

**02/05/14  
OVERVIEW:  
MINING -  
JOINT HOUSE  
& SENATE  
RESOURCES**

<TARGET><BILL></BILL><SUBJECT>02-05-14 OVERVIEW MINING  
- JOINT HOUSE and SENATE  
RESOURCES</SUBJECT><COMM>HRES28</COMM></TARGET>

# Mining Industry Briefing

Alaska Miners Association  
Council of Alaska Producers

Joint House/Senate Resources Committee  
February 5, 2014



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Alaska Producers



# Why Do We Mine?

Broken-down Raw Materials of Worth in Your iPhone 5

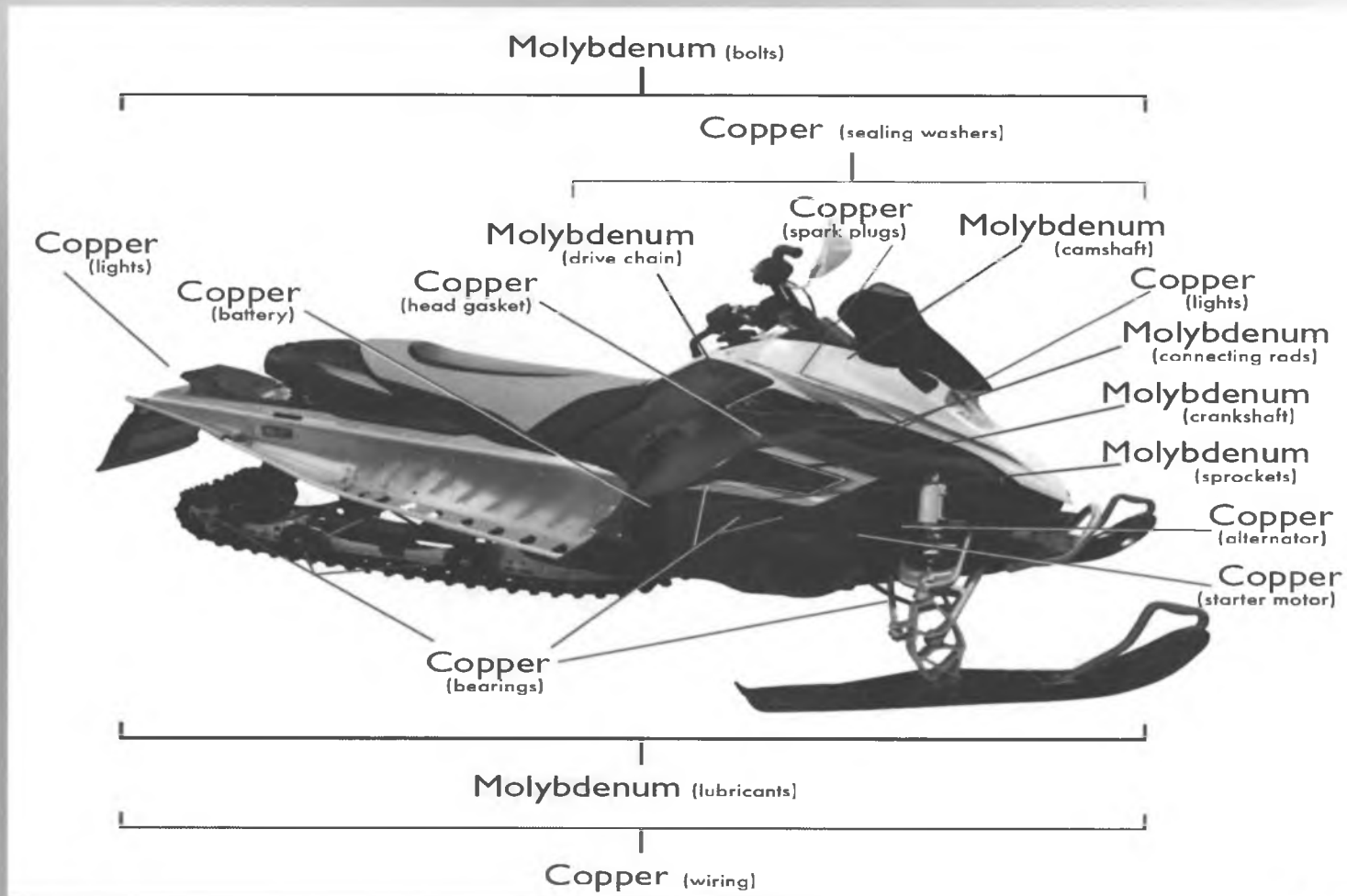


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# Why Do We Mine?



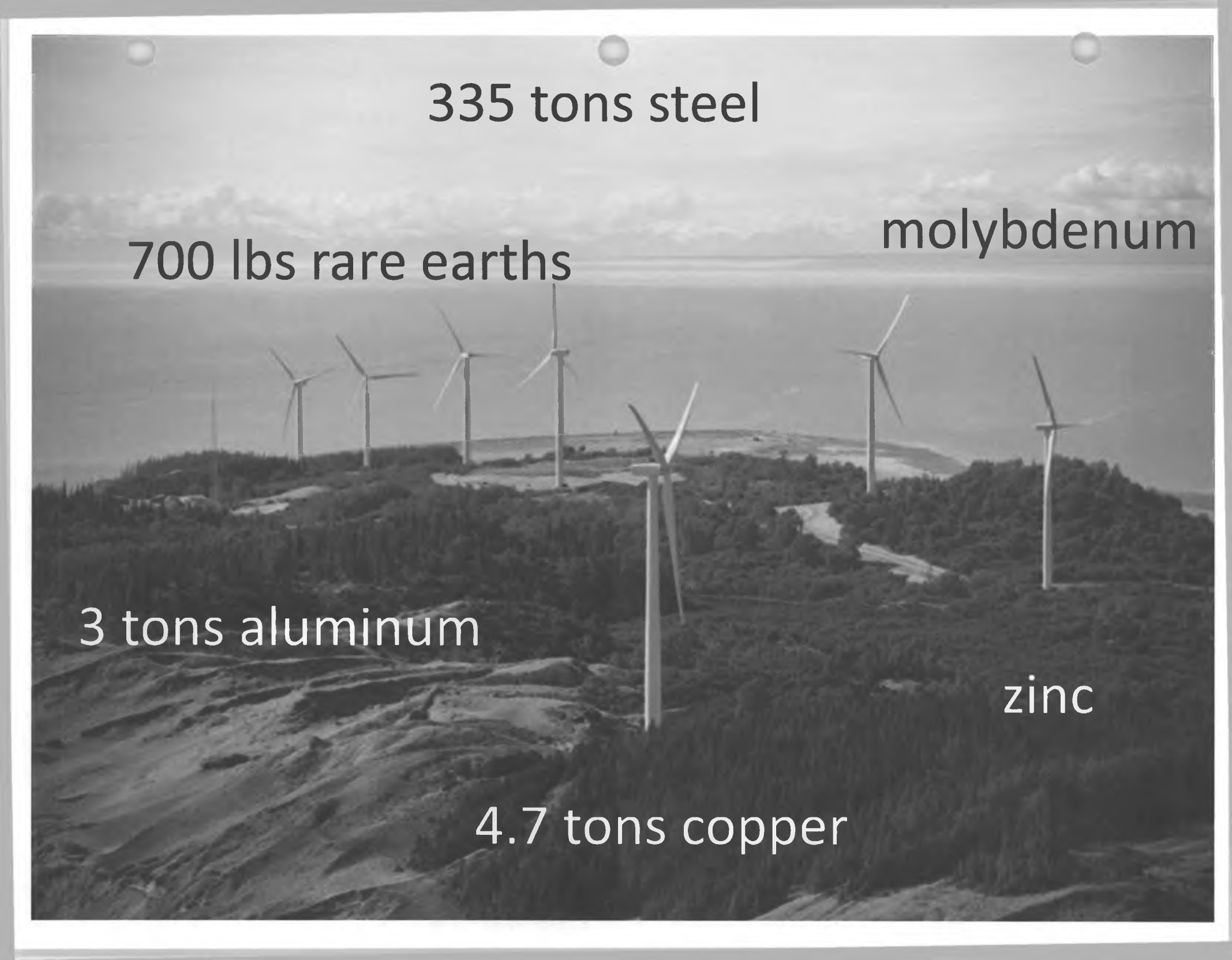
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# Why Do We Mine?



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335 tons steel

700 lbs rare earths

molybdenum

3 tons aluminum

zinc

4.7 tons copper

# Alaska has a World-Class Permitting System



Pogo Mine's Permitting Documents  
and Environmental Impact Statement



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# MINING DAY

*at the Fair*

FRIDAY, AUGUST 3

- Mining hard hats for the kids
- Special educational activities
- Prizes and giveaways
- Learn about mining's contributions to Alaska

*Enter to Win a mountain bike at our booth!*

*Mining Works for Alaska!*

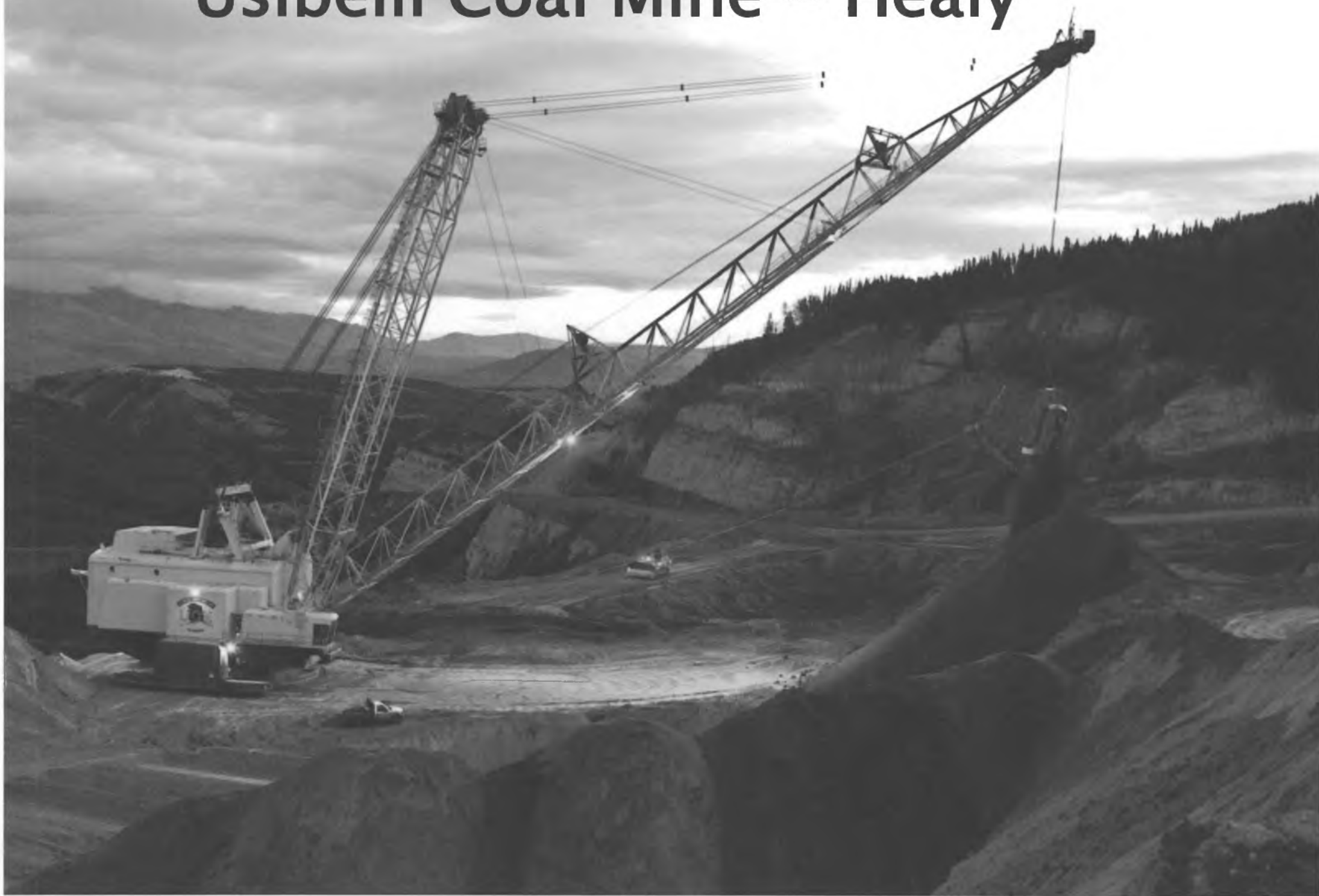




# Red Dog Mine - Northwest Alaska



# Usibelli Coal Mine – Healy



# Fort Knox Mine – Fairbanks



# Pogo Mine – Fairbanks/Delta Junction



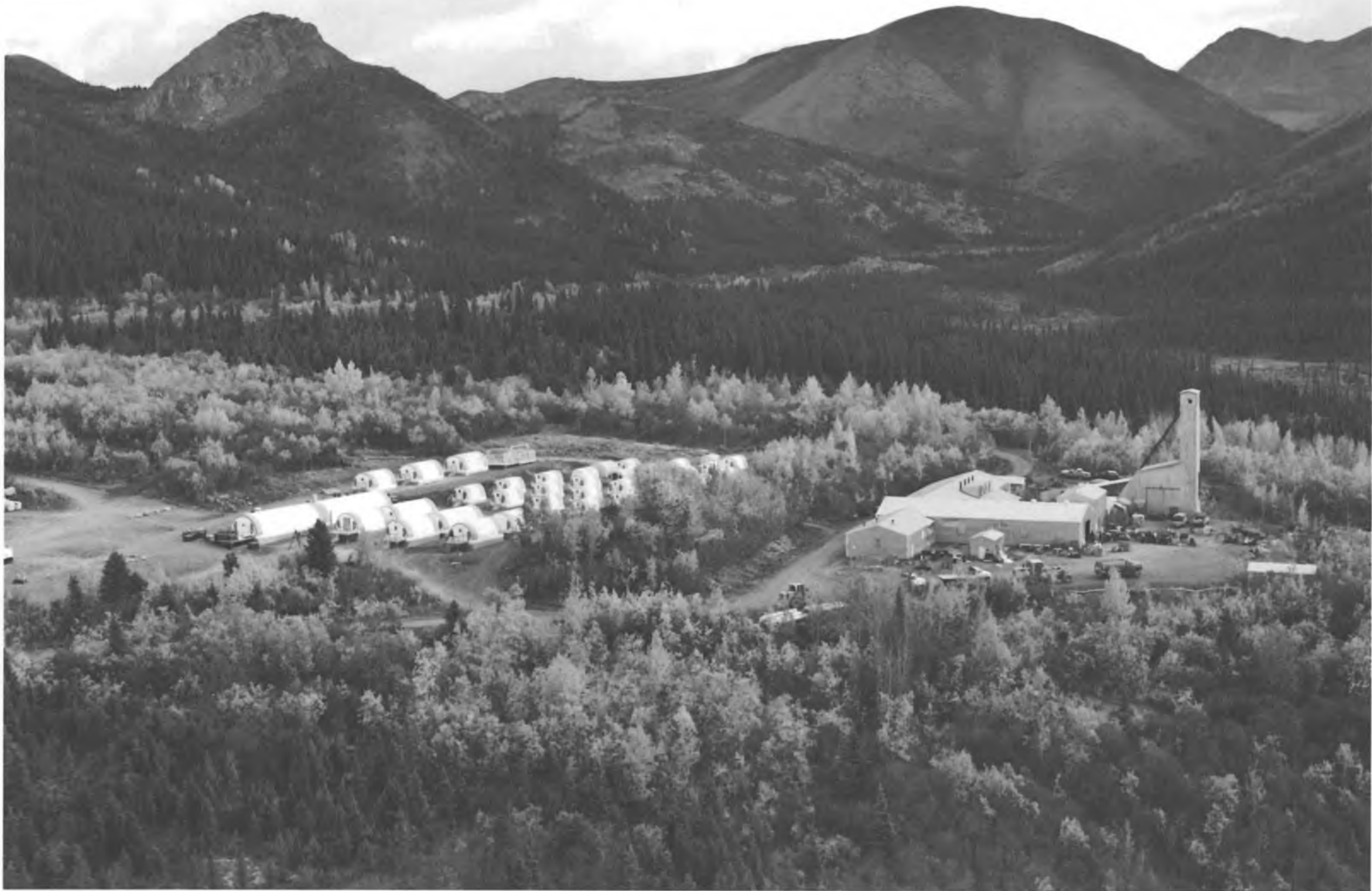
# Greens Creek Mine – Juneau



# Kensington Mine – Juneau



# Upper Kobuk Mineral Projects



# Livengood – Fairbanks



# Wishbone Hill – Palmer



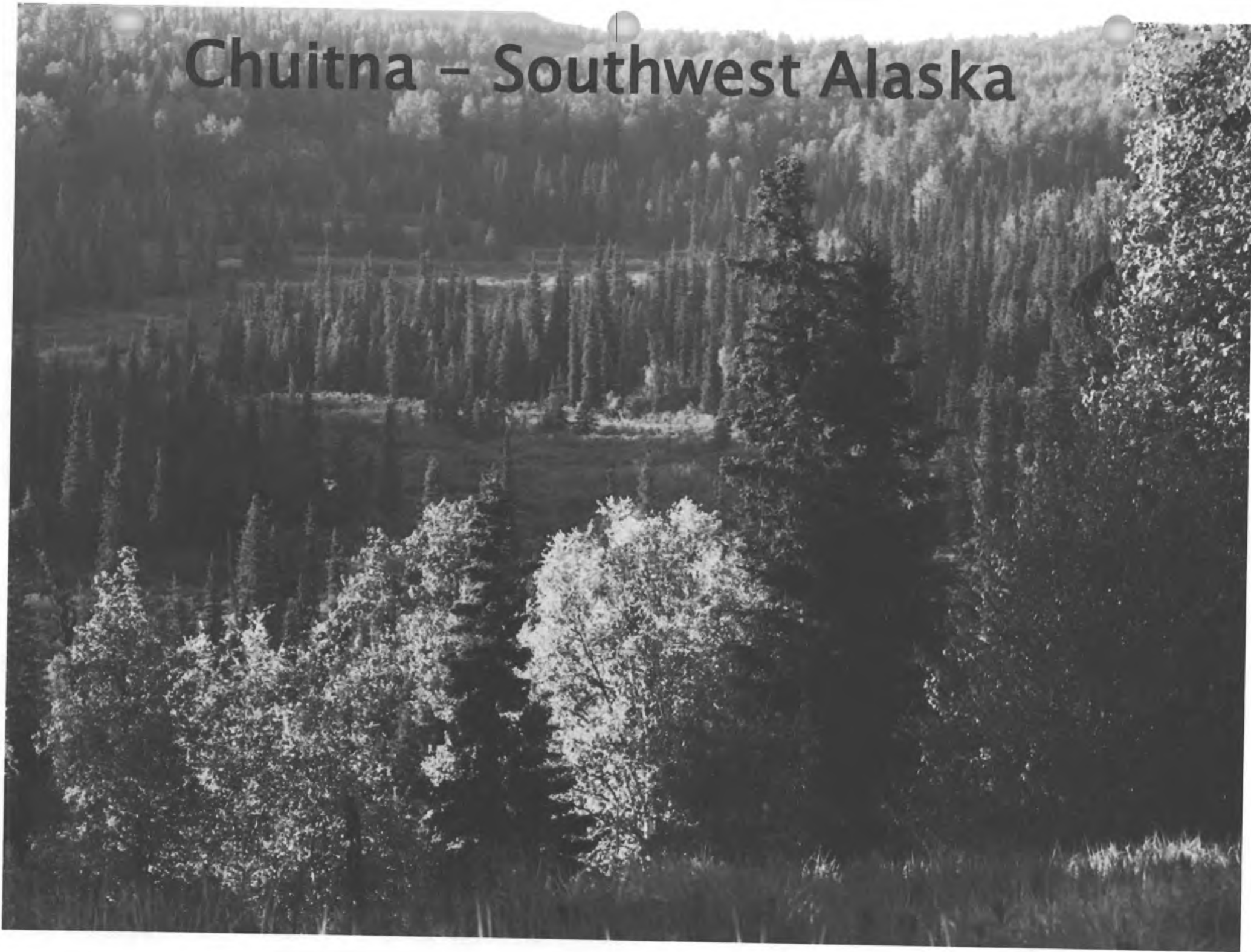
# Donlin Gold – Kuskokwim



# Pebble – Southwest Alaska



# Chuitna – Southwest Alaska



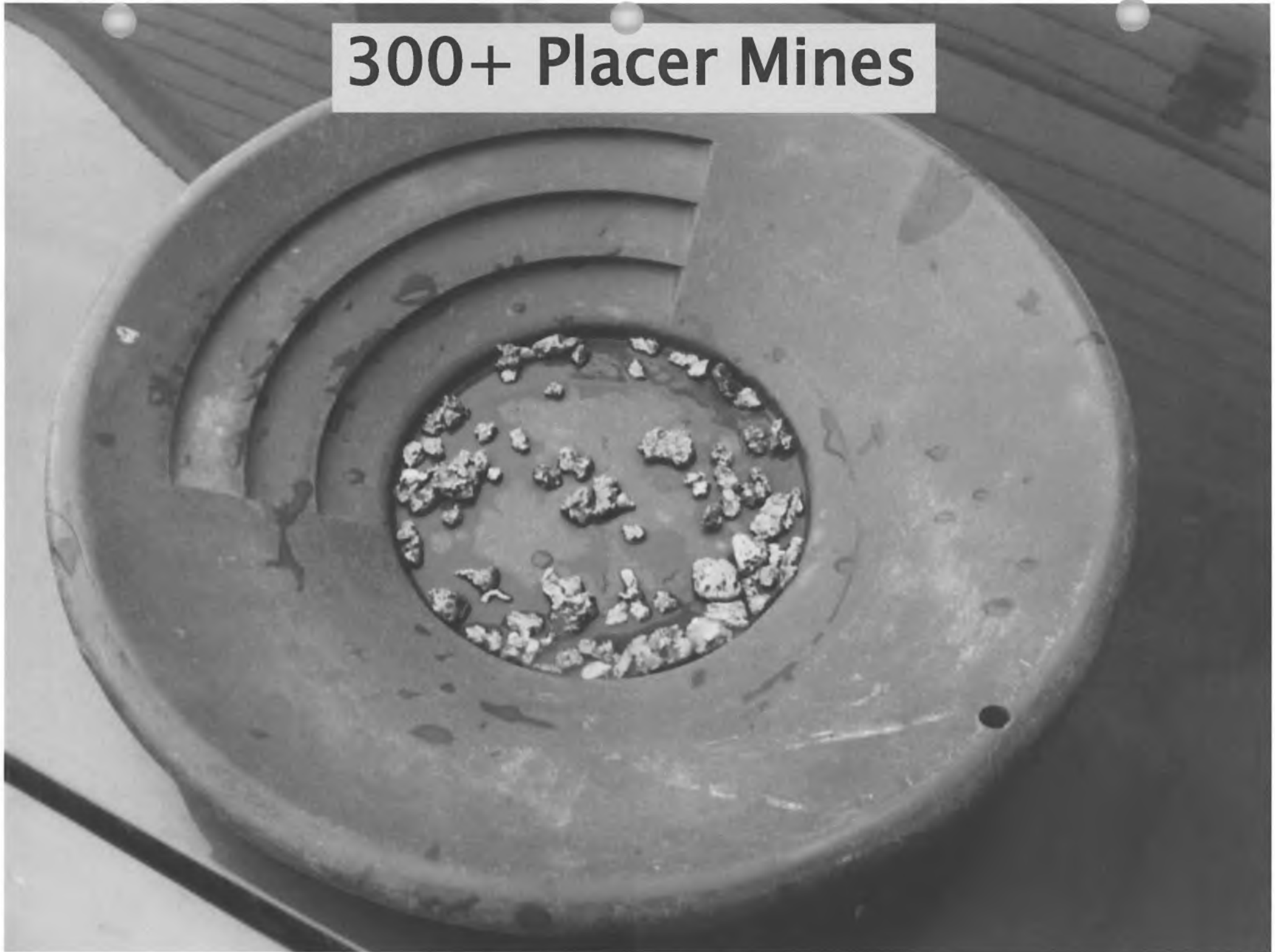
# Niblack – Prince of Wales Island



# Bokan-Dotson Riage Prince of Wales Island



# 300+ Placer Mines



# No Single Permit to Mine: there are many permits & authorizations

Mine permitting is a mixture of State, Federal and, potentially, local permitting requirements.  
Each project is unique.

## STATE

- Plan of Operations (DNR)
- Reclamation and Bonding (DNR)
- Waste Management Permits and Bonding (ADEC)
- CWA Section 402 APDES Water Discharge Permit
- Certification of ACOE Permits (ADEC)
- Sewage Treatment System Approval (ADEC)
- Air Quality Permits (ADEC)
- Fish Habitat and Fishway Permits (ADF&G)
- Water Rights (DNR)
- Right of Way/Access (DNR/DOT)
- Tidelands Leases (DNR)
- Dam Safety Certification (DNR)
- Cultural Resource Protection (DNR)
- Monitoring Plan (Surface/Groundwater/Wildlife) (DNR/DEC/DFG)

## FEDERAL

- US EPA Air Quality Permit review
- US EPA Safe Drinking Water Act (UIC Permit)
- US ACOE Section 404 Dredge and Fill Permit
- US ACOE Section 10 Rivers and Harbors Act
- US ACOE Section 106 Historical and Cultural Resources Protection
- NMFS Threatened and Endangered Species Act Consultation
- NMFS Marine Mammal Protection Act
- NMFS Essential Fish Habitat
- NMFS Fish and Wildlife Coordination Act
- USFWS Threatened and Endangered Species Act Consultation
- USFWS Bald Eagle Protection Act Clearance
- USFWS Migratory Bird Protection Act
- USFWS Fish and Wildlife Coordination Act

These are only some of the permits required!



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# Responsible Closure



True North (Fairbanks)

- Alaska law (AS 27.19) requires that a mine site must be returned to a stable condition compatible with the post-mining land use
- Financial assurance reassessed every 5 years
- Applies equally to US and non-US companies



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# Alaska Mining Activity in 2013

- \$180 million exploration expenditures
- \$250 million development expenditures
- \$3.4 billion in gross mineral production
- 300+ placer mines



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# Employment and Payroll



- 4,600 direct jobs
- 9,100 total direct and indirect
- \$630 million total payroll
- Average annual wage of \$100,000
- Residents of 80+ communities



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# Benefits to Alaska Native Corporations

- 7(i) and 7(j) royalty sharing
  - \$1.04 billion to NANA (1989–2013), of which \$609 million shared
- Jobs for shareholders
  - Red Dog 56%
  - Donlin Gold 90%
- Business partnerships (NANA Lynden, NMS)



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# Payments to Local Governments

\$16.8 million to local governments:

- \$8.7 million in PILT to NWAB
- \$5.2 million to FNSB
- \$2.8 million to CBJ
- Denali, City of Nome, etc.



Noatak School



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# Payments to State Government

- \$100.2 million in royalties, rents, fees, and taxes
- \$49.7 million in other state-government related revenues, including:
  - \$23.8 million to Alaska Railroad (moving coal, sand, gravel)
  - \$21.1 million to AIDEA (DeLong Mountain Regional Transportation System, Skagway Ore Terminal )
  - \$4.8 million to Alaska Mental Health Trust

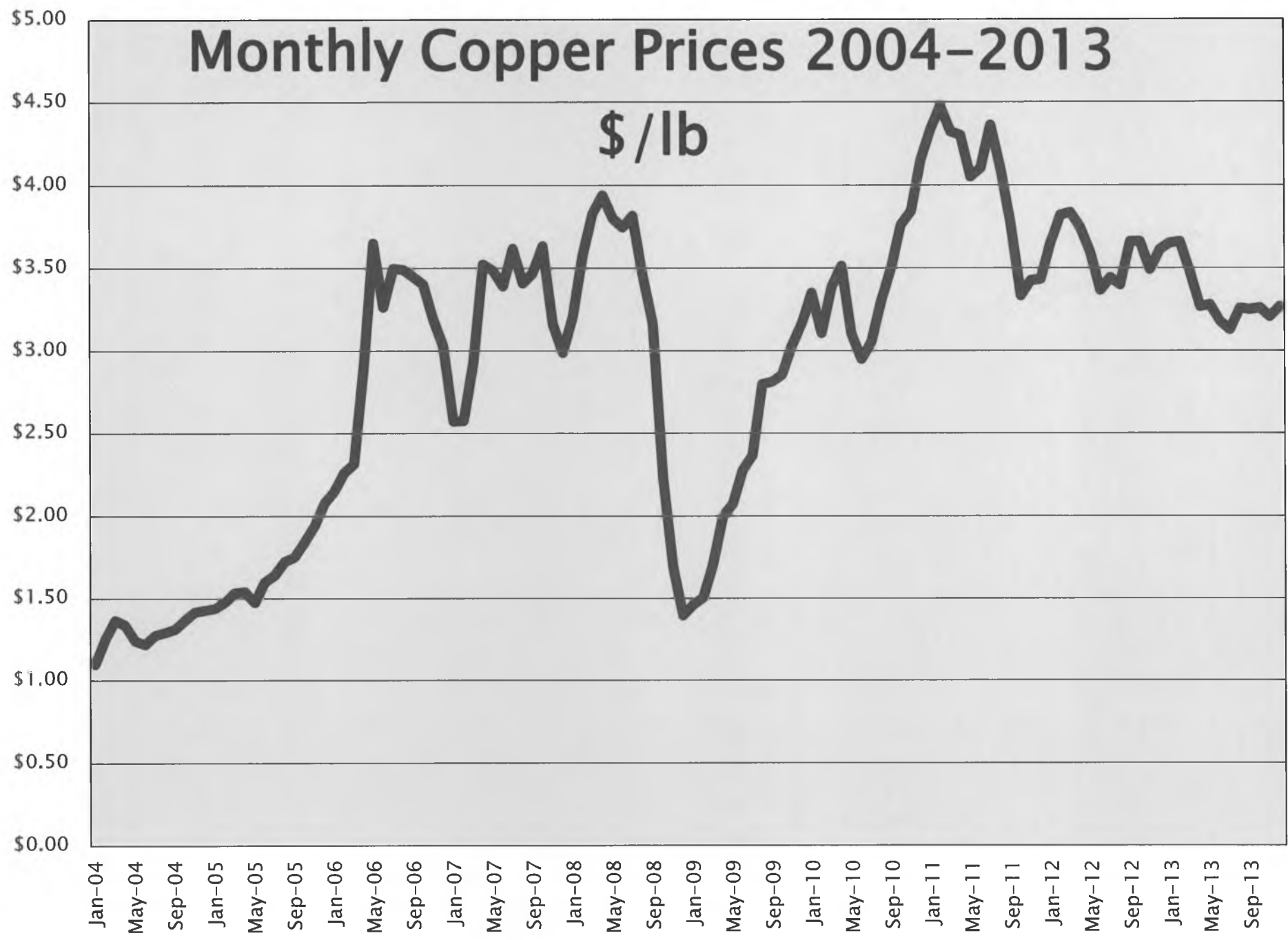


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# Monthly Copper Prices 2004-2013

\$/lb



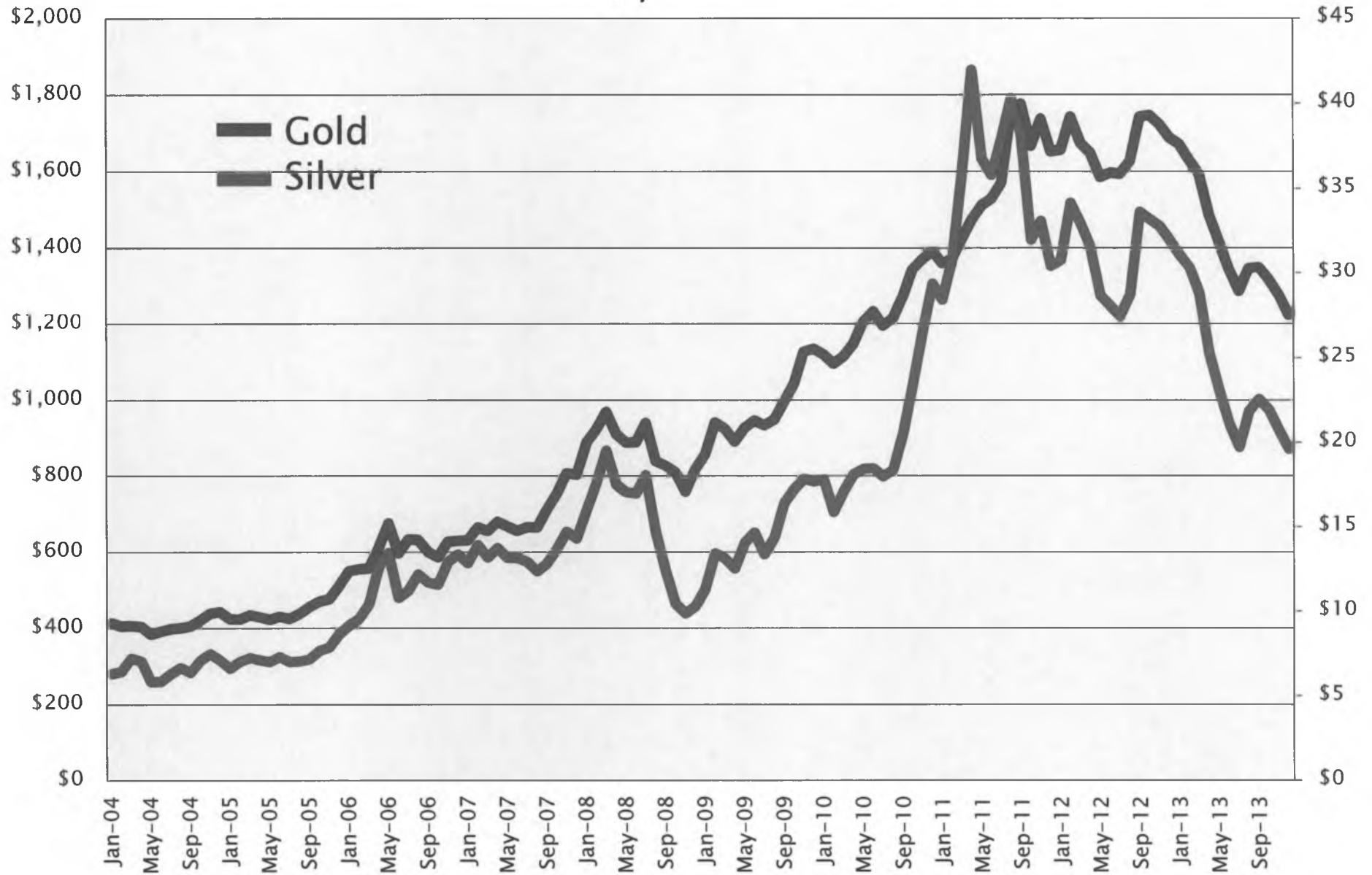
# Monthly Base Metal Prices 2004–2013

\$/lb



# Monthly Precious Metal Prices 2004–2013

## \$/Oz



# Operating Costs Keep Rising

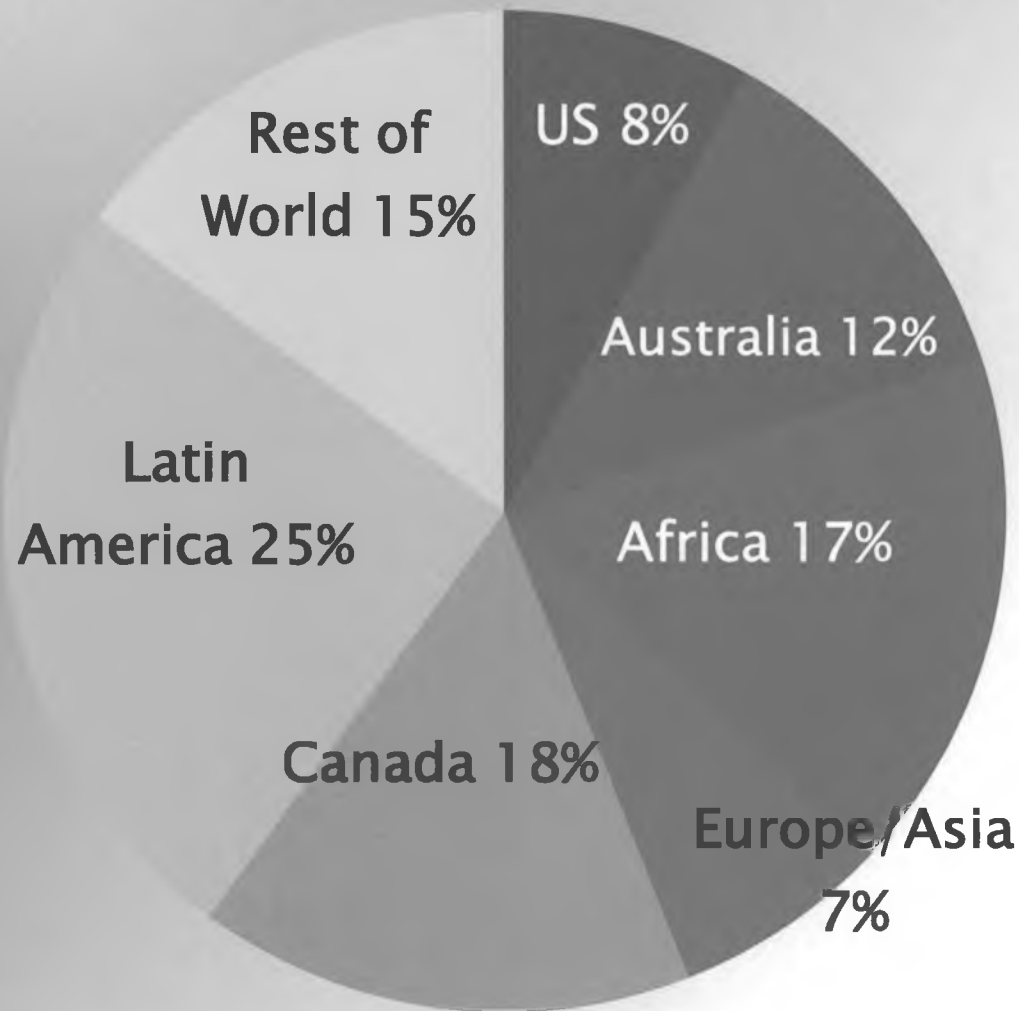
	2003	2013
Average mining salary	\$70,750	\$100,000
6 yard underground loader	\$570,000	\$1,100,000
40 ton underground haul truck	\$560,000	\$1,300,000



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# 2012 Exploration spending by region



Source: SNL Metals Economics Group, *October 2013*



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# Exploration Spending Declines



## Globally:

- \$21.5 billion (2012)
- \$15.2 billion (2013)
- 29% decline

US: 38% decline

## Alaska:

- \$275 million (2012)
- \$180 million (2013)
- 35% decline



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# Mining *Will Work* for Alaska



- Six producing large mines
  - ... and more to come
- Significant exploration potential
- Global importance
- Economic diversity for Alaska
- Local jobs, regional benefits



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# The Economic Benefits of Alaska's Mining Industry

January 2014

## Mining is a growing force in Alaska's economy

Mining is a growing force in Alaska's economy, providing jobs for thousands of Alaskans and millions of dollars of personal income throughout Alaska. Alaska's mining industry includes

exploration, mine development, and mineral production. Alaska's mines produce coal, gold, lead, silver, zinc, as well as construction materials, such as sand, gravel, and rock.

### In 2013, Alaska's mining industry provided:

- 4,600 direct mining jobs in Alaska.
- 9,100 total direct and indirect jobs attributed to Alaska mining industry.
- \$630 million in total direct and indirect payroll.
- Some of Alaska's highest paying jobs with an estimated average annual wage of \$100,000, twice the state average for all sectors of the economy.
- \$17 million in local government revenue through property taxes and payments in lieu of taxes.
- \$150 million in state government-related revenue through rents, royalties, fees, and taxes.
- \$144 million in payments to Alaska Native corporations.
- Mostly year-round jobs for residents of more than 80 communities throughout Alaska, many of which are found in rural Alaska where few other jobs are available.

### Largest Producing Mines and Selected Advanced Exploration Projects State and Local Government Tax Obligations

	Land Status	Mining License Tax	State Royalty Payments	Local Govt. Tax Payments
<b>Producing Mines</b>				
Fort Knox	State/Mental Health Trust	X	X	X
Greens Creek	Private/Federal	X		X
Kensington	Private/Federal/State	X	X	X
Pogo	State	X	X	
Red Dog	Private	X		X
Usibelli Coal	State	X	X	X
<b>Advanced Exploration (Projected Payments)</b>				
Bokan-Dotson Ridge	Federal	X		
Chuitna Coal Project	State/Mental Health Trust/ Private/Borough	X	X	X
Donlin Gold	Private	X		
Livengood	State/Mental Health Trust	X	X	
Niblack	State/Federal	X	X	
Pebble Project	State	X	X	X
Upper Kobuk	State/Federal/Private	X	X	
Wishbone Hill	State/Mental Health Trust/Private	X	X	X

### 2013 Economic Benefits

*estimated*

#### Exploration

- \$180 million spent on exploration.
- \$2.6 billion spent on exploration since 1981.



#### Development

- \$250 million spent on mine construction and other capital investment.

#### Production

- \$3.4 billion in gross mineral production value from Red Dog, Greens Creek, Fort Knox, Pogo, Nixon Fork, Kensington, and Usibelli Coal mines, placer mines, and rock, sand, and gravel operations.
- More than 300 placer mines produced approximately 100,000 ounces of gold.
- Approximately \$70 million in production value from more than 120 active rock quarries, and sand and gravel operations.
- Export value of \$1.6 billion, or 36% of Alaska's total exports (2012).

## Advanced Exploration Projects

### Bokan-Dotson Ridge Rare Earth

*Rare earth elements*

- Exploration from 1971 to 1981; renewed drilling program started in 2007
- Preliminary economic analysis and economic impact study released in 2013
- 190 potential production jobs

### Chuitna

*Coal*

- Currently in the permitting process; anticipate draft permit decisions in 2014-2015
- 300-350 potential production jobs

### Donlin Gold

*Gold*

- Discovered in 1988, continued exploration since 1995
- Permitting process began in 2012
- Up to 90% Calista shareholder hire at its camp
- Up to 1,400 potential production jobs, depending on the production timeline

### Livengood

*Gold*

- Placer mining began in 1914, lode exploration in 2003
- Approximately \$210 million invested to date
- Completed feasibility study in 2013
- 450 potential production jobs

### Niblack

*Copper, gold, silver, and zinc*

- Ongoing exploration for more than 30 years
- \$37 million invested since 2009
- Now focused on engineering, environmental, and other studies to support prefeasibility study
- 200 potential production jobs

### Pebble Project

*Copper, gold, and molybdenum*

- Discovered in 1987 on State of Alaska land, ongoing exploration, engineering, and environmental studies since 2002
- Over \$150 million spent on environmental baseline studies
- Approximately 1,000 potential production jobs

### Upper Kobuk Mineral Projects

*Gold, silver, copper, and zinc*

- Intermittent exploration from 1965 to 1998 and renewed efforts starting in 2004
- Preliminary Economic Assessments (Arctic) completed for underground & surface operations
- Exploration at Bornite continued in 2013 with updated resource statements expected in 2014
- Peak of 80 employees in 2013

### Wishbone Hill

*Coal*

- First mined in 1916
- Project feasibility study completed in 2011
- 75-125 potential production jobs

Mineral Potential

Prospecting

Stake Claim

Drilling



Construction

Operation

Environmental Studies, Protection, and R

# Selected 2013 Exploration Projects in Alaska

(Spending \$100,000-\$10 million in Alaska)



## 2013 Exploration Projects Under \$10 Million

Along with spending by Alaska's producing mines and advanced exploration projects, there was also spending in 2013 on other projects in earlier stages of exploration or advanced exploration. A selection of projects that spent under \$10 million in 2013 is provided in the table below. Collectively, these projects accounted for more than \$32 million in spending. This spending is often associated with drilling activity, camp support services, helicopter and other transportation services, and wages, funneling through a variety of sectors in the Alaska economy. The following list excludes projects with 2013 budgets of less than \$100,000.

### Selected Exploration Projects Spending Under \$10 Million in Alaska, 2013

Number on Map (back page)	Project/Deposit	Company	Target	Nature of Work	# of Peak Workers
<b>\$1 Million to \$10 Million</b>					
1	Chickaloon Coal	Riversdale Alaska	Coal	Geological mapping, drilling, geophysical survey, environmental studies	20
2	Gil	Kinross Gold	Gold	Drilling	15
3	Golden Summit	Freegold Ventures	Gold	Environmental studies	18
4	Lik-Su	Zazu Metals Corporation	Base metal	Environmental studies	4
5	MAN	Pure Nickel	Polymetallic	Drilling, prospecting	NA
6	Ophir	Kinross Gold	Gold	Rock and soil sampling	10
7	Palmer	Constantine Metal Resources	Polymetallic	Drilling	25
8	Tetlin	Contango ORE Inc.	Gold	Drilling, surface sampling	60
9	Terra	Westmountain Gold/ Corvus Gold	Gold	Bulk sampling Infrastructure development	NA
<b>\$100,000 to \$999,999</b>					
10	Estelle	Millrock Resources	Gold	Geophysical survey	9
11	Graphite Creek	Graphite One	Graphite	Drilling	15
12	Herbert Gold Project	Grand Portage Resources	Gold	Field reconnaissance, water sampling	4
13	Illinois Creek	Plan B Minerals	Gold/Silver	Rock and soil sampling	NA
14	Nome Offshore Project	Placer Marine Mining/ AuruMar	Gold	Environmental baseline studies, sampling	14
15	Richardson	Bluestone Resources	Gold	Geologic Mapping, Sampling	NA
16	Stellar	Millrock Resources	Gold, Copper	Airborne magnetic mapping, soil sampling, rock sampling	9
17	Whistler	Kiska Metals Corporation	Copper, Gold	Geological studies, environmental studies	4

NA=not available.

Source: Individual exploration company data. Prepared by McDowell Group, Inc.

# PRODUCTION TIMELINE

Advanced Exploration

Economic Feasibility & Environmental Studies

Permitting

Financing



## Mining Activity in Alaska

### Producing Mines

#### Fort Knox Mine

*Gold*

- Alaska's largest producing gold mine
- Largest single property taxpayer in the Fairbanks North Star Borough
- Discovered in 1984, producing since 1996
- 630 employees in 2013

#### Greens Creek Mine

*Silver, zinc, gold, and lead*

- Among the top 10 silver producers in the world
- Largest Southeast Alaska for-profit employer, in terms of payroll
- Discovered in 1975, producing from 1989 to 1993, and continuously since 1996
- 400 employees in 2013

#### Kensington

*Gold*

- Surpassed 100,000 ounces of gold in 2013
- Second largest private employer in Southeast Alaska in terms of payroll; over \$38 million in 2013
- Largest payer of property tax in the City & Borough of Juneau
- 306 full-time, year-round employees in 2013

#### Pogo Mine

*Gold*

- Discovered in 1994, producing since 2006
- 320 full-time employees in 2013
- Paid \$56 million in wages and benefits in 2013
- Capital spending exceeded \$57 million in 2013

#### Red Dog

*Zinc, lead, and silver*

- One of the world's largest zinc concentrate producers
- Only taxpayer in the Northwest Arctic Borough
- Discovered in 1968, producing since 1989
- 639 employees (including 131 contractors) in 2013

#### Usibelli Coal Mine

*Coal*

- In continuous production since 1943
- 140 full-time year-round employees in 2013
- Alaska's only operating coal mine, exporting about half of its production in 2013
- Fuels 30% of Interior Alaska's electricity

# PRODUCTION TIMELINE

Reclamation/Closure

Post-Closure Monitoring

Reclamation



## Strengthening Local Economies and Communities

Mining companies strengthen Alaska's local economies by employing Alaska residents from more than 80 Alaska communities. The industry also purchases supplies and services from hundreds of Alaska businesses. Additionally, the sector provided more than \$3 million in support for charitable organizations, scholarships, and community programs in 2013.

These mining companies are also a significant source of stable revenue for local governments, as well as significant state government revenue. In 2013, Alaska's mining industry paid:

### An estimated total of \$16.8 million to local governments, including:

- ▶ \$8.7 million in payment in lieu of taxes (PILT) by Red Dog to the Northwest Arctic Borough.
- ▶ \$5.2 million in property taxes paid by Fort Knox to the Fairbanks North Star Borough.
- ▶ \$1.6 million in property taxes paid by Kensington to the City and Borough of Juneau.
- ▶ \$1.2 million in property taxes paid by Greens Creek to the City and Borough of Juneau.
- ▶ Tax payments to other local governments, including Denali Borough, City of Nome and others.
- ▶ Mining industry employees also pay local property and sales taxes.

### An estimated \$100.2 million to state government in royalties, rents, fees, and taxes, including:

- ▶ \$71.4 million in mining license tax and rents and royalties.
- ▶ \$26.8 million in corporate income tax collections, representing 24% of the State's non-petroleum industry corporate tax receipts.
- ▶ Approximately \$2.0 million in state material sales, miscellaneous fees, and other taxes.

### Over \$49.7 million in other state government-related revenues, including:

- ▶ \$23.8 million to the Alaska Railroad Corporation for moving coal, sand and gravel.
- ▶ \$21.1 million to Alaska Industrial Development and Export Authority for the use of state-owned facilities (DeLong Mountain Regional Transportation System and Skagway Ore Terminal).
- ▶ \$4.8 million to the Alaska Mental Health Trust for mining claim and lease rent and royalty payments, and construction material sales.

## Partnering with Alaska Native Corporations

All Alaska Native corporations benefited from mining industry activity – in 7(i) and 7(j) royalty sharing payments, in jobs for shareholders, or through business partnerships.

- ▶ \$143 million in net proceeds from Red Dog Operations to NANA and distributed \$93.5 million to other Alaska Native regional and village corporations.
- ▶ NANA has received \$1.04 billion in proceeds from Red Dog (1989-2013), of which \$609 million has been shared in 7(i) and 7(j) royalty payments.
- ▶ 56% of 639 year-round jobs at Red Dog are filled by NANA shareholders, including Teck, NANA Lynden and NANA Management Services jobs.
- ▶ Calista Corporation anticipates \$1.2 million in royalties and other revenue for mineral agreements, including lode exploration, placer gold production, and construction material sales.
- ▶ 53% NANA shareholder hire at Upper Kobuk Mineral Projects (NovaCopper) since 2011.
- ▶ NANA-NovaCopper Exploration Agreement completed in October 2011 to facilitate exploration at Upper Kobuk Mineral Projects Project.
- ▶ Many Alaska Native Regional and village corporations and their subsidiaries have taken the opportunity to develop businesses that serve the mining sector.

