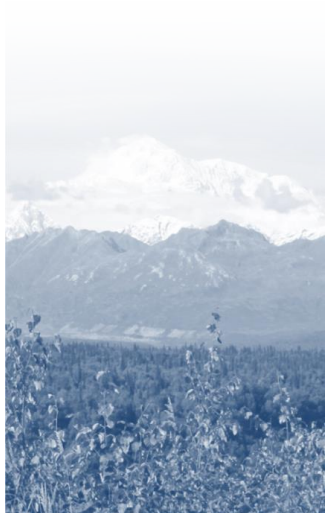
State of ALASKA

Department of Natural Resources






Pacific NorthWest Economic Region Summit

Big Sky, Montana
July 2015

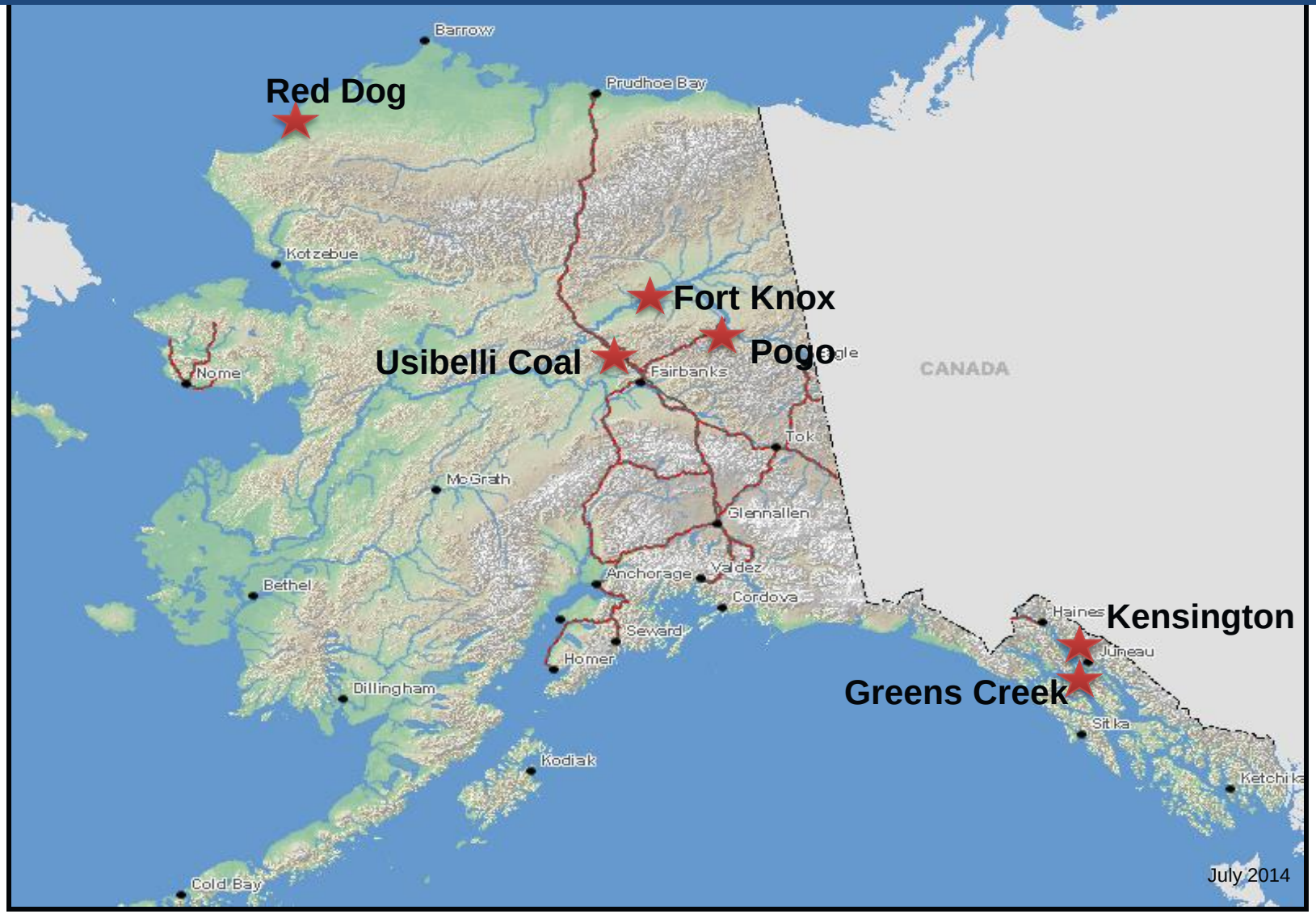
Ed Fogels, *Deputy Commissioner*

Alaska Department of Natural Resources
907-269-8431 Ed.Fogels@alaska.gov
www.dnr.alaska.gov

Presentation Outline

- Overview of operating mines in Alaska
- Alaska's coordinated mine permitting process.
- Alaska's involvement in British Columbia's Environmental Assessment process.

Alaska Mines



Red Dog

Main Pit (flooded) and Aqqaluk Pit (photo: OPMP)

Operator: Teck Alaska Inc.

Location: Approximately 82 miles north of Kotzebue on Nana Regional Corporation land

Principle minerals: Zinc and lead

Production: Opened in 1989. In 2014, approximately 4.3 millions tons of ore was milled producing 1.06 million tons of zinc concentrate and 219,000 tons of lead concentrate

Red Dog

Red Dog Tailings Management Facility back dam (photo: OPMP)

Tailings Storage Facility

- Subaqueous tailings disposal
- Main dam is earth and rock fill
- Back dam is rock fill with cement core
- Capacity: 88 million tons

Red Dog Tailings Main Dam

~198 feet tall
~4,983 feet long
~40,000 acre-feet

Fort Knox

Fort Knox Pit (photo: FGMI)

Operator: Fairbanks Gold Mining Inc. (Kinross Gold Co.)

Location: Approximately 25 miles northeast of Fairbanks on state and private lands

Principle minerals: Gold

Production: Opened in 1997. In 2014, approximately 387,000 gold equivalent ounces were produced

Fort Knox

Fort Knox TSF (photo: FGMI)

Tailings Storage Facility

- Subaqueous tailings disposal
- 366 feet tall, 4,500 feet long

Heap Leach Facility

- The Walter Creek Valley Heap Leach Facility started production in 2009
- In 2014, approximately 28.5 million tons of ore were placed on the heap leach
- Since 2009, a total of approximately 132.9 million tons have been placed on the heap leach and 601,885 ounces of gold have been produced.

Fort Knox Tailings Dam from north abutment

Pogo

Pogo Mine (photo: Sumitomo)

Operator: Sumitomo Metal Mining Pogo LLC.

Location: Approximately 38 miles northeast of Delta Junction on state land

Principle minerals: Gold

Production: Opened in 2005. In 2014, approximately 972,000 tons were mined, 967,000 tons were milled, and 342,000 troy ounces of gold were produced.

Pogo

Pogo Mine Dry-Stack Tailings Storage Facility (photo: Sumitomo)

Tailings Storage Facility

- Dry-stack tailings method
- Expansion completed in 2013
- 20 million tons total capacity

Kensington

Kensington Water Treatment Plan (photo: OPMP)

Operator: Coeur Alaska Inc.

Location: Approximately 45 miles north of Juneau on U.S. Forest Service and private lands

Principle minerals: Gold

Production: Opened in 2010. In 2014, approximately 642,000 tons were mined, 635,000 tons were milled, and 120,000 ounces of gold were produced.

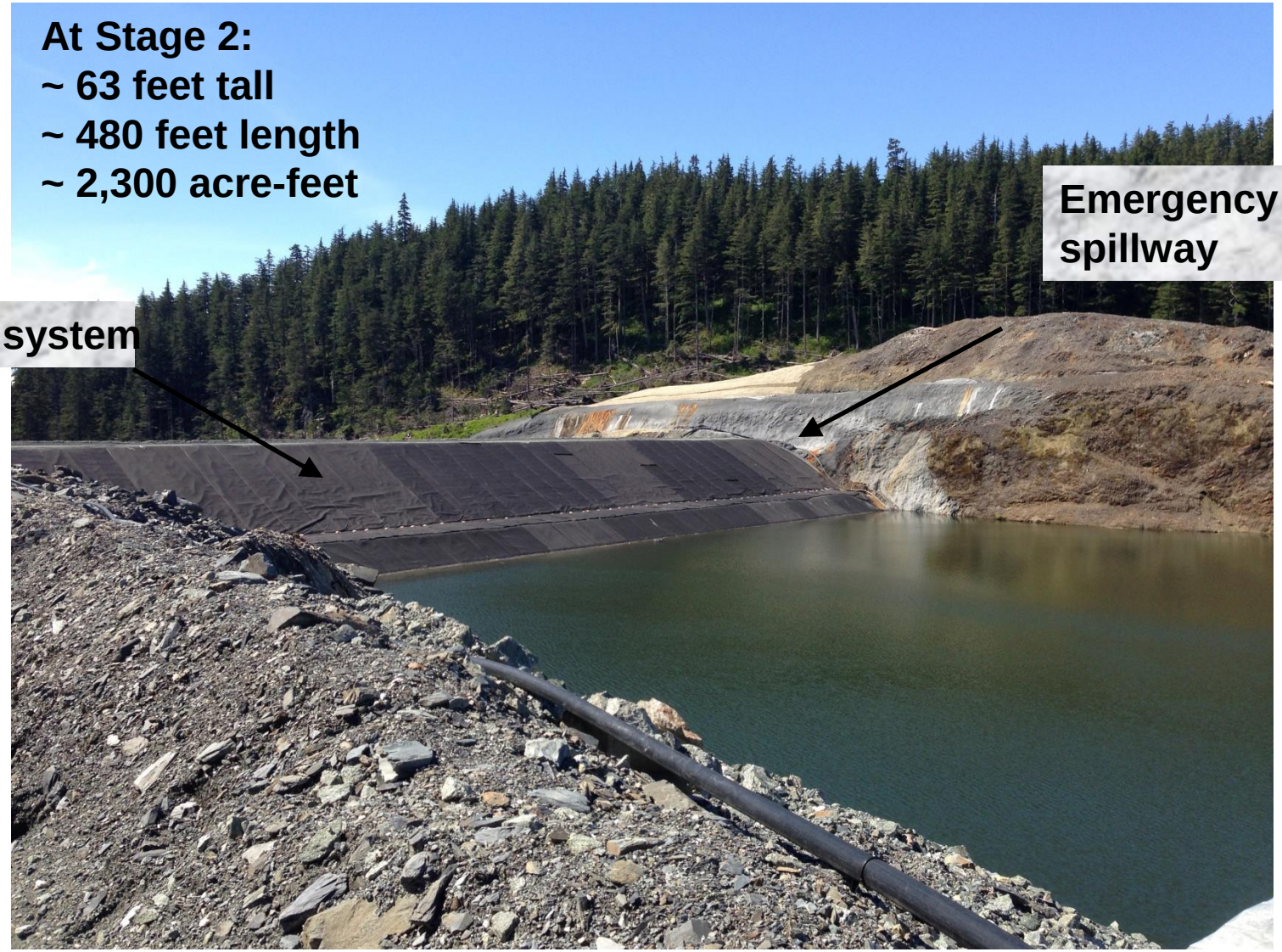
Kensington

Kensington Tailings Storage Facility Dam (photo: OPMP)

Tailings Storage Facility

- Subaqueous tailings disposal
- Rock-filled dam designed for water impoundment
- Phase II dam raised completed in 2013
- Capacity: 4.5 million tons

Lower Slate Lake Dam at Kensington Mine



Greens Creek

Operator: Hecla Greens Creek Mining Co.

Location: Approximately 18 miles southwest of Juneau on U.S. Forest Service and private lands

Principle minerals: Silver, zinc, lead, and gold

Production: Opened in 1989. In 2014, approximately 2,200 tons of ore was processed per day, producing approximately 7.8 million ounces of silver.

Greens Creek

Tailings Storage Facility

- Dry-stack tailings method
- Expansion started in 2015
- 7.4 million cubic yards total capacity
- 80 total acres in size

Alaska's Coordinated Mine Permitting Process

Greens Creek mill facility

The Large Mine Permit Team

- Multi-agency team approach to mine permitting
- Voluntary – MOU defines arrangement & proponent funds LMPT involvement
- DNR Project Coordinator assigned to the project & coordinates LMPT
- LMPT built from state agency staffs with extensive permitting experience
- First used in 1992 for the Fort Knox Project

Alaska's Coordinated Mine Permitting Process

Greens Creek floatation facility

The Large Mine Permit Team participants

- Department of Natural Resources
- Department of Environmental Conservation
- Department of Fish and Game
- Department of Transportation and Public Facilities
- Department of Health and Social Services
- Department of Law
- Department of Commerce, Community, and Economic Development

Alaska's Coordinated Mine Permitting Process

Kensington Water Treatment Facility

Large Mine Permit Team functions

- Coordinated review of project applications (can also link to federal review process)
- Review, analyze, and evaluate technical documents
- Conduct inspections and evaluate permit conditions at operating mines
- The process benefits from multi-disciplinary expertise of team members (geologists, engineers, hydrologists, biologists, environmental scientists)
- The Team is involved from pre-permitting through post-closure monitoring

Alaska's Coordinated Mine Permitting Process

LMPT touring Kensington Water Treatment Facility

Principle permitting goals

- Protect air, water, fish, and wildlife habitat quality through Best Management Practices (BMPs) and appropriately designed tailings, waste rock, water treatment, and power facilities
- Ensure long term physical and chemical stability of the site after closure through BMPs and approved mine reclamation
- Secure financial assurance so that these objectives can be met under duress

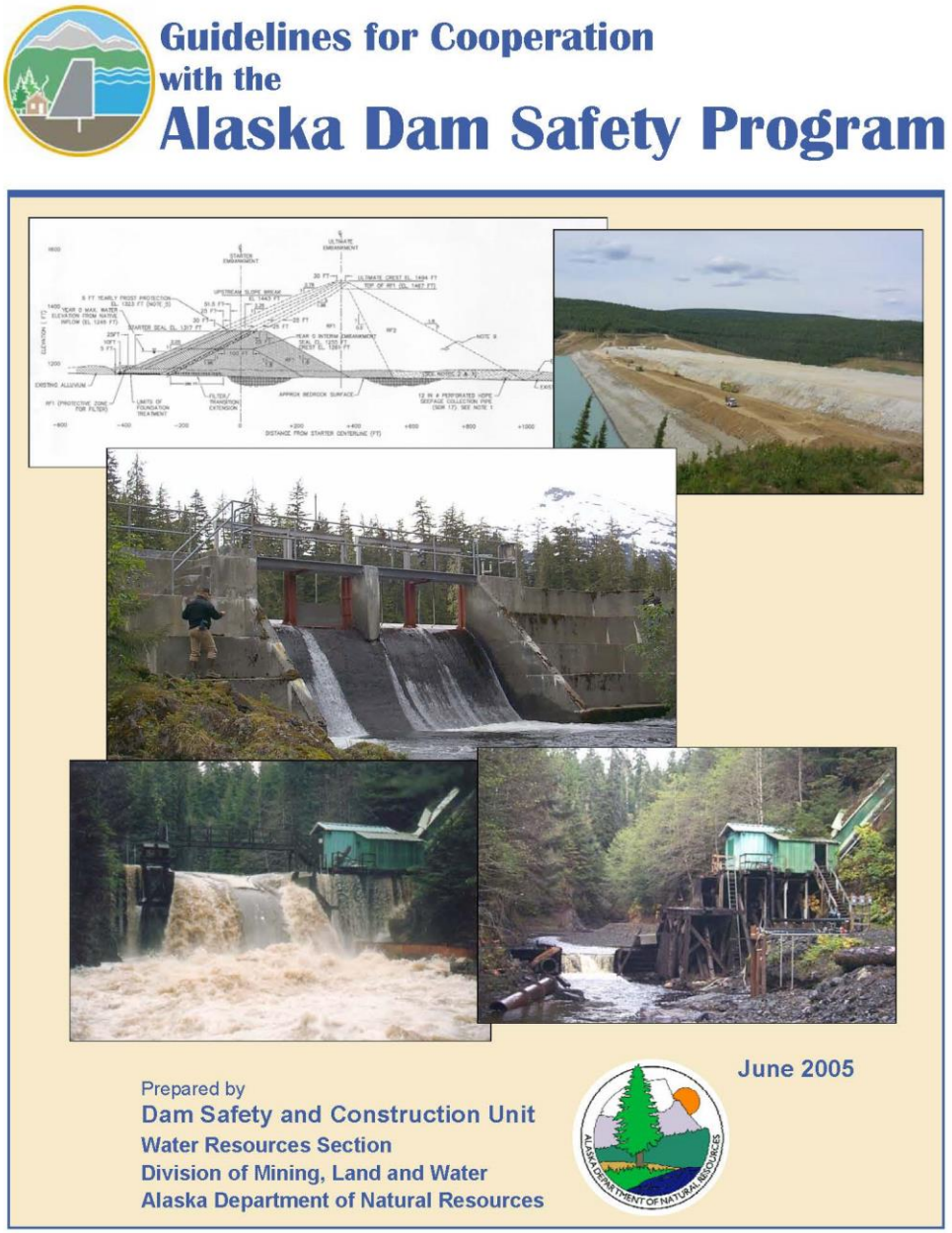
Alaska's Coordinated Mine Permitting Process

MULTIPLE PERMITTING/APPROVAL PROCESSES RUN IN PARALLEL

EIS	Federal	State	Local
Notice of Intent	USACE -Wetlands	DEC Integrated Waste Management	Borough Plan
Scoping	USFS - POO	DNR Reclamation Plan	City Plan
Draft EIS	E.O. 13175 Tribal Consultation	DNR/DEC Financial Assurance	Tribal Village Plan
Final EIS	USFWS/NMFS Endangered Species Act Consultation	ADEC Waste Management & Air Quality Monitoring Plan	
	NMFS EFH Assessment	DFG Fish Habitat Permits	
Record of Decision	**Federal Authorizations & Approvals**	**State Authorizations & Approvals**	**Local Consistency & Approvals**

Available online at:

- http://dnr.alaska.gov/mlw/water/dams/



British Columbia Mines

How Does the LMPT Function for B.C. Mines?

Alaska & B.C. Coordination: What's Next?

Project-Level

- Maintain open communication regarding proposed mining projects
- Continue to engage during environmental assessment processes
- More engagement in permitting process

Policy-Level

- Maintain a cabinet-level working group lead by Lt. Governor Mallott to discuss transboundary water quality concerns
- Negotiate bilateral agreements describing joint expectations and processes.

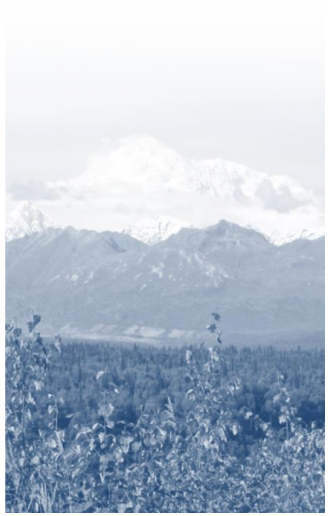
Opportunities for Collaboration

- Baseline Water Quality Monitoring
- Environmental Assessment and permitting Processes
- Other Common Concerns relating to Potential WQ Impacts of Development
- Transparency and Public Communication
- Funding

State *of* ALASKA

Department *of* Natural Resources






Thank You!

Ed Fogels, *Deputy Commissioner*

Alaska Department of Natural Resources

907-269-8431 Ed.Fogels@alaska.gov

www.dnr.alaska.gov