DGGGS, funded an airborne geophysical survey for the Alaska Highway corridor from slightly west of Delta Junction to slightly east of the Alaska-Yukon border. The survey was acquired and processed by Fugro Airborne Surveys and managed by Stevens Exploration Management Corp. Aeromagnetic and electromagnetic data were obtained for 788,651 ha (3,045 square miles), over a 25.7-km (16-mile) wide swath centered on the Alaska Highway. The survey was to be released in early 2006. Preliminary surficial and bedrock geologic mapping studies were planned for the 2006 survey program.

The BLM Sustainable Mineral Development Reclamation Award in the small operator category was presented to a placer miner prospecting on Gold Creek along the Dalton Highway. The award recognized his conscientious and timely reclamation efforts toward maintaining a stable channel and flood plain. The awardee replicated the original stream channel by matching its grade and channel width to adjacent undisturbed areas. Two other miners, as well as the American Reclamation Group LLC, received annual State Reclamation Awards from the Alaska Department of Natural Resources (DNR). The awards were presented in recognition of their respective placer mining reclamation efforts in the Squaw Creek, Fairbanks, and Kaiyuh mining districts. Specifically, the American Reclamation Group successfully heap-leached the remaining ore and then reclaimed the heap leach and mine site area to closure standards at the bankrupt Illinois Creek gold-silver mine. The reclamation efforts were conducted without use of State funds, although the mine was acquired by the State as a result of the bankruptcy.

In 2005, an area plan and environmental impact statement (EIS) process were begun by the BLM for approximately 3.7 million ha (9.2 million acres) of land in the southern NPR-A. The BLM also issued an amended integrated activity plan and an EIS for the northeast NPR-A, and a draft EIS was released for the 2.9 million ha (7.1 million acres) of BLM-managed land in the East Alaska Resource Management Plan (RMP). In addition, a draft RMP/EIS was issued for the Ring of Fire lands in the southeastern and south central regions of the Alaska Peninsula, and the Aleutian Islands managed by the BLM. Also, a decision record was issued by the BLM to amend all RMP, NPR-A and management framework integrated activity plans for all BLM-managed lands in Alaska, so as to update the direction for wildland fire and fuels management.

The USGS, in cooperation with other agencies, continued a 5-year project titled "Tintina Metallogenic Province Integrated Studies on Geological Framework, Mineral Resources, and Environmental Signatures," as well as a project titled "Regional Geologic and Mineral Deposit Data for Alaskan Economic Development." The economic development project focused



on the Seward Peninsula and the central part of southwestern Alaska. Stream-sediment, heavy-mineral concentrate, and stream-water samples were collected by the USGS from more than 400 locations in the Taylor Mountains Quadrangle. Gold was observed in 85 of the 427 panned-concentrate samples collected in 2005. The project also included reconnaissance geologic mapping and ground magnetic traverses. Studies also were continued by the USGS on the base-metal resource potential of the Nome Group on the Seward Peninsula.

BLM geologists visited 184 mineral localities and collected 645 samples as part of their continuing mineral investigation in the Aniak Mining District, southwestern Alaska. The Aniak studies were carried out in cooperation with the USGS, DGGs, Geological Society of America, and the Calista Native Corp. The BLM also initiated mineral investigations in the Taylor Mountains Quadrangle in cooperation with ongoing USGS studies.

Cooperative projects also were conducted by the USGS, DGGs, and BLM under the Minerals Data and Information Rescue in Alaska (MDIRA) program. DGGs-managed, MDIRA-funded projects included compilation of an Alaska bedrock and surficial geology map index, a DGGs lithochemical data file, and an Alaska geochemical data file, as well as the creation of a comprehensive DGGs database system. DGGs continued working on a project to make all USGS Bulletins and Professional Papers pertaining to Alaska viewable and retrievable online through the DGGs Web site. DGGs continued a similar project that includes Alaska-related USGS Open-File Reports, Field Studies, Geologic Quadrangle Maps, Mineral Resources Maps, and various other short-series USGS publications. Other MDIRA-funded projects were in progress during the year at other divisions of DNR, at the University of Alaska Fairbanks, and with private contractors.

The State of Alaska continued efforts to finalize land transfers from BLM's Federal Government ownership (BLM) to other ownership, including Alaska Native allottees, Alaska Native corporations, the State of Alaska, municipalities, the Alaska Mental Health Land trust, and the University of Alaska. The State was working toward accelerating the remaining land transfers by 2009, the 50th anniversary of Alaska statehood and the deadline imposed for the land transfers by Federal Senate bill 1466. The State had about 5.87 million ha (14.5 million acres) of grant entitlement land, and 13.8 million ha (34 million acres) of selected lands remaining at yearend. DNR agencies have identified about 8.1 million ha (20 million acres) of these lands as having moderate-high to high potential for minerals, oil and gas, surface resources, or access corridors. About 2.4 million ha (6 million acres) is dual selected by both State agencies and Native corporations, thus introducing some uncertainty as to final ownership for these lands upon completion of the transfer process. During the year, the DGGs reviewed the 1990s priorities for the selected lands and reprioritized these lands based upon new geologic information, new mineral deposit models, and other information. The reprioritization process was multiphase and iterative. DGGs reviewed existing geologic and mineral deposit information using MapInfo GIS software, including geologic

maps, geophysical data, locations of 7,000 mineral occurrence sites categorized by mineral deposit model (Alaska Resource Deposit Files; <http://ardf.wr.usgs.gov/>) geochemical samples (e.g., DGGs web geochemistry, <http://www.dggs.dnr.state.ak.us/webgeochem/index.jsp>), State and Native selected lands, and current Federal and State mining claims, as well as results from DGGs probabilistic modeling created for the 1992 mineral endowment estimation for selected areas. In late September, a final State Ownership Priority List was completed for 7.3 million ha (18 million acres) of Alaska lands having moderate to high potential for mineral and energy resources. Future work was expected to include prioritizing remaining State land selections as needed to complete State land entitlement.

The U.S. Army Corps of Engineers released the draft EIS and draft Feasibility Report for improvements to the DeLong Mountain Transportation System (DMTS), and the Red Dog Mine port, and associated facilities. Included in the report was a proposal to build a longer loading trestle that would extend about 500 m (1,600 feet) into the Bering Sea, dredging a turning basin on the north side of the trestle, and dredging a slot from the turning basin that would extend about 6.4 km (4 miles) into deeper water in the Bering Sea. The proposed changes would allow for direct loading and unloading of large oceangoing ships rather than the current method of using intermediate barges. It also was anticipated that the Red Dog Mine and area villages would benefit from the proposed changes through reductions in transportation costs for fuel and supplies.

The Alaska Department of Transportation & Public Facilities continued construction of several roads along State-controlled property that would provide access to the Kensington gold project near Juneau. A 4-km (2.5-mile) road costing nearly \$1 million was completed from the current northend of the Juneau road system to a ferry terminal at Cascade Point. In addition, the bidding process was begun for construction of a 7.9 km (4.9-mile) road that would permit access from Slate Creek Cove to the Kensington mill site on the west side of Berners Bay. The road construction, expected to cost \$1.1 million, was to be funded under the State's industrial roads program.

More than 1.9 million ha (4.6 million acres) of Alaska was covered in wildfires during 2005, following the record-breaking 2.6 million ha (6.4 million acres) burned in 2004. Mining and construction projects were adversely affected by the fires and the smoke that obscured large portions of the State throughout much of the summer.

## Internet References Cited

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TABLE 1  
NONFUEL RAW MINERAL PRODUCTION IN ALASKA<sup>1,2</sup>

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	2003		2004		2005	
	Quantity	Value	Quantity	Value	Quantity	Value
Gemstones	NA	12	NA	12	NA	12
Sand and gravel, construction	9,980	55,700	9,430	51,600	8,660	48,100
Stone, crushed	2,640 <sup>3</sup>	15,300 <sup>3</sup>	2,270 <sup>r</sup>	14,200 <sup>r</sup>	2,360	15,600
Combined values of cadmium (byproduct of zinc concentrates, [2004-05]), gold, lead, silver, stone (crushed granite and shell, [2003]), zinc	XX	1,010,000	XX	1,200,000 <sup>r</sup>	XX	1,410,000
Total	XX	1,080,000	XX	1,270,000 <sup>r</sup>	XX	1,470,000

<sup>r</sup>Revised. NA Not available. XX Not applicable.

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

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

<sup>3</sup>Excludes certain stones; kind and value included with "Combined values" data.

TABLE 2  
ALASKA: CRUSHED STONE SOLD OR USED, BY KIND<sup>1,2</sup>

Kind	2004			2005		
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Number of quarries	Quantity (thousand metric tons)	Value (thousands)
Granite	1 <sup>r</sup>	W	W	3	120	\$1,100
Traprock	3	468	\$3,550	2	102	906
Shell	1	W	W	1	W	W
Miscellaneous stone	7	1,760	10,300	9	2,140	13,600
Total	XX	2,270 <sup>r</sup>	14,200 <sup>r</sup>	XX	2,360	15,600

<sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data. XX Not applicable.

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

<sup>2</sup>Data derived, in part, from information obtained from the Alaska Department of Natural Resources, Division of Geological and Geophysical Surveys.

TABLE 3  
ALASKA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2005, BY USE<sup>1,2</sup>

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Riprap and jetty stone	W	W
Filter stone	W	W
Total	28	366
Coarse aggregate, graded:		
Bituminous aggregate, coarse	W	W
Other graded coarse aggregates	W	W
Total	78	824
Fine aggregate (-¾ inch):		
Stone sand, bituminous mix or seal	W	W
Other fine aggregates	W	W
Total	162	1,630
Coarse and fine aggregates:		
Graded road base or subbase	86	757
Unpaved road surfacing	W	W
Crusher run or fill or waste	W	W
Other coarse and fine aggregates	59	500
Total	288	2,500
Unspecified, reported <sup>3</sup>	1,810	10,300
Grand total	2,360	15,600

W Withheld to avoid disclosing company proprietary data; included in "Total."

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

<sup>2</sup>Data derived, in part, from information obtained from the Alaska Department of Natural Resources, Division of Geological and Geophysical Surveys.

<sup>3</sup>Reported and estimated production without a breakdown by end use.

TABLE 4  
ALASKA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2005,  
BY MAJOR USE CATEGORY<sup>1</sup>

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate and concrete products	1,510	\$9,960	\$6.58
Asphaltic concrete aggregates and other bituminous mixtures	749	8,480	11.32
Road base and coverings	1,460	9,130	6.27
Fill	2,730	10,700	3.91
Snow and ice control	61	404	6.64
Other miscellaneous uses <sup>2</sup>	46	423	9.26
Unspecified: <sup>3</sup>			
Reported	918	3,340	3.64
Estimated	1,190	5,710	4.81
Total or average	8,660	48,100	5.56

<sup>1</sup>Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

<sup>2</sup>Includes railroad ballast and filtration.

<sup>3</sup>Reported and estimated production without a breakdown by end use.