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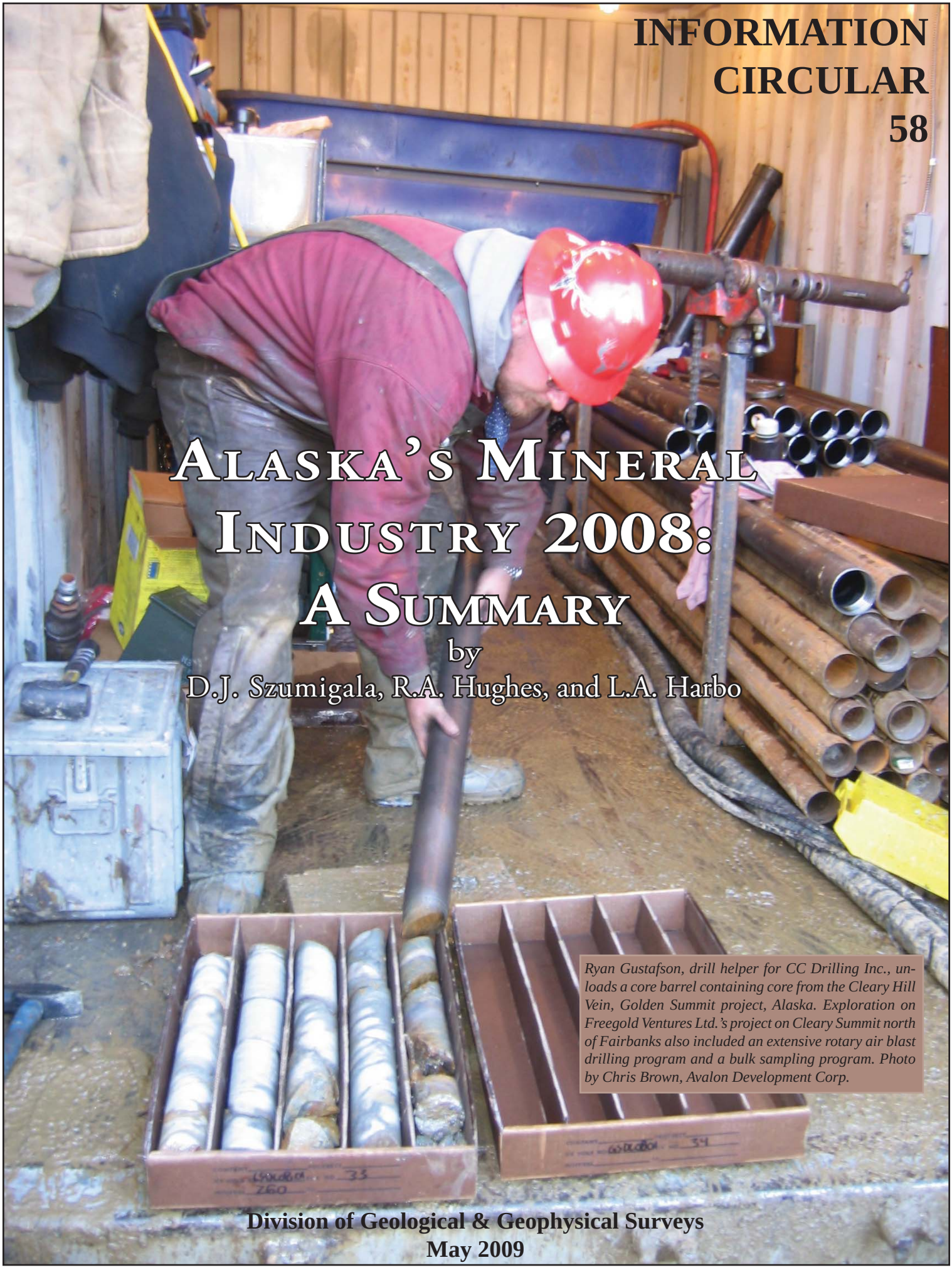

Ryan Gustafson, drill helper for CC Drilling Inc., unloads a core barrel containing core from the Cleary Hill Vein, Golden Summit project, Alaska. Exploration on Freegold Ventures Ltd.'s project on Cleary Summit north of Fairbanks also included an extensive rotary air blast drilling program and a bulk sampling program. Photo by Chris Brown, Avalon Development Corp.

Division of Geological & Geophysical Surveys
May 2009

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D.J. Szumigala[1], R.A. Hughes[2], and L.A. Harbo[2]

INTRODUCTION

Alaska's mineral industry declined in total value in 2008 by about 22 percent from the record level set in 2007, primarily because of lower metal prices, increased operating costs, and a worldwide economic slowdown. Mineral production volumes remained strong; however, the value of mineral production was less in 2008 than in 2007 following the decline in metals prices. Development expenditures in Alaska increased in 2008 from the levels spent in 2007. Exploration activities for a wide variety of commodities continued across all regions of Alaska, and new discoveries were announced.

The total value of Alaska's mineral industry in 2008 was $3.117 billion, $898.5 million lower than 2007's record value of $4.015 billion. Table 1 shows the estimated annual value of the mineral industry in Alaska between 1981 and 2008, as divided between exploration and development investments, and the gross value of the mineral products. This total value, even though it is a combination of expenses and receipts, is an effective way of tracking the annual strength of the mineral industry.

The year 2008 was the thirteenth consecutive year with a total value above $1 billion, the third consecutive year with a total value more than $3 billion, and the seventh consecutive year with production value above $1 billion. Exploration expenditures were $328.6 million in 2008, down slightly from $329.1 million in the previous year; 2008 was the second consecutive year with expenditures above $300 million and the fourth consecutive year with expenditures of more than $100 million. Development expenditures for 2008 are estimated at $379.8 million, a 19.1 percent increase over the $318.8 million spent in 2007 and continuing for a fifth year of development expenditures exceeding $200 million. Production values for 2008 were approximately $2,408.6 million compared to $3,367.0 million in 2007, a decline of 28.5 percent.

This summary of Alaska's mineral industry activity for 2008 is made possible by information provided through press releases, annual and 10K reports, phone interviews, internet research, and replies to questionnaires mailed by the Alaska Division of Geological & Geophysical Surveys (DGGS). This report is part of a cooperative venture between DGGS and the Division of Mining, Land & Water (DMLW) in the Department of Natural Resources (DNR) and the Office of Economic Development in the Department of Commerce,

Table 1. Total value of the mineral industry in Alaska by year (in millions of dollars U.S.)

	Exploration (expenditure)	Development (expenditure)	Production (value)	Total (calculated)
1981	$ 76.3	$ 24.7	$ 188.6	$ 289.6
1982	45.6	41.6	196.4	283.6
1983	34.1	27.9	212.4	274.4
1984	22.3	53.4	199.4	275.1
1985	9.2	34.1	226.6	269.9
1986	8.9	24.3	198.5	231.7
1987	15.7	100.3	202.4	318.4
1988	45.5	275.0	232.2	552.7
1989	47.8	134.3	277.0	459.1
1990	63.3	14.3	533.0	610.6
1991	39.9	25.6	546.5	612.0
1992	30.2	29.6	560.8	620.6
1993	30.3	27.7	448.7	506.7
1994	31.1	45.0	507.5	583.6
1995	34.3	148.6	537.2	720.1
1996	44.7	394.0	590.4	1,029.1
1997	57.8	168.4	936.2	1,162.4
1998	57.3	55.4	921.2	1,033.9
1999	52.3	33.8	1,032.9	1,119.0
2000	34.9	141.7	1,106.4	1,283.0
2001	23.8	81.2	917.3	1,022.3
2002	26.5	34.0	1,012.8	1,073.3
2003	27.6	39.2	1,000.7	1,067.5
2004	70.8	209.1	1,338.7	1,618.6
2005	103.9	347.9	1,401.6	1,853.4
2006	176.5	331.0	2,752.6	3,260.1
2007	329.1	318.8	3,367.0	4,014.9
2008	328.6	379.8	2,408.0	3,116.4
TOTAL	**$1,870.7**	**$3,705.3**	**$23,958.6**	**$29,534.6**

Source: Alaska's Mineral Industry reports published annually by DGGS/ Commerce.

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Community & Economic Development (Commerce). The estimates used in this summary are generally conservative because data have not yet been completely reported. This summary and data contained within it will be superseded by the final report, Alaska's Mineral Industry 2008 (Special Report 63), to be published later in 2009, after further compilation of information, particularly for placer mining and industrial minerals.

EMPLOYMENT

Table 2 lists estimated employment in the Alaska minerals industry for the past eight years. Total minerals industry employment in 2008 is estimated to be 4,334 full-time equivalent jobs, an increase of 776 jobs from the estimated 2007 total of 3,558 full-time equivalent jobs. Contrary to expectations, the number of jobs in the development sector increased from 2008 because of a longer development period at Rock Creek, significant expenditures at Fort Knox for the heap leach addition and other projects, and other routine development. Kensington continued development for most of the year. The decrease in employment in the sand and gravel and rock production sectors is believed to be due to reporting shortfalls. With more complete data, especially for the placer, peat, and sand and gravel mining sectors, the number of 2008 jobs might increase slightly.

Table 2. Estimated Alaska mineral industry employment, 2001–2008.

SECTOR	2001	2002	2003	2004	2005	2006	2007	2008
Gold/silver mining								
Placer	176	148	82	64	86	242	208	255
Lode	337	413	325	433	411	704	808	934
Polymetallic	275	262	295	265	250	245	276	317
Base Metals	559	580	388	508	449	457	457	475
Recreational	210	180	175	175	175	45	54	32
Sand and Gravel	556	702	349	567	400	337	284	247
Rock	137	177	35	475	148	104	124	55
Coal	121	100	65	90	95	95	102	110
Peat[a]	32	21	20	5	6	11	11	0
Tin, jade, soapstone, ceramics, platinum	20	20	20	0	0	0	0	0
Mineral Development	4333	135	64	283	498	848	735	1,399
Mineral exploration	79	86	88	184	303	435	499	509
TOTAL	**2,835**	**2,824**	**1,906**	**3,048**	**2,821**	**3,524**	**3,558**	**4,334**

[a]Partial - person-days mostly included in sand and gravel numbers.
Reported person-days are divided by 260 to obtain average annual employment unless actual average annual employment numbers are provided.

The Alaska mining industry also created an estimated 2,000 indirect jobs, according to a 2008 study prepared for the Alaska Miners Association Inc. by the McDowell Group Inc. The mining industry provided some of Alaska's highest-paying jobs with an average annual wage of $82,600. Mining companies strengthen Alaska's local economies by employing Alaska residents from more than 120 Alaska communities, and purchasing supplies and services from hundreds of Alaska businesses.

EXPLORATION

Exploration expenditures in Alaska during 2008 are estimated to be $328.6 million, a slight decrease from the $329.1 million spent in 2007. Figure 1 shows the location of the most significant exploration projects in Alaska during the year. At least 72 exploration projects in Alaska spent more than $100,000 each and 32 of those projects spent more than $1 million each.

Exploration spending continued strongly throughout most of 2008, with a noticeable slowdown in the latter part of the year. Exploration occurred across Alaska, but most of the expenditures were in southwestern Alaska. Two advanced exploration projects, Pebble and Donlin Creek, accounted for more than 60 percent of the exploration expenditures and drill footage in 2008. The Pebble project was the largest exploration project in Alaska during 2008.

Exploration was conducted in Alaska for a wide variety of metals and mineralization styles during 2008. Exploration for copper–gold porphyry systems was the largest segment, followed by intrusion-related gold systems, gold veins, and massive sulfide systems.

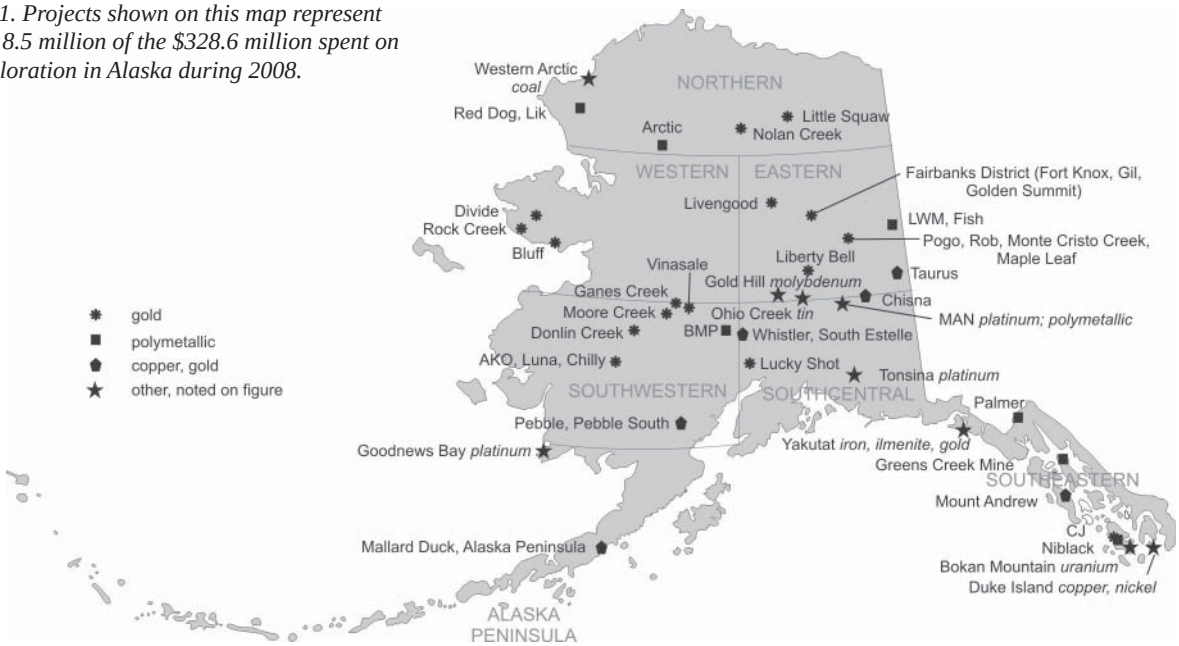


Figure 1. Projects shown on this map represent $318.5 million of the $328.6 million spent on exploration in Alaska during 2008.

Northern Region

Teck Alaska Inc. continued its exploration drilling program for polymetallic sedimentary-hosted massive sulfide deposits in the area surrounding Red Dog Mine. Teck drilled 29,000 feet of core in 12 holes. Drilling results were not released.

BHP Billiton Ltd. completed a second year of exploration at the Western Arctic Coal Project drilling under a 5-year exploration agreement with Arctic Slope Regional Corp. The 2008 field program included a caribou monitoring program; mobilization and planned spring caching; significant site improvements, including camp expansion, runway upgrades and ongoing site clean-up; and exploration drilling, field reconnaissance, and baseline environmental activities. Two drills completed 26,869 feet in 20 holes. Drilling results were not released.

Goldrich Mining Co., formerly Little Squaw Gold Mining Co., staked 12 mining claims, completed about 1,000 feet of trenching, collected 160 rock and channel samples for geochemical analysis, conducted limited soil sampling, and completed geologic mapping at the Little Squaw property. Road and airstrip infrastructure was also improved. An independent technical data assessment was commissioned and released. The report summarized the orogenic, mesothermal gold lode potential of the area. The study also concluded that Little Squaw Creek gold-bearing gravels contain a minimum of 216,602 ounces of recoverable placer gold within a global resource of 243,621 ounces.

Zazu Metals Corp. conducted a 58-hole drill program for a total of 22,406 feet, which included both infill and step-out drilling, at the Lik polymetallic sedimentary-hosted massive sulfide property northwest of the Red Dog Mine. Every hole hit significant sulfide mineralization, with 25 holes having significant mineralized intercepts exceeding 75 feet thick, 6 holes having significant mineralized intercepts exceeding 150 feet thick, and 28 holes containing mineralized intercepts exceeding 15 feet thick with zinc plus lead grades greater than 10 percent. The highest grade intercept was in hole DDH-161, with 52.5 feet of mineralization grading 11.25 percent lead, 27.70 percent zinc, and 12.96 ounces of silver per ton from 74- to 126.5-foot depth. Zazu also completed a preliminary access study, conducted metallurgical testing, initiated environmental studies, and contracted and completed a ground gravity and pulse electromagnetic (EM) geophysical program.

NovaGold Resources Inc. released a resource estimate for the Arctic deposit in early 2008. The volcanogenic massive sulfide deposit in the southern Brooks Range contains an indicated resource of 769,000 tons of copper, 1,118,500 tons of zinc, 175,000 tons of lead, 447,000 ounces of gold, and 32.29 million ounces of silver. The deposit contains an additional inferred resource of 468,500 tons of copper, 656,500 tons of zinc, 210 pounds of lead, 259,000 ounces of gold, and 18.58 million ounces of silver. NovaGold also continued exploration on the nearby Baird Mountain property.

Silverado Gold Mines Ltd. drilled 34 holes totaling 11,597 feet at the Workman's Bench prospect at its Nolan Creek property in the Brooks Range. Best results include 2.1 feet grading 0.04 ounces of gold per ton and 42.07 percent

antimony in hole 08SH15, 1.8 feet grading 2.88 ounces of gold per ton and 27.657 percent antimony in hole 08SH18, and 1.0 feet grading 0.08 ounces of gold per ton and 63.47 percent antimony in hole 08SH21. Drilling extended the lateral extent of the stibnite (antimony)–gold vein systems on Workman's Bench from 600 feet to 1,000 feet. Underground drifting, totaling 570 feet, crosscut gold and antimony veins associated with the Solomon Shear Zone. More than 100 channel samples of bedrock were collected. A 414-pound massive stibnite bulk sample was collected from the Zone A vein. Four large samples of stibnite and gold mineralized rock were collected from the main vein in Tunnel D at Nolan Creek Mine; the samples assayed as high as 2.02 ounces of gold per ton and 40.39 percent antimony. A very low frequency-electromagnetic (VLF-EM) ground survey was conducted over approximately 79,000 feet (14.9 line miles) in the Fortress area. An inferred mineral resource for the Workman's Bench gold–antimony target estimates 24,090 tons of antimony and gold mineralized rock with an estimated grade of 38.69 percent antimony and 0.446 ounces of gold per ton, which contains 9,321 tons of antimony and 10,737 ounces of gold. A mineral resource for the Nolan Creek placer area included an indicated resource of 66,800 cubic yards containing 6,250 ounces of gold and an inferred resource of 185,670 cubic yards with 6,177 ounces of gold.

Western Region

St. Andrew Goldfields Ltd. completed an underground exploration program, including drilling 129 holes totaling 30,777 feet at the past-producing Nixon Fork gold–silver–copper mine near McGrath. Pacific North West Capital Inc. optioned the Nixon Fork property from St. Andrew Goldfields in December, with the right for outright purchase.

Millrock Resources Inc. acquired the Bluff property east of Nome. At the Daniel's Creek prospect, Millrock drilled 1,300 feet of a planned 4,900-foot program aimed at testing historic drill results reported by BHP Minerals. Drill hole BLF1001 intersected 19.5 feet with an average grade of 0.041 ounces of gold per ton and hole BLF1003 intersected 4.5 feet with an average grade of 0.111 ounces of gold per ton. Sampling carried out at the Koyana zone, about 1.7 miles east of the Daniel's Creek prospect, extended gold mineralization at Koyana 1,600 feet southeast to what is now known as the Koyana Beach showing. Grab samples of quartz–carbonate–arsenopyrite veins returned favorable assay results at this location.

Millrock Resources Inc. and Alix Resources Corp. completed geologic mapping, trenching, and drilling at the Divide gold project about 28 miles north of Nome. Drilling totaled 8,715 feet in 22 reverse-circulation holes, and 24 trenches were excavated a total length of 4,080 feet over gold–arsenic soil anomalies. Drill hole DIV3004 intersected 50 feet grading 0.090 ounces of gold per ton, while hole DIV3019 intersected 5 feet grading 0.289 ounces of gold per ton. Trench DIV2016T intersected 75 feet grading 0.064 ounces of gold per ton, while trench DIV2008T intersected 55 feet grading 0.044 ounces of gold per ton.

Great Basin Gold Ltd. conducted trenching and rock chip sampling at the Ganes Creek gold property northwest of McGrath. Approximately 2,918 continuous chip and more than 250 select hand samples were collected from exploration trenches; 487 soil samples were collected. A ground induced-polarization (IP) geophysical survey was also completed, with more than 23,000 feet of lines cleared.

NovaGold Resources Inc. conducted limited exploration on the Rock Creek project. Drilling consisted of 19 reverse-circulation drill holes totaling nearly 6,200 feet; 1,312 samples were tested for gold. Drilling primarily occurred along the western margin of the Rock Creek open pit, targeting tension vein mineralization. Two trenches totaling 380 feet were excavated elsewhere on the property, exploring for extensions of mineralized structures. Narrow ore-grade mineralization was identified in one of the trenches.

NovaGold also conducted exploration at the Kugruk project near Candle; no results were announced. NovaGold conducted limited exploration and staked additional claims around ground optioned from Rosander Mining Co. at the Colorado Creek gold project northwest of McGrath.

Triex Minerals Corp. conducted limited exploration including site cleanup on the Boulder Creek and Fireweed uranium prospects near Elim. Triex and Full Metal Minerals Ltd. dropped their option on the Boulder Creek property, but retained interest in nearby claims.

Eastern Region

International Tower Hill Mines Ltd. focused on the Livengood gold project northwest of Fairbanks during 2008. Mineralization in the Money Knob deposit forms stratabound and cross-cutting bodies in a large thrust-faulted and recumbently folded sedimentary and volcanic sequence. This large structural zone localized a series of 90-million-year-old dikes, sills, and plugs that are believed to be related to the gold mineralization. The company drilled 116 holes in a resource-definition grid pattern and excavated trenches to define the high-grade Core Area, which has mineralization averaging almost 0.030 ounces of gold per ton over a 5,000-foot strike length and 1,600- to 2,900-foot width. A

resource defined in November 2008, based on a 0.015 ounces of gold per ton cutoff, includes an indicated 76.6 million tons containing 1.86 million ounces of gold and an inferred 96.8 million tons containing 2.17 million ounces of gold. The Livengood target is open in all directions as well as at depth. The resource crops out at one end and then dips shallowly, possibly lending itself well to low-strip open-pit mining. Preliminary metallurgical tests indicate mineralization responds well to heap leaching.

International Tower Hill Mines also worked on the Chisna property east of Paxson. A stream-sediment geochemical survey was completed over the Canyon Creek and Slate Creek Northwest claim blocks, as well as geological mapping and prospecting in the region.

Freegold Ventures Ltd. completed approximately 40,550 feet of rotary air blast drilling in 1,347 holes and 26 core drilling holes totaling 10,061 feet, covering a large area of the Golden Summit project on Cleary Summit near Fairbanks. Significant drill results along the Cleary Hill vein system include 303 feet grading 0.027 ounces of gold per ton, 101 feet grading 0.046 ounces of gold per ton, and 55 feet grading 0.184 ounces of gold per ton. A bulk sampling program continued in 2008, with crushed bulk material fed through a gravity-based recovery plant. Only approximately 400 ounces of gold were recovered due to plant configuration problems and over-grinding of material. Interpretation of preliminary assays suggests that the bulk sampling program confirmed the existence of bulk mineable mineralization at potentially economic grades.

Freegold also continued exploration, including drilling, prospecting, and an IP survey, at the Rob project in the Goodpaster region. Results from 12 core holes drilled at the Gray Lead prospect include intercepts of 7.9 feet grading 1.81 ounces of gold per ton and 13.5 feet grading 0.586 ounces of gold per ton. Interpreted results suggest additional gold-bearing veins in the area.

Fairbanks Gold Mining, Inc., a subsidiary of Kinross Gold Corp., in joint venture with Teryl Resources Corp. on the Gil property, collected 103 Bombardier-mounted auger soil samples at the Last Chance area and drilled nine reverse-circulation drill holes totaling 4,477 feet at the Sourdough Ridge area. Drill targets were gold-mineralized calc–silicate horizons and quartz veins. The best drill results, in hole GVR08-505, were 40 feet assaying 0.061 ounces of gold per ton from 375- to 415-foot depth.

MAX Resource Corp. completed a 10-hole diamond drill program (7,664 feet) at the Gold Hill porphyry molybdenum–copper–gold project during 2008. Drilling expanded the identified mineralized system to the north and northeast. Significant drill results include 185 feet of 0.053 percent molybdenum (Mo) from 385- to 560-foot depth in hole DDH-08-5, 100 feet of 0.071 percent Mo from 150- to 250-foot depth in hole DDH-08-6, and 50 feet of 0.121 percent Mo from 850- to 900-foot depth in hole DDH-08-8. No further work commitments are required on this project until 2011.

Full Metal Minerals conducted surface exploration and drilling at the LWM polymetallic carbonate replacement prospect near Chicken. Exploration work included collecting 72 rock samples and 990 soil samples for geochemical analysis. During 2008, 47 drill holes, totaling 37,062 feet, were completed at LWM, with massive to semi-massive sphalerite–galena–chalcopyrite mineralization intersected in most holes. Step-out and infill holes were completed on 165-foot centers along strike and down-dip. The widest mineralized intercept was in hole LWM08-32, with 54.7 feet averaging 14.46 percent zinc, 11.14 percent lead, and 6.34 ounces of silver per ton. The most mineralized significant intercept was in hole LWM08-33, with 12.8 feet averaging 17.87 percent zinc, 11.84 percent lead, 0.33 percent copper, and 6.87 ounces of silver per ton. Two subparallel zones of massive carbonate-replacement mineralization were traced over 2,300 feet of strike length and more than 1,000 feet below surface. The deposit is open for expansion in all directions. Nine samples from holes LWM08-23, 28, and 34 had indium values ranging from trace to 39.8 parts per million (ppm) and averaging 16.1 ppm indium.

Teck-Pogo Inc. carried out an exploration drilling program on the Pogo property. A helicopter-supported, two-rig drill program completed 20 holes totaling 37,449 feet. This included 18 holes (33,331 feet) drilled on the Pogo millsite lease and 2 holes at the Chorizo prospect. Underground exploration drilling at the Pogo Mine included 16 holes totaling 13,529 feet. No drill results were released.

International Tower Hill Mines conducted work on the West Pogo property. Results highlighted a large new east–west-trending gold anomaly with high-grade gold (up to 3.46 ounces of gold per ton) in rock chip samples. International Tower Hill dropped their option on Doyon Ltd. lands, including the West Tanana property, and abandoned the Gilles property.

Copper Ridge contracted a geologic mapping and sampling program on the Ogopogo project, carried out by Avalon Development Corp. of Fairbanks, Alaska.

Sumitomo Metal Mining and Stone Boy Inc., through Pathfinder Mineral Services, conducted exploration on the Monte Cristo Creek portion of the Stone Boy project. Work included collecting 380 soil and rock geochemical samples, geologic mapping, and drilling 14 core holes totaling 9,000 feet. Geochemical results were not announced. Work on the nearby Brink property included geologic mapping and collecting 325 soil and rock geochemical samples.

Goldstone Resources LLC discovered a high-grade gold–tungsten–bismuth float train on its Amanita property near Fairbanks about 3,500 feet along strike from the previously drilled Tonsina prospect. During reconnaissance a satellite intrusive system was also identified immediately south of the Gilmore Dome pluton and completely within the Amanita property.

New Gold Inc., a new company based on the merger of Metallica Resources Inc., Peak Gold, and New Gold, continued working on the Liberty Bell property north of Healy. An IP geophysical survey, completed by Gradient Geophysics, covered 21.4 line miles, with line pairs spaced 1,970 feet apart and readings taken at 492-foot spacing along lines. Work also included detailed logging of 1996 and 1997 diamond drill core, compilation of historic drill data, staking 23 state mining claims, continuing geologic mapping and geochemical rock sampling; and continuing baseline water sampling done by Bristol Environmental Services. AeroMetrics, Anchorage, prepared a new topographic map of the main project area with a 10-foot contour interval.

Full Metal Minerals and BHP Billiton Mineral Services Co. completed an extensive airborne geophysical survey over eastern Alaska, identifying multiple new target areas with potential to host copper–gold porphyry deposits. Field crews conducted claim staking on seven claim groups, mapping, geochemical sampling, and IP geophysical work over historic and newly identified prospects. BHP terminated their option with Full Metal prior to year's end.

In 2008, 1618524 Ontario Ltd. optioned the Caribou Dome prospect in the Valdez Creek mining district from the C-D Development Corp. YOW Capital Corp. and 1618524 Ontario subsequently agreed for YOW Capital to acquire all issued and outstanding shares in 1618524 Ontario. The last significant exploration work on the property was done in 1999, and 1618254 Ontario commissioned a technical report to summarize the geology and exploration work completed on the property since its discovery in 1963.

Rubicon Minerals Corp. conducted a property-wide reconnaissance exploration program in the Pogo area, including geologic mapping, prospecting, and soil sampling with limited drilling. Drilling targeted new mineralization found 1,000 feet northwest of an area drilled in 2003 and 2004. Angular mineralized talus was identified over an area 330 feet long, where nine of 40 samples returned in excess of 0.073 ounces of gold per ton, including a highlight of 1.715 ounces of gold per ton. Three holes totaling approximately 1,000 feet were completed to test this mineralization, but no significant gold mineralization was intersected.

Senator Minerals Ltd. drilled three core holes on the Taurus porphyry copper property. Results were not released.

Australian Mineral Fields Ltd. optioned the Tushtena gold project near Tok from Alaska-based Tushtena Resources Inc. Historic rock chip samples from outcropping veins with visible gold assayed up to 42.3 ounces of gold per ton. Core from holes drilled in 1986 and 1987 at the Discovery Zone was sampled in 2008 and indicated general agreement between 2008 and historic assay results. These results included 9.5 feet grading 0.716 ounces of gold per ton in hole AR4 and 6 feet grading 0.378 ounces of gold per ton in hole AR9.

Silverado Gold Mines Ltd. completed a mineral resource estimate for its Ester Dome property near Fairbanks. The study estimates an indicated resource of 631,600 tons containing 126,700 ounces of gold and an inferred resource of 2,553,400 tons containing 214,100 ounces of gold.

The Alaska Division of Geological & Geophysical Surveys (DGGS) conducted fieldwork, including geologic mapping and geochemical sampling of rock, in the Dry Creek and Tok areas. DGGS conducted fieldwork to geologically map approximately 200 square miles in the eastern Bonnifield mining district, including the Dry Creek and WTF volcanogenic massive sulfide deposits. A geochemical data report, and 1:50,000-scale bedrock- and comprehensive-geologic maps are scheduled to be published by the end of 2009. DGGS mapped between Dot Lake and Tetlin Junction on the Alaska Highway as part of the Gas Pipeline Corridor Project. Project geologic maps and geochemical reports are to be published in 2009.

Brett Resources Inc. conducted reconnaissance mapping, prospecting, and sampling of the Long Creek and Ohio Creek tin–silver prospects in the Alaska Range.

Southcentral Region

Full Metal Minerals Ltd. commenced underground rehabilitation work at the Lucky Shot property north of Anchorage. Work included about 400 feet of underground drifting to access high-grade gold mineralization in the Lucky Shot shear. Full Metal also purchased a used 200-ton-per-day mill to use on the property. A ten-hole, 7,800-foot drilling program was completed on the War Baby block, but no results were released.

Geoinformatics Exploration Inc. completed an 11-hole, approximately 14,100-foot drilling program at the Whistler porphyry copper–gold project near Rainy Pass. Five holes were drilled on the Whistler zone and six holes on nearby prospects, including the Raintree West prospect. The best result from the Whistler drilling is 2,385 feet grading 0.014 ounces of gold per ton, 0.025 ounces of silver per ton, and 0.14 percent copper.

Pure Nickel Inc. optioned the MAN nickel–copper–platinum-group-element property to ITOCHU Corp., a multi-billion-dollar Japanese conglomerate. A drill program focused on broad VTEM geophysical conductor targets in the Beta Complex area. Drillholes intersected wide zones of weakly disseminated sulfides, with a 1.6-foot sulfide-bearing intersection grading 1.39 percent nickel and 1.27 percent copper.

Millrock Resources optioned the South Estelle property from Full Metal Minerals. Millrock conducted geochemical sampling of talus fines and rocks and results indicate two large gold anomalies at the Shoeshine and Oxide Ridge occurrences. Gold occurs with arsenopyrite and chalcopyrite as disseminations within porphyritic plutonic rocks, and in quartz stockworks and zones of sheeted quartz veins.

Pacific North West Capital Corp. completed IP and ground magnetic surveys exploring for sulfide- and chromite-enriched layers in the Tonsina Ultramafic Complex. Geophysical and surface sampling results suggest a 1,000-foot strike length to previously discovered sulfide mineralization with platinum-group-element mineralization.

Southwestern Region

Northern Dynasty Minerals Ltd. announced an updated mineral resource estimate for the Pebble Limited Partnership's Pebble deposit based on 476 drill holes in the Pebble West and Pebble East deposits. At a 0.30 percent copper equivalent cut-off, the Pebble Deposit contains 5.62 billion tons of measured and indicated mineral resources grading 0.77 percent copper equivalent, containing 48 billion pounds of copper, 57 million ounces of gold, and 2.9 billion pounds of molybdenum; plus 4.4 billion tons of inferred mineral resources grading 0.55 percent copper equivalent, containing 24 billion pounds of copper, 37 million ounces of gold, and 1.9 billion pounds of molybdenum. Work included 141,000 feet of drilling in 215 holes. This includes 109,800 feet of drilling in 24 holes to delineate the Pebble East deposit and to provide detailed geotechnical information for mine planning purposes. Crews also completed 31,160 feet of drilling in 191 dedicated environmental, geotechnical, and metallurgical holes. A team of approximately 20 engineers and technical specialists (many from Anglo American), as well as 58 engineering firms and other consultancies, is currently preparing a pre-feasibility study for the project.

Full Metal Minerals Ltd., with financing from joint-venture partner Freeport-McMoRan Exploration Corp., drilled seven core holes totaling approximately 5,440 feet at the Pebble South property. No results were announced.

Donlin Creek LLC focused on drilling the East ACMA target at the Donlin Creek gold project near Aniak. Initial drilling identified deep mineralization along the East ACMA trend. Phase 2 drilling included some additional holes in the East Acma structural zone as well as some select infill holes in the Lewis and Akivik areas. Exploration drilling also targeted potential oxide/non-refractory mineralization. A total of 108 HQ/NQ diameter core holes totaling 109,663 feet were drilled for exploration, resource infill, condemnation, and geotechnical studies. A preferred design for the Donlin Creek project was identified, with a throughput design of approximately 55,000 tons per day using onsite diesel and wind cogeneration for power. A feasibility study update and pre-permitting activities continued on schedule. On June 10 NovaGold announced that the measured and indicated resource for the Donlin Creek gold project increased to 31.7 million ounces of gold grading approximately 0.073 ounces of gold per ton with an additional 4.2 million ounces of inferred gold resources.

Pacific North West Capital Corp. explored for platinum on the Goodnews Bay project with funding from Stillwater Mining Co. A soil and rock geochemical sampling program was conducted on Susie Mountain. The Last Chance and Susie West prospects were drilled, with seven holes totaling 5,597 feet. No significant platinum–palladium mineralization was identified during the program. Based on exploration results from the past 2 years, Stillwater Mining Co. and Pacific North West Capital Corp. terminated the exploration joint venture with Calista Corp.

International Tower Hill Mines added to their BMP property southeast of McGrath by optioning nearby Cook Inlet Region Inc. lands. A high-resolution airborne magnetic and electromagnetic survey was completed over portions of the project. Results outlined several anomalies associated with known polymetallic skarn deposits, including the Dall, 6120, and Little Bird prospects. Twenty rock samples collected from the 6120 prospect averaged 2.3 percent copper, 0.1 ounces of gold per ton, 0.96 ounces of silver per ton, 0.16 percent nickel, and 0.07 percent cobalt.

Gold Crest Mines Inc. signed joint venture agreements with Newmont North America Exploration Ltd. for the AKO, Luna, and Chilly claim groups. Newmont terminated the agreement in December after conducting exploration. No results were announced.

Freegold Ventures Ltd. conducted a ground-based IP and resistivity survey to the north and northeast of the Central zone on the Vinasale project near McGrath. Survey results suggest that the anomaly associated with the Central zone gold–arsenic mineralization continues to the north and northeast where widely scattered drill holes have encountered gold mineralization.

Full Metal Minerals Ltd. and Highbury Projects Inc. staked an additional 44 mining claims at the Moore Creek gold property. Sampling and mapping were completed on previously unexplored areas of the property. A 13-hole, 6,162-foot drill program was completed on the Spring and Troy zones. Zones of silicified and tourmaline-altered monzonite with stockwork quartz veins (up to 2.5 feet wide) and disseminated to massive arsenopyrite, chalcopyrite, pyrite, and rarely pyrrhotite were intersected in the majority of the holes. Hole MC08-05 on the Spring zone had an 18-foot intercept grading 0.125 ounces of gold per ton. Hole MC09-09 at the Troy zone intersected 6.5 feet of mineralization grading 0.168 ounces of gold per ton.

Full Metal Minerals optioned the Granite Creek gold property south of McGrath, completed reconnaissance exploration, and later dropped the option.

Kinross and Full Metal completed an extensive gold reconnaissance program in southwestern Alaska.

Alix Resource Corp. conducted exploration at the KUY, Fog Lake, Koksetna, and Kolossus prospects in the Bristol Bay region. The work program at KUY included geologic mapping and sampling, IP and resistivity geophysical surveys, and 1,404 feet of diamond drilling in two holes. One IP-resistivity line of 4,600 feet was surveyed and two diamond drill holes of 495 and 508 feet were completed at the Fog Lake property. IP surveys were conducted on the Koksetna and Kolossus prospects. Andover Ventures Inc. and Alix Resources dropped their options on Bristol Bay Native Corp. lands optioned through Full Metal Minerals after the field season.

Alix optioned Full Metal's Kamishak property in the Iliamna Lake area and then Andover optioned a 20 percent interest in the property. The target is copper–gold mineralization associated with an intrusive breccia body. Work included additional geologic mapping, sampling, and IP and resistivity geophysical surveys to better define the mineralization.

Alaska Peninsula

New Gold Inc. continued work on Bristol Bay Native Corp. lands. Alaska Earth Sciences assisted with reconnaissance mapping, geochemical sampling, and ground magnetic traverses of the Mallard Duck Bay prospect and preliminary reconnaissance mapping, sampling, and ground magnetic surveys of other less-explored mineral prospects in the greater Chignik region including Marshinlak Creek, Warner Bay, Castle Bay, and Thompson Valley. New Gold terminated its option agreement with Full Metal Minerals in late 2008.

Southeastern Region

Hecla Mining Co. continued exploration at and near the Greens Creek Mine on Admiralty Island near Juneau. Underground exploration drilling in the Gallagher zone extended mineralization more than 200 feet in a southerly plunge. Surface drilling from the North Big Sore area defined extensions of mine contact rocks northeast of the current mine workings, which can be correlated for more than 2,000 feet and are still open in both directions. This target area could be accessed through the mine's current infrastructure and will be drilled in 2009. Surface drilling also confirmed the presence of mine contact rock 8 miles north of the mine at the East Ridge target.

Ucore Uranium Inc.'s exploration program at the Bokan Mountain property near Ketchikan focused on expanding high-grade uranium mineralization in the I&L zone and on identifying and evaluating additional drill targets. Holes 10 to 46 (37 holes) were drilled at four separate target areas, with the majority in the I&L zone. Drill results include significant assay results for uranium, rare-earth elements (REEs), and related metals including yttrium, zirconium, beryllium, and niobium. Results also indicate potentially significant concentrations of highly valuable heavy REEs (including holmium, lutetium, terbium, and thulium), many of which are uncommon at most other North American deposits and have valuations ranging from hundreds to thousand dollars per pound. Drill results include 27.5 feet grading 0.028 percent Y_2O_3, 0.020 percent Nb_2O_5, 0.148 percent light REEs, and 0.025 percent heavy REEs in hole LM08-10; 42 feet grading 0.244 percent Y_2O_3, 0.018 percent Nb_2O_5, 0.108 percent light REEs, and 0.110 percent heavy REEs in hole LM08-118; and 23 feet grading 0.076 percent Y_2O_3, 0.143 percent Nb_2O_5, 0.127 percent light REEs, and 0.075 percent heavy REEs in hole LM08-25. Surface sampling identified several zones with even higher REE values outside of the I&L zone and the other main uranium-bearing zones.

Committee Bay Resources Ltd. acquired Niblack Mining Corp. and continued exploration at the Niblack polymetallic project on Prince of Wales Island. Exploration included driving an exploration adit for approximately 2,600 feet, and drilling 14,787 feet in 19 holes probing depth extensions of the Lookout zone. The first resource estimate for the volcanogenic massive sulfide project calculated 1.56 million tons of indicated and 2.08 million tons of inferred resources totaling 3.64 million short tons containing 284,000 ounces of gold, 4.2 million ounces of silver, 59,612 tons of copper, and 115,877 tons of zinc. Indicated resources grade 0.08 ounces of gold per ton, 1.22 ounces of silver per ton, 1.04 percent copper, and 2.14 percent zinc.

Constantine Metal Resources Ltd. continued drilling at its copper-rich volcanogenic massive sulfide Palmer project near Haines. Constantine completed ten drill holes, with two abandoned, totaling 14,421 feet, and significantly extended copper–zinc–lead–gold–silver mineralization in three zones at the South Wall target. The highlight of the drilling was hole CMR08-11, which intersected 119 feet of massive sulfide from 51- to 635-foot depth grading 1.54 percent copper, 0.45 percent lead, 5.45 percent zinc, 0.014 ounces of gold per ton, and 0.83 ounces of silver per ton; followed by a 67-foot massive sulfide zone from 915- to 982-foot depth grading 1.53 percent copper, 0.37 percent lead, 7.62 percent zinc, 0.024 ounces of gold per ton, and 2.94 ounces of silver per ton; followed by a third 42-foot massive sulfide zone from 1,153- to 1,195-foot depth grading 0.47 percent copper, 0.15 percent lead, 6.27 percent zinc, 0.01 ounces of gold per ton, and 0.71 ounces of silver per ton. Drill hole CEM-08-14 intersected a 126-foot mineralized intercept of Zone 2 massive sulfide with 5.1 percent copper. Exploration to date has shown that there is now a minimum lateral extent of mineralization in the South Wall target of 1,000 feet horizontally by 1,000 feet vertically in three zones and all zones are open to expansion.

Full Metal Minerals Ltd. and Altair Ventures Inc. drilled nine holes totaling 4,229 feet at the CJ gold project on Prince of Wales Island to extend known mineralization. No results were announced.

Full Metal Minerals Ltd. optioned the Mount Andrew copper project on Prince of Wales Island to Mosam Capital Corp. Copper mineralization occurs within semi-massive to massive magnetite skarn bodies associated with andesitic volcanic rocks and intermediate intrusive rocks.

Geohedral LLC staked claims covering black sand deposits with magnetite, ilmenite, and potentially meaningful quantities of gold, silver, and other precious metals over more than 76 square miles of federal and state lands near Yakutat. Geohedral drilled 11 holes totaling more than 1,000 feet and ranging from 65- to 125-foot depths. No results were announced.

Quaterra Resources Inc. interpreted an airborne time-domain electromagnetic (TEM) survey flown by Fugro Airborne Surveys Inc. in 2008 over Duke Island near Ketchikan. The 20-square-mile airborne survey identified a strong conductive anomaly with a “wine glass” shaped profile adjoining the Marquis, Far North, and Zone A targets. The anomaly is approximately 4,000 feet wide by 5,000 feet long with an additional 2,000-foot extension along the southern edge. The southwestern margin of the TEM anomaly corresponds to a thick section of massive to semi-massive sulfides encountered by Quaterra’s past drill holes exploring the Marquis target.

DEVELOPMENT

A preliminary estimate of 2008 development expenditures is approximately $379.8 million, a 19.1 percent increase from the 2007 value of approximately $318.8 million. The increase coincides with the near completion of the Kensington and Rock Creek projects. Rock Creek production began in September 2008 but production was suspended in November 2008 due to unanticipated mechanical problems, challenges in meeting additional environmental requirements, uncertainty of anticipated project cash flow, and uncertainty of financing during the severe prevailing credit and equity market conditions at that time. Significant expenditures were noted at Red Dog Mine, Fort Knox Mine, Pogo Mine, Rock Creek Mine, Greens Creek Mine, and the Kensington project (fig. 2). Total employment dedicated to development amounted to 1,399 full-time-equivalent jobs for the year.

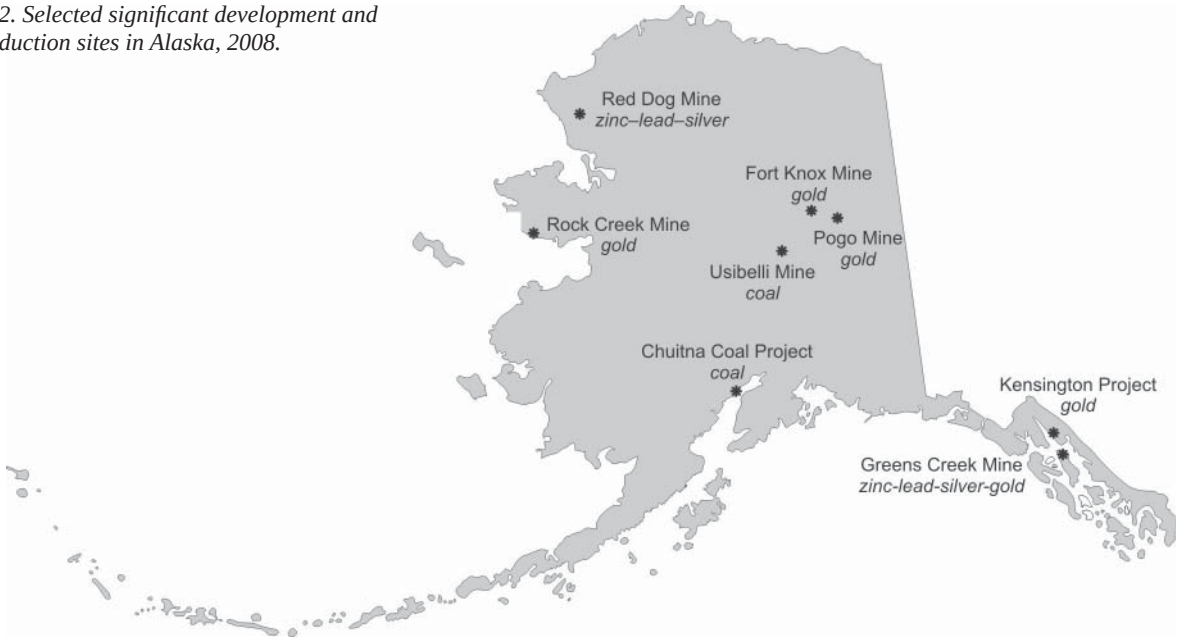
Capital expenditures at Red Dog Mine, owned and operated by Teck Alaska Inc., were $42.5 million during 2008. Projects included $2.5 million spent on 34,815 feet of infill/evaluation drilling and $40 million spent on primary dam construction. Employment allocated to development activity at Red Dog was approximately 10 full-time-equivalent contract positions for the year.

Teck Alaska Inc. and NANA Regional Corp. Inc. are proposing to continue mining operations through 2031 by extending mining activity into the Aqqaluk deposit, located adjacent to the Main deposit. The Aqqaluk deposit contains 51.6 million tons of reserves, with 16.7 percent zinc and 4.4 percent lead, and represents an estimated 20 years of additional mining for the region and NANA. To meet the requirements of the National Environmental Policy Act, a Supplemental Environmental Impact Statement (SEIS) is being completed to evaluate the environmental effects associated with development of the Aqqaluk deposit and new circumstances or information relevant to environmental concerns that have arisen since the 1984 EIS. On December 5, 2008, U.S. Environmental Protection Agency (EPA) announced the availability of the draft SEIS and the start of a 60-day public comment period.

Fort Knox gold mine is owned and operated by Fairbanks Gold Mining Inc., a wholly owned subsidiary of Kinross Gold USA. Fort Knox Mine includes the main Fort Knox open-pit mine, the mill and tailings storage facility, and the Walter Creek heap leach facility. The True North open-pit mine is currently under care and maintenance.

Construction of the Walter Creek heap leach facility began on October 31, 2007. Construction activities during 2008 were limited due to a record-breaking rainy season. Activities consisted of excavation, grading, manufacturing

Figure 2. Selected significant development and production sites in Alaska, 2008.



construction materials, placement and compaction of these materials, and placement of the liner. Ore placement and active leaching is planned for 2009.

Capital expenditures at Fort Knox Mine were approximately $126.6 million in 2008 compared to $30 million in 2007. Construction of the heap leach project concluded for the season with completion of approximately 78 percent of the leach pad area required for initial ore placement and leaching. Start-up of leaching operations is scheduled to commence in the third quarter of 2009. Phase 7 stripping will allow the Fort Knox pit production to continue until 2015. Stockpile material will be mined and placed on the heap leach facility until 2021.

Pogo Mine, an underground gold mine operated by Teck Pogo Inc., is a joint venture between Sumitomo Metal Mining Co. Ltd. (51 percent), Sumitomo Corp. (9 percent), and Teck Resources Ltd. (40 percent). Pogo began operations in 2006 with a 10-year mine life and was declared to have reached commercial production in April 2007, but the mine has not yet reached full capacity of 2,500 tons per day. Capital expenditures at the project during 2008 exceeded $24 million and included 14,427 feet of lateral development.

According to Teck Pogo Inc., a continued focus on underground development is required to open up the additional ore headings needed to reach the full production rate of 2,500 tons per day. Mining in 2009 is budgeted for 900,000 tons of ore and 13,500 feet of lateral development.

Rock Creek gold mine, owned by NovaGold Resources Inc., received regulatory authorizations and began the commissioning process in September 2008. Production at Rock Creek began on September 19, 2008, with the 7,100 -ton-per-day mill being fed at 25 percent capacity. The mill operated until October 9 when the ball mill resistor packs burned out, shutting the mill down. The mill was recomissioned on November 12 and operated until November 24. A total of 100,000 tons of ore were milled in 2008. On November 24, a decision was made to suspend operations at Rock Creek Mine and enter into a period of care and maintenance. NovaGold stated that it suspended operations at Rock Creek because of "unanticipated mechanical problems, challenges in meeting additional environmental requirements, uncertainty of anticipated project cash flow, and uncertainty of the Company's ability to finance itself during the severe prevailing credit and equity market conditions at that time." Operating problems were further compounded by severe arctic winter conditions in 2008.

NovaGold has said that it "continues to work with state and federal regulators to meet its environmental requirements and is completing a detailed project assessment to determine the cost, timing, and requirements to successfully restart the commissioning process." NovaGold had planned to commission the Rock Creek operation during 2008 with the expectation of bringing in $28 million in free cash flow. The planned production rate was 7,700 tons per day to produce 100,000 ounces of gold per year during full capacity. Employment was forecast at 160 persons. NovaGold spent approximately $20 million over budget in 2008 trying to get the mine operational, and building the mine cost at least $40 million more than expected. Capital expenditures at Rock Creek in 2008 were $124,793,422. The mine employed

135 personnel in 2008 during development and attempted startup. Rock Creek anticipates staffing at approximately 14 employees during the temporary closure care and maintenance period.

The Rock Creek gold mine is currently in care and maintenance status, pending a review of whether to recommend startup at the project. NovaGold expects to come to a decision about the restart of the Rock Creek Mine during the second quarter of 2009. If a decision is made to restart the mine, operations are not expected to begin until at least 2010. NovaGold is also considering selling the mine.

Probable reserves at Rock Creek and satellite Big Hurrah are 8.6 million tons at a grade of 0.0379 ounces of gold per ton and 1.32 million tons at 0.140 ounces of gold per ton, respectively.

Greens Creek Mine, an underground silver, zinc, lead, and gold mine on Admiralty Island near Juneau, produces approximately 2,100 tons of ore per day. The primary mining methods are cut-and-fill and longhole stoping. The ore is processed on site at a mill, which produces lead, zinc, and bulk concentrates, as well as doré containing silver and gold. The doré is sold to a precious metal refiner, and the three concentrate products are sold to a number of major smelters worldwide. Concentrates are shipped from a marine terminal about 9 miles from the mine site.

As of April 16, 2008, Hecla, through a joint venture arrangement with its subsidiaries, Hecla Alaska LLC, Hecla Greens Creek Mining Co., and Hecla Juneau Mining Co., obtained a 100 percent interest in the Greens Creek Mine.

Capital expenditures at Greens Creek amounted to $10.37 million for 2008. Most of this expenditure was for primary and ore access development. In addition, 48,783 feet of core definition and pre-production drilling was completed in 2008. Manpower allocated to development amounted to approximately 19 persons for the year, with 11 employees and 8 contract workers. Published reserves at Greens Creek are shown in table 3.

Table 3. Reserves and resources at Greens Creek.

Reserve/Resource	Tons	Grade			
		Silver, oz/ton	Gold, oz/ton	Lead, percent	Zinc, percent
Proven & Probable	8,064,697	13.71	0.108	3.83	10.55
Indicated	789,783	4.13	0.063	2.02	4.60
Inferred	2,411,956	11.55	0.092	2.71	6.78
Total	**11,266,436**	**12.58**	**0.103**	**3.46**	**9.33**

Source: Hecla-Mining.com

Greens Creek Mine has historically been powered completely by on-site diesel generators. However, an agreement was reached during 2005 to purchase excess hydroelectric power from the local power company. Installation of the necessary infrastructure was completed in 2006, and use of hydroelectric power began during the third quarter of 2006. However, low lake levels and increased demand in the Juneau area have combined to decrease power available to Greens Creek, and it is unlikely that Greens Creek will obtain sufficient utility power until 2009.

All major underground development activities and surface facilities are complete at the Kensington gold project near Juneau, with the exception of the tailings facility. The U.S. Supreme Court granted the State of Alaska and Coeur Alaska's petitions for a writ of certiorari to review a Ninth Circuit Court of Appeals decision relating to the Kensington 404 tailings permit. The Supreme Court heard oral arguments on the case on January 12, 2009, and a final Supreme Court decision is expected by the end of June 2009. According to Coeur, the Supreme Court decision may allow for construction of the tailings facility to take place in 2009, leading to potential production in the latter part of 2009 or early 2010. Meanwhile, Kensington has been placed on a care and maintenance status. The Kensington project had 47 full-time employees as of December 31, 2008.

According to Coeur d'Alene Mines Corp.'s Annual Report, the Kensington property litigation contributed to an increase in capital costs for the project. Total expenditures at the Kensington property during 2008 were $42.1 million. Expenditures were used to continue the permitting and development activities.

Proven and probable reserves at Kensington as of December 31, 2008, were 5,500,000 tons with a grade of 0.27 ounces of gold per ton containing 1,478,000 ounces of gold. Measured and indicated resources were 2,724,000 tons with a grade of 0.18 ounces of gold per ton containing 494,000 ounces of gold.

Coeur plans a production rate of 100,000 ounces of gold per year at a cash cost of $310 per ounce. The milling process will involve treating approximately 1,100 tons of ore per day that will involve primary crushing, semi-autogenous grinding (SAG) mill grinding, gravity, and flotation concentration, with about 40 percent of the tailings returned to the mine for backfill; the remaining tailings will be sent to the selected tailings disposal facility as required by the court resolution. Concentrates will be packaged and shipped off site for final gold recovery. When operational, the mine is expected to provide approximately 225 direct jobs.

The Nixon Fork gold–copper mine is approximately 35 miles northeast of McGrath; it was owned by Mystery Creek Resources, Inc., a wholly owned company of St. Andrew Goldfields Ltd. The mine was closed in October 2007 pending additional exploration drilling and efforts to sell the operation. No development was reported for 2008. On December 18, 2008, Pacific North West Capital Corp. announced that it had acquired an option, exercisable until February 15, 2009, to purchase a 100 percent interest in the venture. Pacific North West Capital Corp. paid $100,000 on signing of the agreement. Subject to regulatory approval and the satisfactory completion of its due diligence review, Pacific North West Capital Corp. may exercise the option by paying an additional $400,000, of which $100,000 is required to be paid on closing of the purchase of Mystery Creek Resources with the balance to be paid in three equal installments on May 1, July 1, and September 1, 2009.

Facilities at the Nixon Fork Mine include a 200-ton-per-day flotation plant with a gravity gold separation circuit, a sulfide flotation circuit, and a newly-constructed carbon-in-leach (CIL) gold leaching circuit. The mine also boasts a fleet of mining vehicles, a power plant, maintenance facilities, an 85-person camp, office facilities, and five aircraft landing strips. Mining and processing operations at Nixon Fork are fully permitted and bonded. Mine stockpiles amount to 2,315 tons of ore, and approximately 127,868 tons of mineralized tailings.

PacRim Coal LP continued environmental, permitting, and engineering work on the Chuitna Coal project west of Anchorage on the north side of Cook Inlet. The project is being designed to include a coal export terminal at Ladd Landing, connected to the mine with a 12-mile-long covered conveyor. Mine production capacity is designed to handle 3 to 12 million tons per year. Proven reserves are reported to be 771 million tons. Approximately 40 employees were credited to the project in 2008.

PRODUCTION

A preliminary estimate of mineral production value in Alaska during 2008 is $2.41 billion. The estimate represents a decrease in value of approximately $959 million, or a 28.5 percent decrease compared to 2007 production values. Reporting shortfalls are noted in the placer and industrial minerals sectors. When final totals are determined, the numbers are expected to increase, although there appears to be a fairly significant downturn in sand, gravel, and rock production. Metals (gold, silver, copper, lead, and zinc) account for $2,257 million, coal and peat for $53.97 million, and industrial minerals for $96.71 million. Table 4 shows the estimated mineral production for 2006 through 2008. Figure 2 shows the most significant mineral production sites in Alaska for 2008.

Table 4. Estimated mineral production in Alaska, 2006–2008[a]

	Production Quantities			Estimated Values[b]		
Metals	**2006**	**2007**	**2008**	**2006**	**2007**	**2008**
Gold (ounces)[c]	570,129	726,933	797,237	$344,049,779	$511,089,447	$695,158,346
Silver (ounces)	16,489,394	20,203,985	14,643,735	190,415,907	270,402,055	219,496,408
Copper (tons)	- -	43.8[d]	- -		283,542	
Lead (tons)	157,128	167,181	153,705	183,629,254	389,532,215	287,428,350
Zinc (tons)	673,967	696,115	626,135	2,002,971,414	2,048,451,644	1,055,220,098
Subtotal				**$2,721,066,354**	**$3,219,758,903**	**$2,257,303,202**
Industrial Minerals						
Sand & gravel (m tons)	14.0	14.2	10.3	63,351,089	76,119,390	63,078,073
Rock (m tons)	2.4	2.2	2.1	23,846,024	25,509,775	33,634,309
Subtotal				**$87,197,113**	**$101,629,165**	**$96,712,382**
Coal (tons)	1,379,500	1,273,004	1,538,000	48,912,500	44,555,140	53,830,000
Peat (cubic yards)	66,500	68,367	9,444	1,057,500	1,085,500	141,660
Subtotal				**$49,970,000**	**$45,640,640**	**$53,971,660**
TOTAL				**$2,858,233,467**	**$3,367,028,708**	**$2,407,987,244**

[a]Production data from DGGS questionnaires, phone interviews with mine and quarry operators, DOT&PF, municipalities, regional Native corporations, and federal land management agencies.
[b]Values for selected metal production were based on average prices for each year (unless other values were provided by the operator); for 2008, gold $871.96/oz, silver $14.99/oz, lead $0.94/lb, zinc $0.84/lb.
[c]2008 lode production was 743,593 ounces; placer production was 53,244 ounces.
[d]Nixon Fork was the only copper producer in 2007, but did not produce during 2008.

Red Dog Mine is in northwestern Alaska, approximately 100 miles north of Kotzebue and 50 miles inland from the Chukchi Sea, at the southern foothills of the Brooks Range. Red Dog Mine is the world's largest zinc mine, both in terms of reserves and annual zinc production, producing lead and zinc concentrates that are trucked to a port on the coast for shipping during the summer. Red Dog dominates Alaska's mineral production value, accounting for approximately 54.9 percent of the total value of Alaska's mineral production in 2008. The mine is 100 percent owned and operated by Teck Resources Ltd. under an agreement with NANA Regional Corp., a Native Alaskan development corporation. In 2008, Red Dog achieved 1 million manhours without a lost time incident.

The Red Dog deposit comprises a number of sedimentary-hosted lead–zinc massive sulfide deposits hosted in Mississippian- to Pennsylvanian-age sedimentary rocks. The ore bodies are lens shaped and occur within structurally controlled (thrust fault) plates. The sulfide mineralization consists of semi-massive to massive sphalerite, pyrite, marcasite, galena, and barite. The mining method employed is conventional drill and blast open-pit mining. The main pit has an expected life of 4 years at current rates of production. Total proven and probable reserve estimates, including the Aqqaluk deposit, as of December 31, 2008 are show in table 5.

Table 5. Red Dog Reserves as of December 31, 2008. (Teck Cominco, Teck Annual Information Form, March 13, 2009).

	Proven Reserves		Probable Reserves		Total	
Commodity	**Tons**	**Grade %**	**Tons**	**Grade %**	**Tons**	**Grade %**
Zinc	10,141,264	20.0	57,540,650	16.6	67,681,914	17.1
Lead	10,141,264	5.4	57,540,650	4.4	67,681,914	4.5

The mineral processing facilities employ conventional grinding and sulfide flotation methods to produce zinc and lead concentrates. The shipping season at Red Dog is restricted to approximately 100 days per year because of sea ice conditions, and Red Dog's sales are seasonal with the majority of sales in the last 5 months of each year. Concentrate is stockpiled at the port facility and is typically shipped between July and October. Final tonnages shipped for 2008 were 1,009,800 tons of zinc concentrate and 270,000 tons of lead concentrate. The last vessel of the year departed on October 27, 2008, without a full shipment because of sea ice and adverse weather conditions.

Production in 2008 declined by 10 percent due to lower mill availability. The availability was reduced by mechanical problems including the failure of a crusher shaft. Site operating costs increased 9 percent over 2007, resulting in a 20 percent increase in unit operating costs due to both higher fuel and supply costs and lower concentrate production.

Teck reported an operating profit at the Red Dog Mine of $226.4 million (before depreciation) in 2008 compared to a reported operating profit of $763.2 million in 2007. In 2008, $212 million in royalties was paid by Red Dog to NANA. In turn, $122 million was redistributed to other Alaska Native regional and village corporations. The project milled 3,362,049 tons of ore in 2008 with a zinc grade of 20.1 percent and a lead grade of 6.0 percent compared to a mill throughput of 3,726,910 tons with a grade of 20.2 percent zinc and 6.1 percent lead in 2007. The mine produced 567,911 tons of zinc in concentrate, and 135,144 tons of lead in concentrate, and was credited with an estimated 7,498,024 ounces of silver in 2008.

The Greens Creek silver, zinc, gold, and lead mine is the fifth largest silver mine in the world. Hecla Mining Co. owned 29.7 percent interest in Greens Creek through April 16, 2008, and 100 percent interest thereafter. Greens Creek Mine is a polymetallic, volcanogenic massive sulfide deposit and it produces a silver–gold doré and sulfide concentrates containing zinc and lead.

Production at Greens Creek Mine was somewhat less in 2008 than in 2007, reflecting that the ore was a lower grade than in previous years. Mill throughput was 734,910 tons in 2008, compared to 732,227 tons in 2007 and 732,176 tons in 2006. Metal production in 2008 totaled 7,145,711 ounces of silver, 67,269 ounces of gold, 58,224 tons of zinc, and 18,562 tons of lead. Production numbers for 2007 were 8,645,816 ounces of silver, 68,005 ounces of gold, 62,603 tons of zinc, and 21,029 tons of lead. Manpower numbers for 2008 were 317 persons in production and 19 in development, for a total of 336.

Hecla reports that the lower price of diesel today compared with 2008 prices is having a positive impact on decreasing unit cost.

Hecla estimates that it will produce approximately 10 to 11 million ounces of silver in 2009 at a cash cost of $6.00 per ounce, at February 2009 by-product metals and diesel fuel prices.

Fort Knox Mine, operated by Fairbanks Gold Mining Co., a wholly owned subsidiary of Kinross, produced 329,105 ounces of gold during 2008. This is a 2.76 percent decrease from 2007's total of 338,459 ounces. Mill throughput for 2008 was 15,110,000 tons compared to 14,021,400 tons in 2007. Average recoverable grade was 0.0218 ounces of gold per ton compared to 0.0241 ounces per ton for 2007. Mining activity produced 46.32 million tons during the year, an average rate of 126,904 tons per day. Phase 7 stripping was started in the fourth quarter of 2008. Ore was also mined from Phase 6. Ore production averaged 45,479 tons per day during 2008 compared to 60,300 tons per day in 2007; lower-grade materials were stockpiled for future heap leaching. Waste stripping amounted to 16,400,000 tons compared to 23,920,000 tons mined during 2007. There were 455 employees at Fort Knox at the end of 2008. The average manpower for the year amounted to 518.

Usibelli Coal Mine Inc. continued production of sub-bituminous coal from its Two Bull Ridge site near Healy with an output of 1,538,000 tons of coal, compared to 1,357,000 tons in 2007, a nearly 21 percent increase. The mine supplies six power plants in interior Alaska with approximately 900,000 tons annually; the balance is shipped to non-Alaska locations.

Pogo Mine, an underground gold mine about 90 miles southeast of Fairbanks, produced 347,219 ounces of gold as opposed to a planned production of 360,000 ounces. The mine operated as a joint venture with Sumitomo Metal Mining Co. Ltd. (51 percent), Sumitomo Corp. (9 percent), and Teck Resources Ltd. (40 percent). Pogo began production in 2007, producing 259,820 ounces of gold during the year.

In 2008, the mill processed an average of 2,236 tons per day for a total of 818,237 tons for the year. Employment at year end was 287 full-time-equivalent employees and 98 contract employees. Mining in 2009 is budgeted for 900,000 tons of ore and 13,500 feet of lateral development.

Teck realized its first annual profit from Pogo in 2008, reporting $21.6 million (after pricing adjustments), compared to a loss of $1 million in 2007. Teck reported its 40 percent share of the operating profits before depreciation as $55 million as compared with $16 million in 2007.

Reported statewide placer gold production to date is somewhat incomplete, amounting to approximately 53,244 ounces; the final production total is expected to be at least 55,000 ounces. This compares to the approximately 53,849 ounces of placer gold produced in Alaska in 2007. The Eastern Interior continued to be the highest producing region, with more than 24,369 ounces of placer gold produced in 2008 (fig. 3). Approximately 217 placer mines operated in Alaska in 2008 compared to the estimated 174 placer mines that operated in Alaska in 2007.

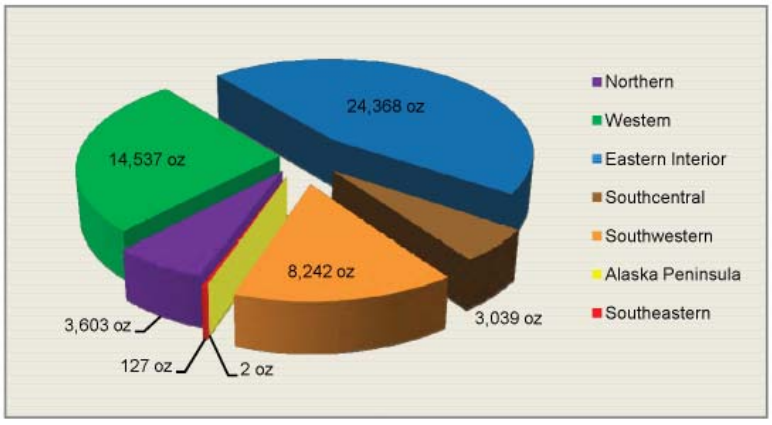


Figure 3. Placer gold production by region for 2008 (in ounces).

Silverado's Nolan Creek operation in the Brooks Range near Coldfoot is the only currently active underground placer mining operation in the state. Preliminary estimates of total employment in the placer industry in 2008 amount to 287, including recreational-sized operations.

Recreational mining continues to attract attention as the price of gold appreciates. Production allocated to recreational mining was 408 ounces for 2008 compared to 1,882 ounces for 2007. Employment allocated to this sector was 32 full-time-equivalent employees in 2008 compared to 54 in 2007.

The nonmetallic (rock, sand, gravel, and peat) sector suffered what appears to be a loss of production during the year, but it is likely primarily due to reporting shortfalls. The value of the sector for 2008 is currently estimated to be $97.5 million. Employment in 2008 is estimated to have been 302. These values compare to $102.7 million and 419, respectively, for 2007. Continued efforts to obtain reports may increase these numbers somewhat.

In 2008, the value of rock, sand, and gravel produced in Alaska was approximately $97.3 million, with approximately 2.1 million tons of rock and 10.3 million tons of sand and gravel produced by approximately 302 full-time-equivalent employees. This compares with the 2007 production value for rock, sand, and gravel of approximately $101,629,165, with approximately 2.2 million tons of rock and 14.2 million tons of sand and gravel, and with approximately 408 full-time-equivalent employees. In 2008, preliminary peat production estimates are approximately 9,444 cubic yards for the year, produced by fewer than one employee, compared with 68,367 cubic yards produced in 2007 by 11 employees; there is an obvious reporting shortfall in this category.

GOVERNMENT ACTIONS

In January 2007, the Alaska Industrial Development and Export Authority (AIDEA) executed a 7-year user agreement with Sherwood Copper Corp. and began constructing the new Skagway ore terminal concentrate storage building and support structures. In October 2007, for the first time in 10 years, mineral concentrates were loaded and shipped from the reactivated Skagway ore terminal. In 2008, AIDEA continued active discussions with other mining companies for potential use of the Skagway ore terminal.

On May 27, 2008, Alaska Governor Sarah Palin presented businesses, international organizations, and an elementary school with the first Governor's North Star Awards for International Excellence. Sumitomo Metal Mining Corp. was given the Governor's award for foreign investment in Alaska. Sumitomo Metal Mining Co., Ltd., in partnership with Teck Cominco, established the Pogo Gold Mine in Interior Alaska. The initial capital expenditure at Pogo was $378 million, and Sumitomo's investment in Alaska occurred over 11 years of exploration, permitting, development, and construction.

DGGS acquired and released additional airborne magnetic and electromagnetic geophysical data for the Styx River geophysical survey area in southcentral Alaska. The State of Alaska, through DGGS, funded and acquired airborne magnetic and electromagnetic geophysical surveys for the Slate Creek–Slana River area, in the Chistochina mining district covering portions of the Mt. Hayes, Gulkana, and Nabesna quadrangles. The 440-square-mile survey area, between the Richardson Highway on the west and the Tok Cutoff on the east, is about 17 miles east of Paxson and 40 miles southwest of Tok. The geophysical data are due to be released in mid-2009.

The DGGS Geologic Materials Center received mineral industry samples and data during the year. The Bristol Bay Native Corp. donated core from 14 drill holes at the Kemuk iron–titanium–platinum prospect in southwestern Alaska. Calista Corp. donated core and soil samples from the Nyac gold property in southwestern Alaska.

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