Donlin Mine
Potential Environmental Impacts
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• Stream Disruption/Destruction to Fish Habitat
  — Gas Pipeline
  — Minesite

• Water
  — Tailings
  — Waste Rock
  — Abandoned Pits

• Air
  — Dust (metals, especially mercury)
  — Direct Emission (mercury from electrowinning cells, carbon regeneration kiln, retort, and autoclaves)
STREAM DISRUPTION – Minesite

- Anaconda Creek
- American Creek
- Lewis Gulch
WATER – Contaminants of Concern at Donlin

Metals
• Mercury
• Arsenic*
• Antimony*
• Manganese
• Molybdenum
• Selenium*

Non-Metals
• Sulfate
• Ammonia

*Neutral Drainage metalloids
Risks from Mercury

- Mercury does not become an issue unless it methylates (When mercury combines with hydrogen and carbon, it becomes biologically available)
- Most risk if in wetlands and slow-moving water in mucky areas with high dissolved carbon because of methylation
- Less risk in clear, fast, oxygenated streams
- Low risk if mercury deposits on bare ground, rocks.
WATER – Potential Contamination from Mine Facilities
Goldstrike Mine, Nevada

Open pit mine from Donlin EIS
After Pit Lake is Full
Mercury Emissions

- 197 lbs/yr* (EIS – 2018)
- 66 lbs/yr* (Donlin Gold – 2021)

Donlin Tailings Dam

- Downstream-type dam construction
- Full bottom liner
- Seepage collection system under the liner
  - Closure top cover is permeable, and will allow some precipitation to infiltrate
  - This results in partially or fully saturated tailings
Gold Quarry Waste Rock Failure (Nevada)

Mount Polley Tailings Dam Failure (British Columbia)
Donlin TSF
Seepage
Collection
System
QUESTIONS