

01/22/13

LUNCH &

LEARN:

UNDERGROUND

MINING

METHODS

<TARGET><BILL></BILL><SUBJECT>01-22-13 LUNCH and LEARN
UNDERGROUND MINING
METHODS</SUBJECT><COMM>HRES28</COMM></TARGET>

Lunch and Learn

Tuesday at Noon

Capitol Room 106

An In-depth Look at Alaska's Resources

Lunch provided by presenters

**HOSTED BY
REP. ERIC FEIGE &
REP. DAN SADDLER
CO-CHAIRS
House Resources**

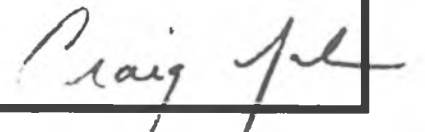
**Contact:
Linda Hay, Staff
465-3715**

Tuesday, January 22, 2013

Program Title: **Underground Mining Methods**

Presenters: Mike Satre, Executive Director
Council of Alaska Producers

Sponsor: Council of Alaska Producers



House Rules Committee Chair

Born and raised in Southeast Alaska, Mike Satre has 15 years of technical and managerial experience within the mining industry. His professional background consists of work as a geologist in both open-pit and underground mines and he has worked at the Hecla Greens Creek mine near Juneau since 1999.

In 2011, Mike was seconded by Hecla Greens Creek to the Council of Alaska Producers (CAP) to commence a two year term as Executive Director. CAP is a non-profit trade association formed in 1992 and serves as a spokesperson for the producing large metal mines and large mine developments in Alaska.

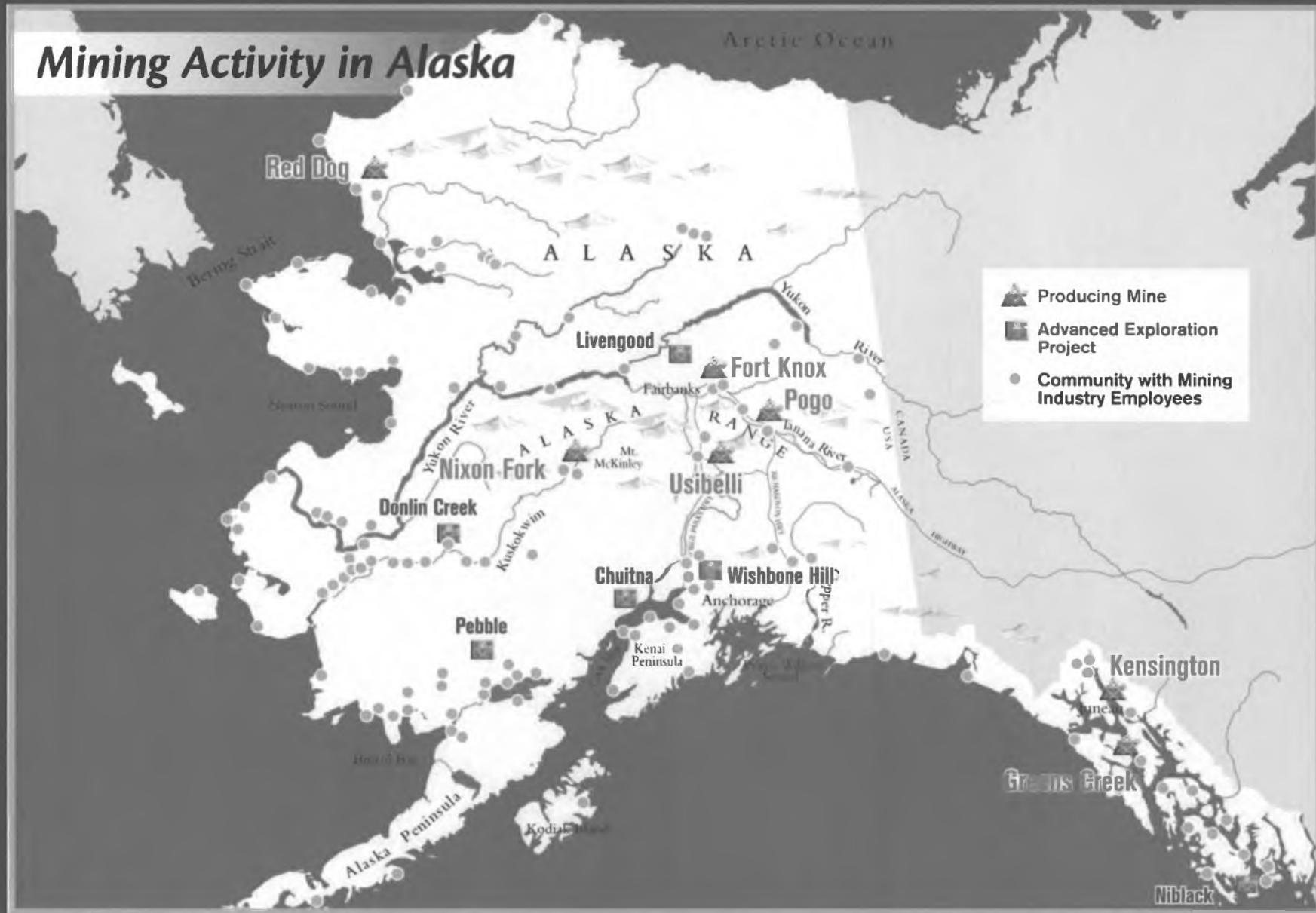
Outside of work, Mike has served on the local and statewide boards of the Alaska Miners Association and since 2005 he has served on the City and Borough of Juneau Planning Commission, which he currently chairs. Mike also serves on the board of the Juneau Ski Club and, along with his wife Sarah, coordinates the Mitey Mite Youth Ski Racing program.

House Resources Committee Lunch and Learn

Underground Mining Methods

Mike Satre
Council of Alaska Producers

Underground Mining



Underground Miners, c. 1900



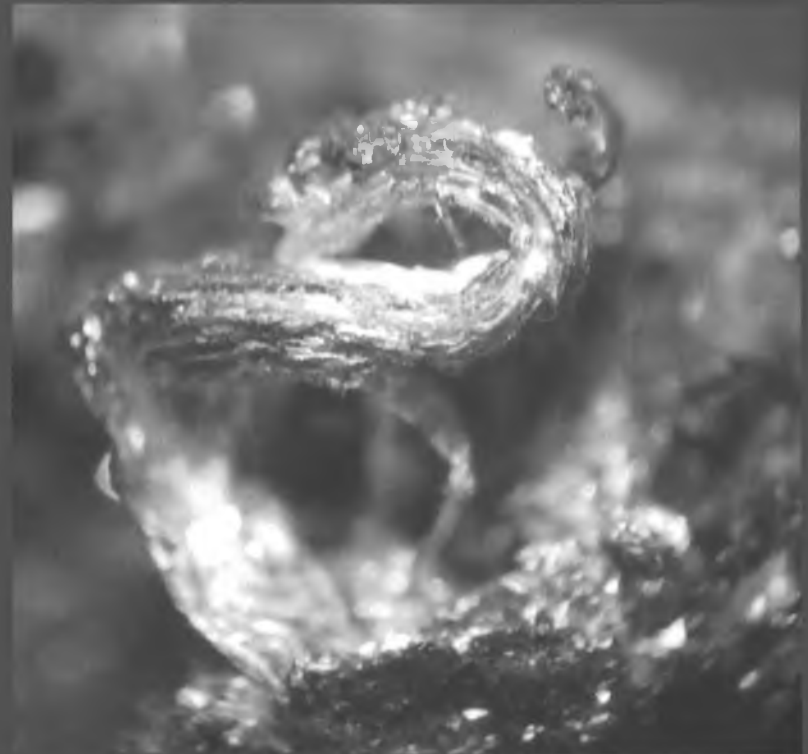
Underground Miner 2013



1/19/2013

Mining Method Selection

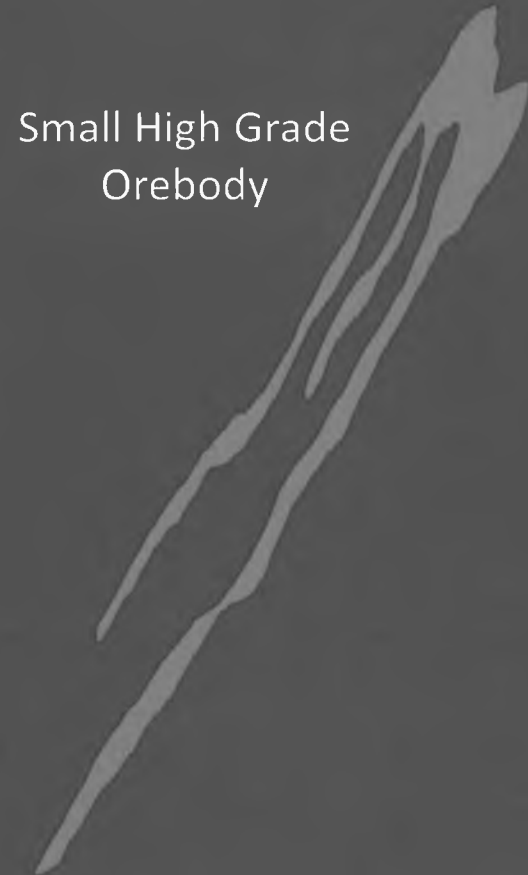
- Deposit Type
- Deposit Size
- Deposit Location
- Advances in Technology
- Regulatory Requirements



Open Pit or Underground?

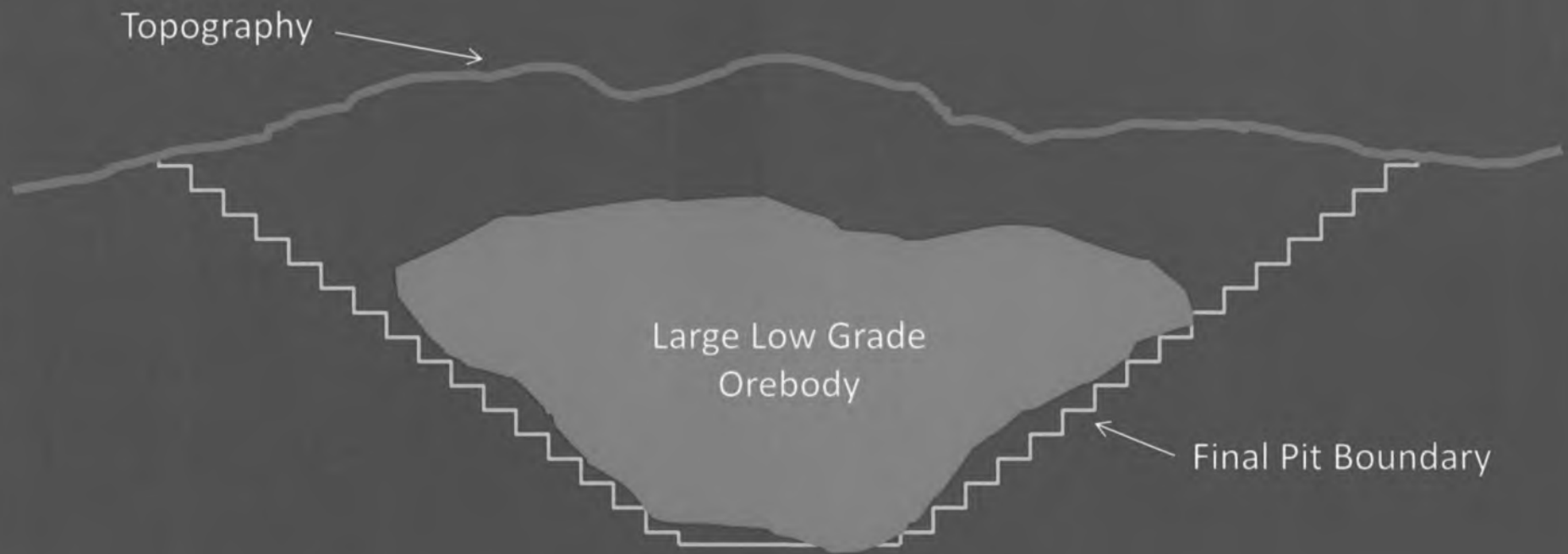


Large Low Grade
Orebody

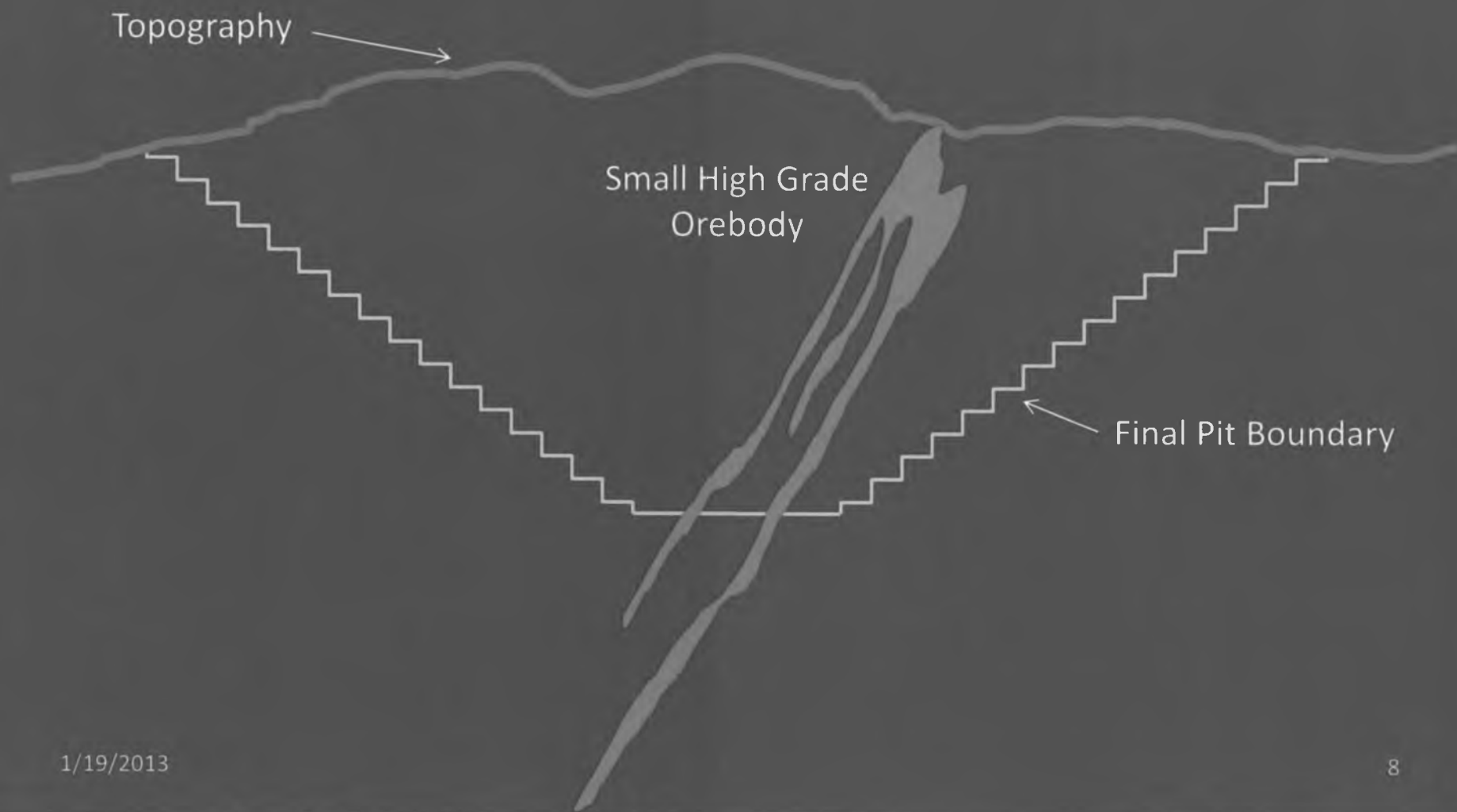


Small High Grade
Orebody

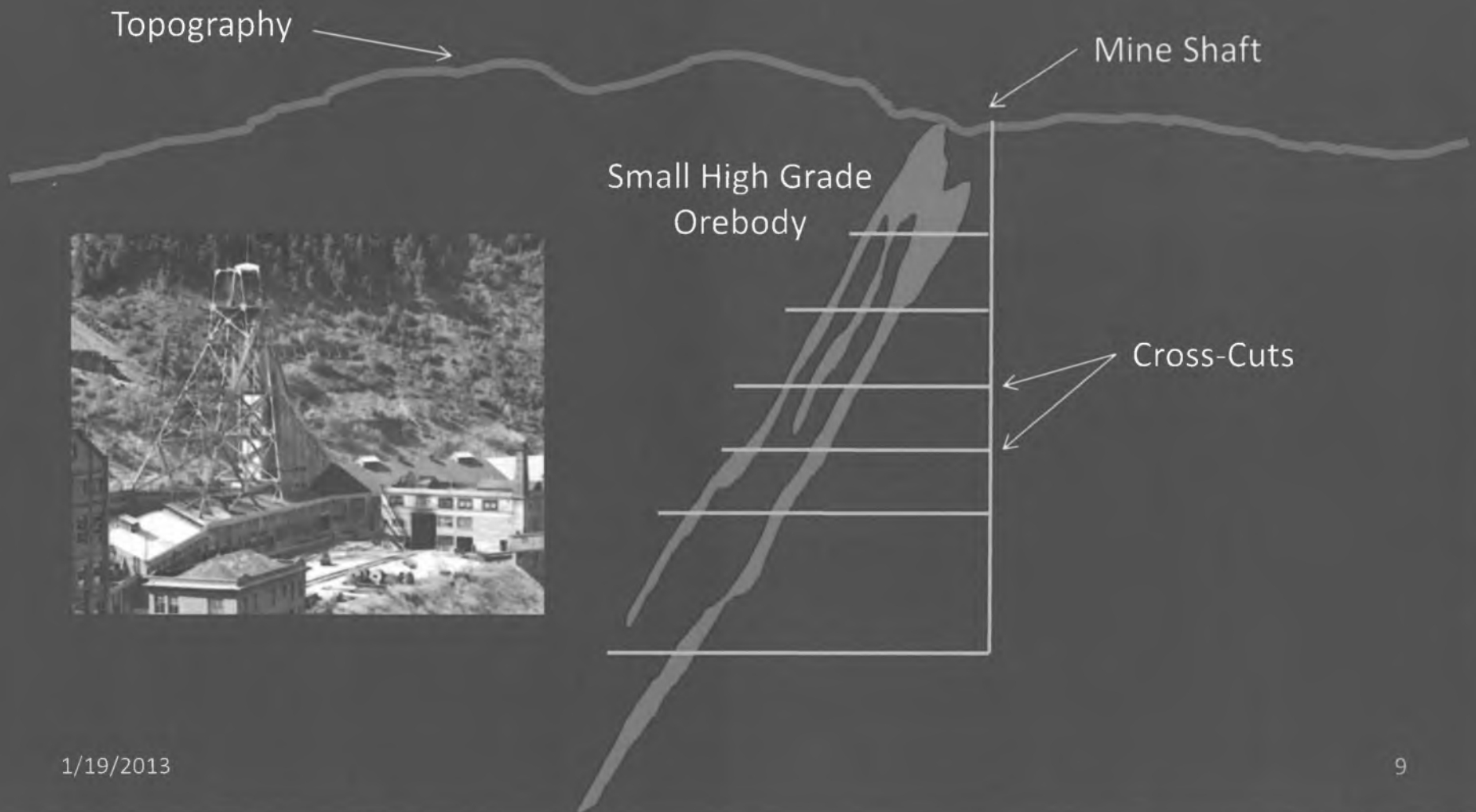
Open Pit



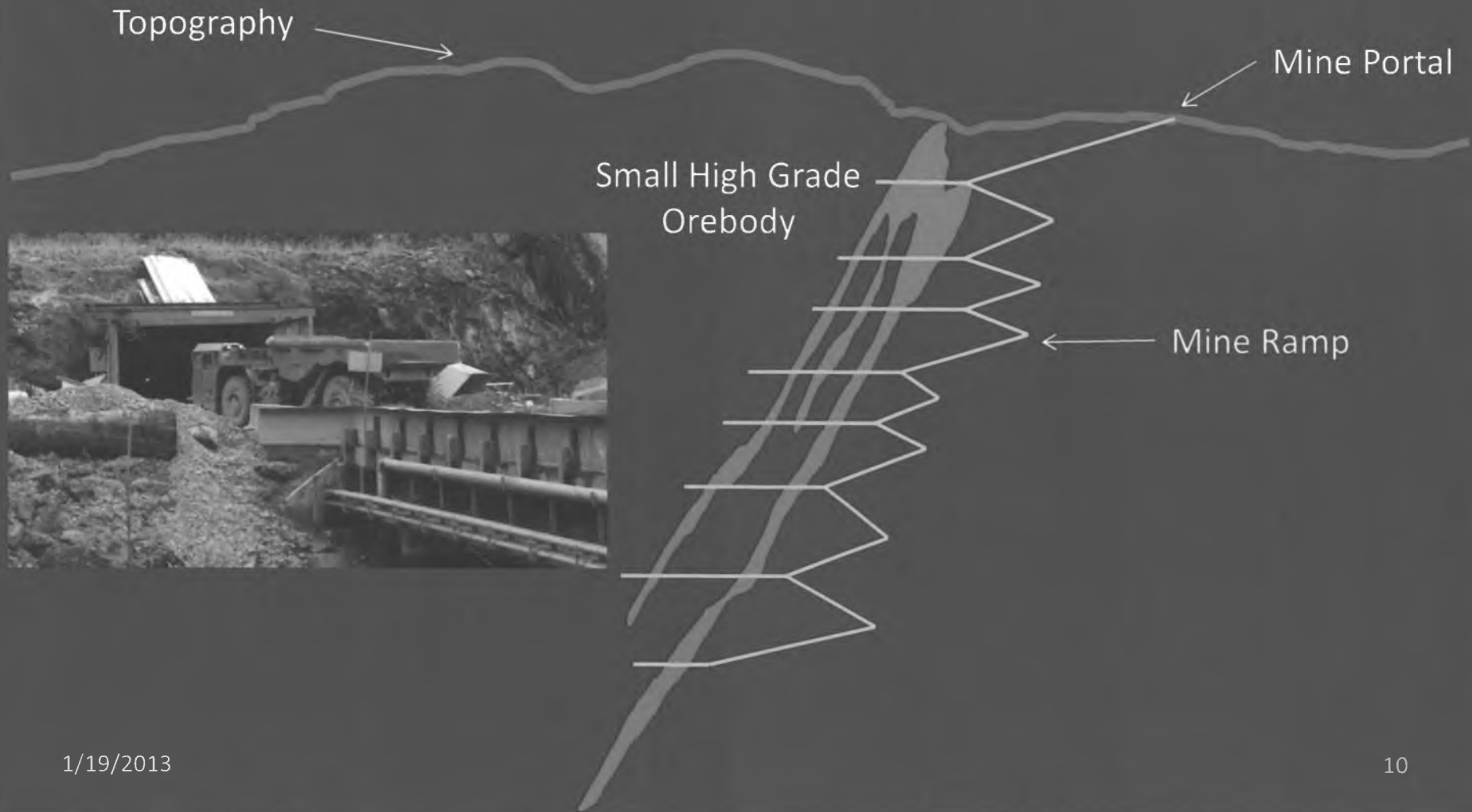
Open Pit?



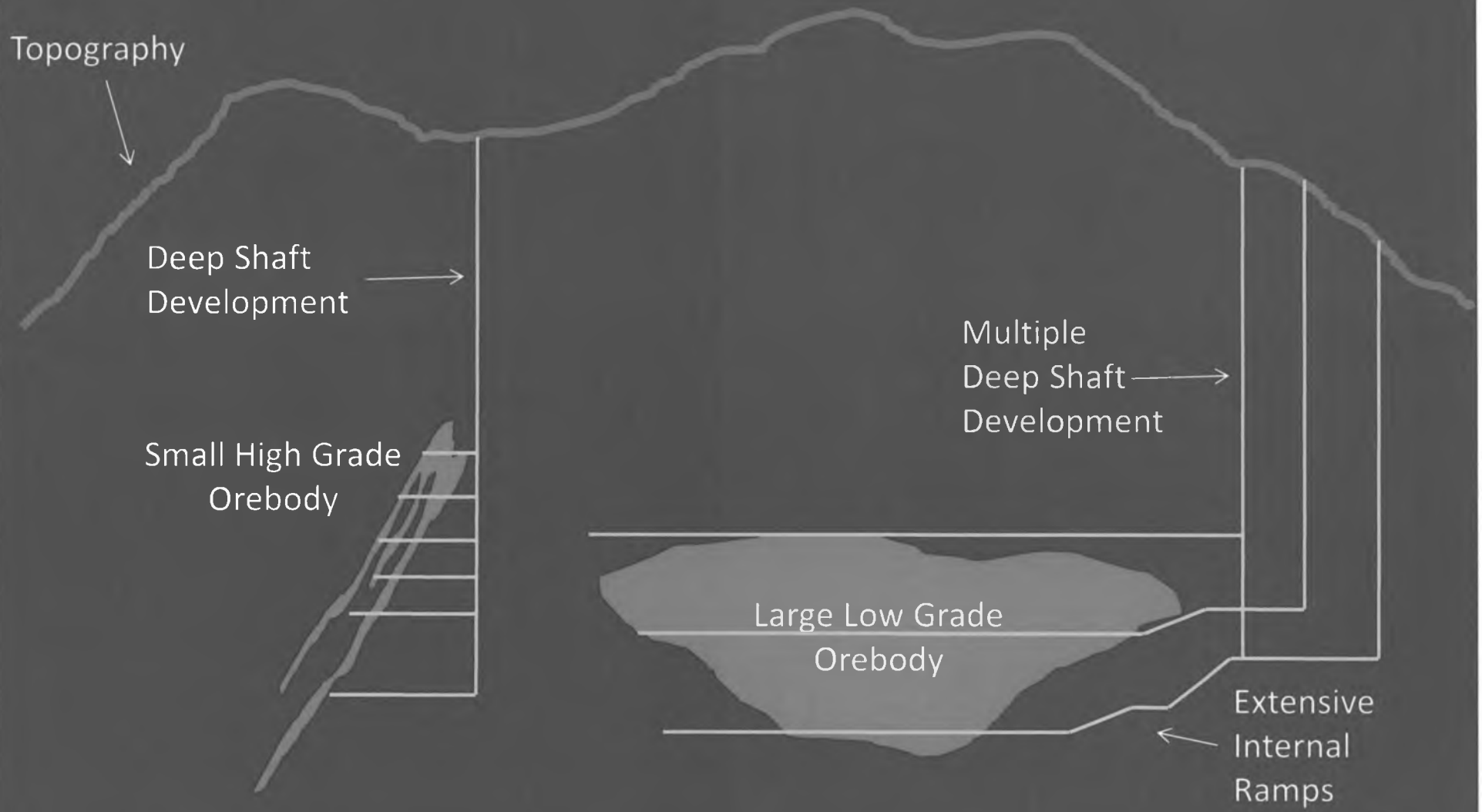
Underground Mine – Shaft Access



Underground Mine – Portal Access



Underground Mine?

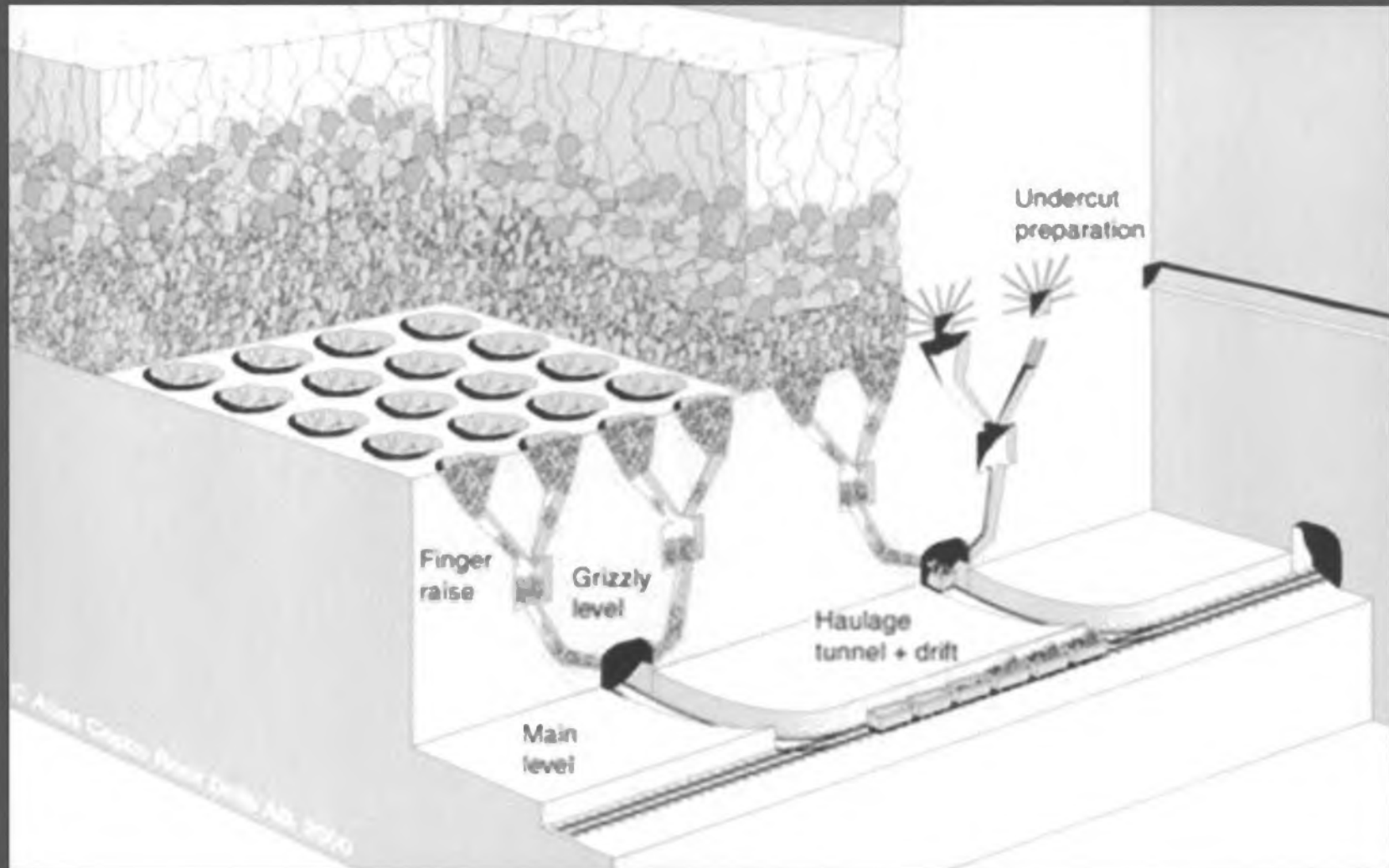


Underground Mining Methods

- Matched to Deposit Type
- Maximize Ore Extraction
- Minimize Capital
- Engineering Requirements
- Regulatory Requirements



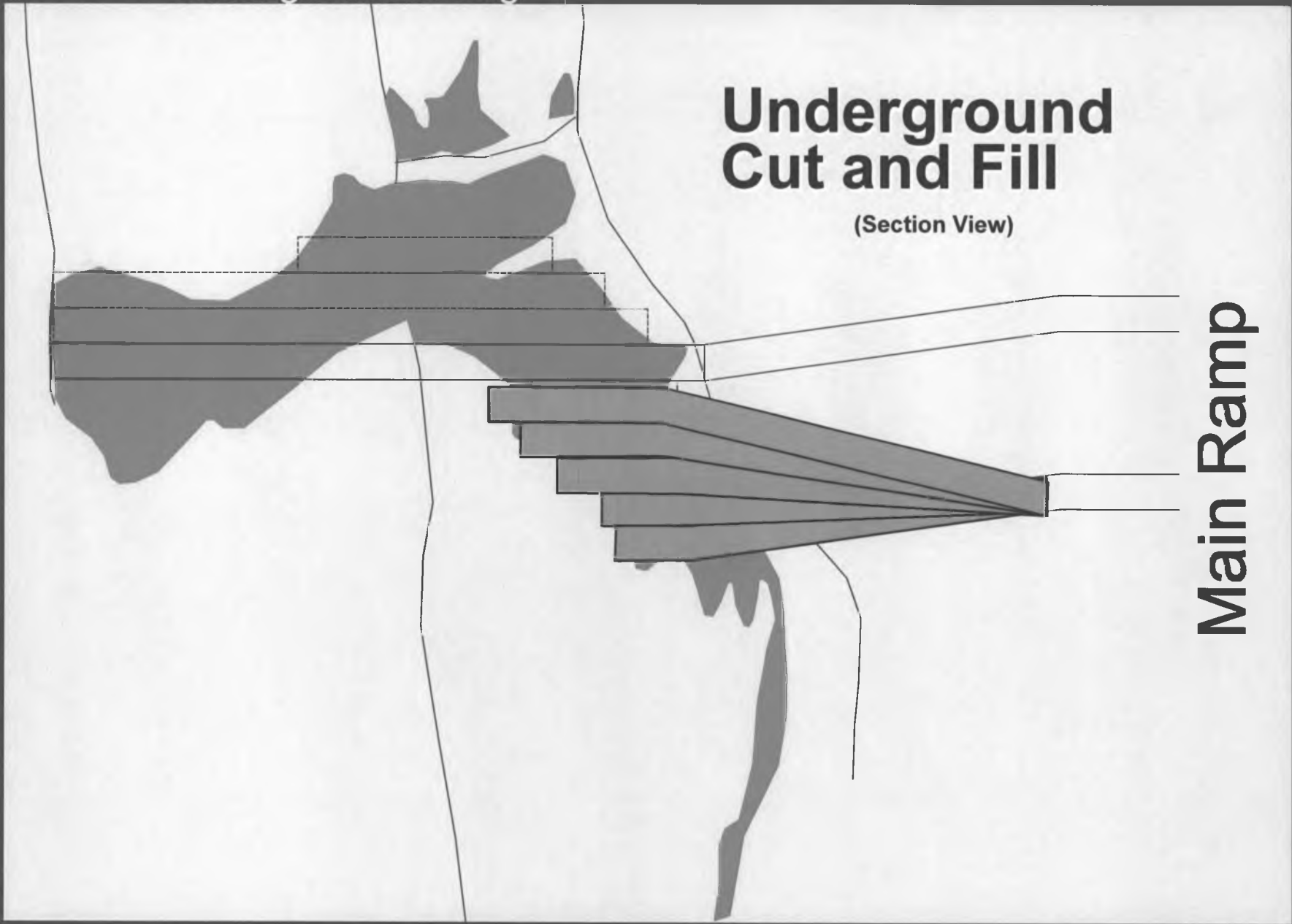
Underground Block Cave



Underground Cut and Fill

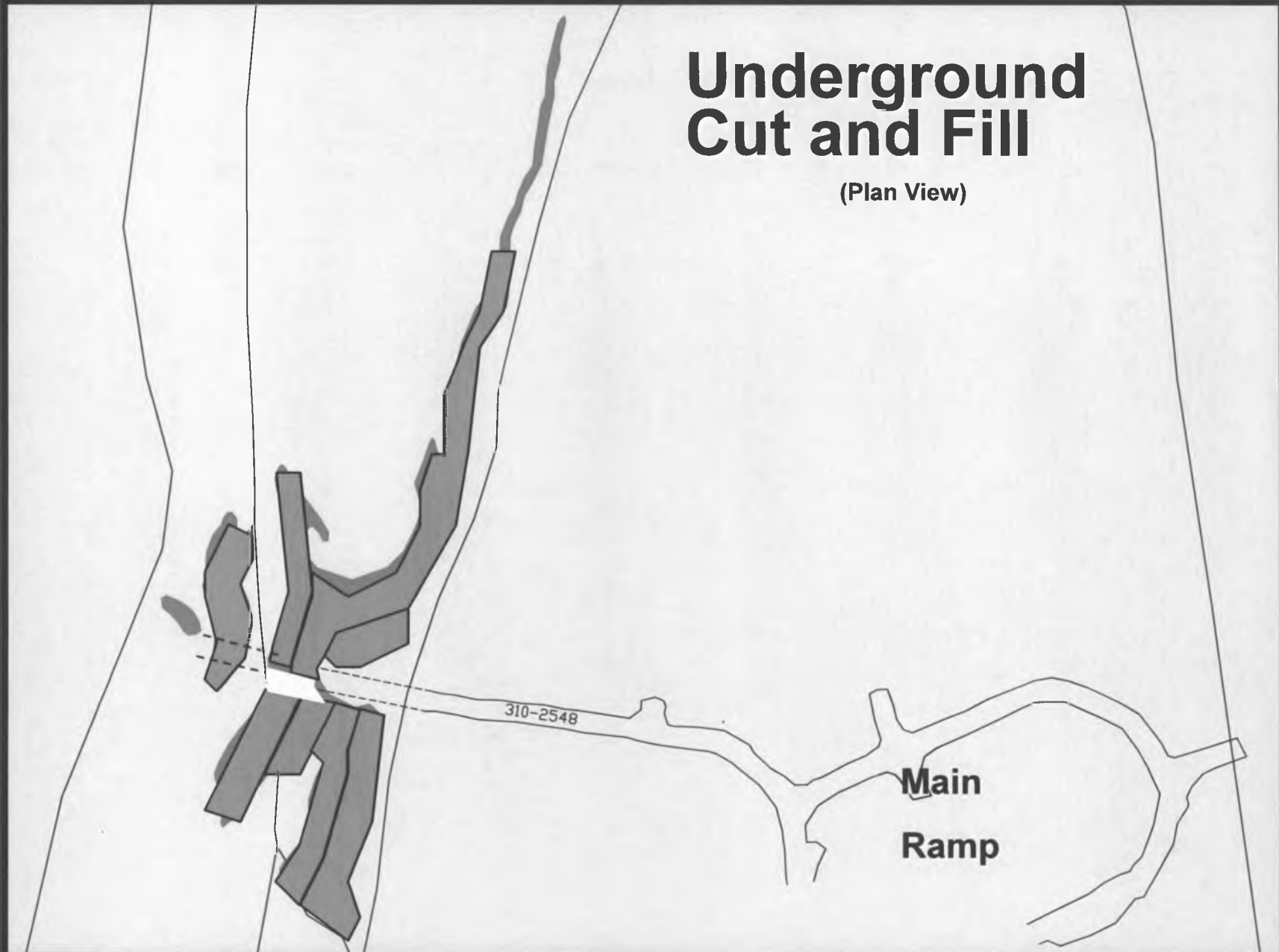
(Section View)

Main Ramp

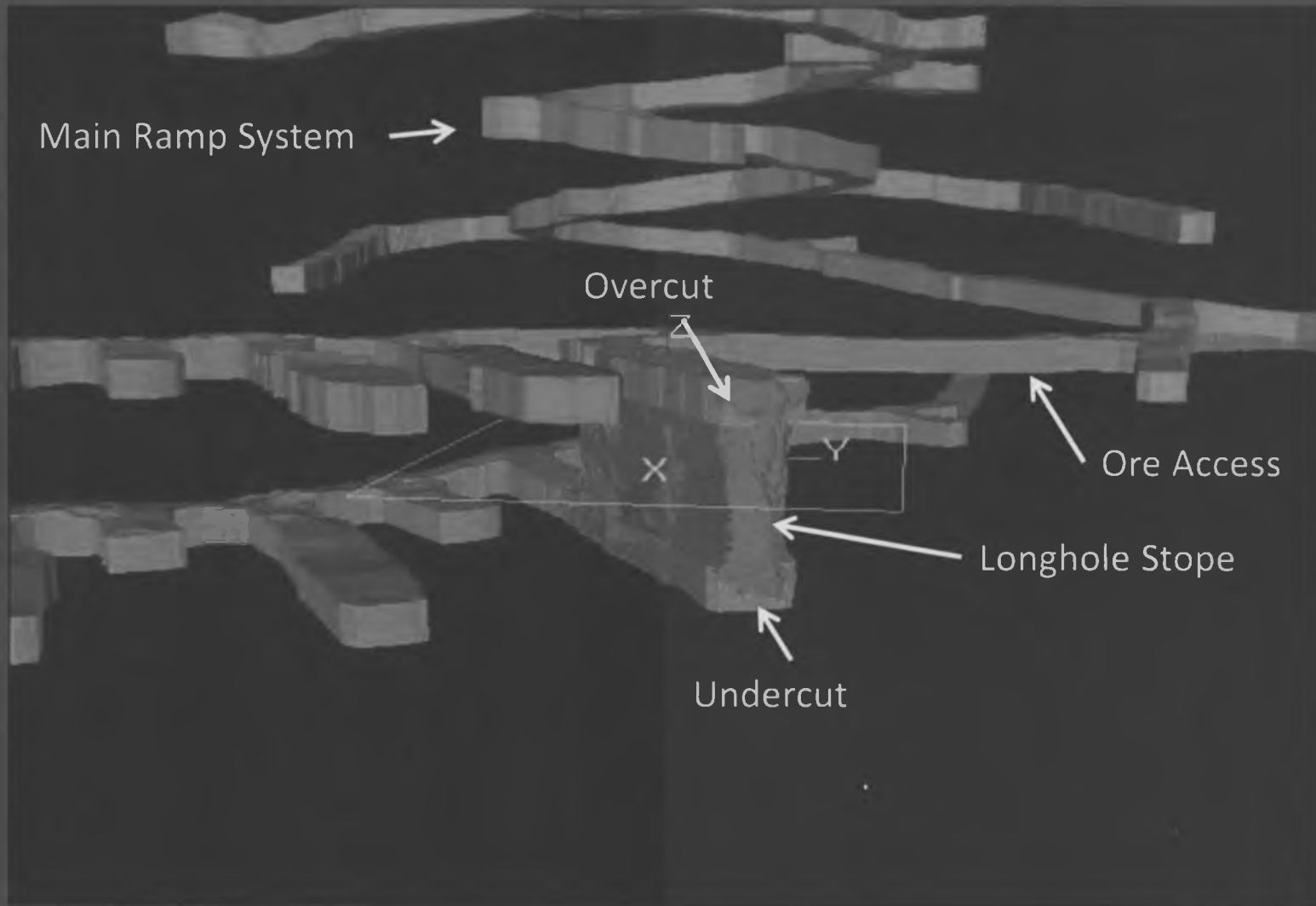


Underground Cut and Fill

(Plan View)



Underground Longhole



Basic Underground Mining Cycle

Geology + Engineering Control



Drilling

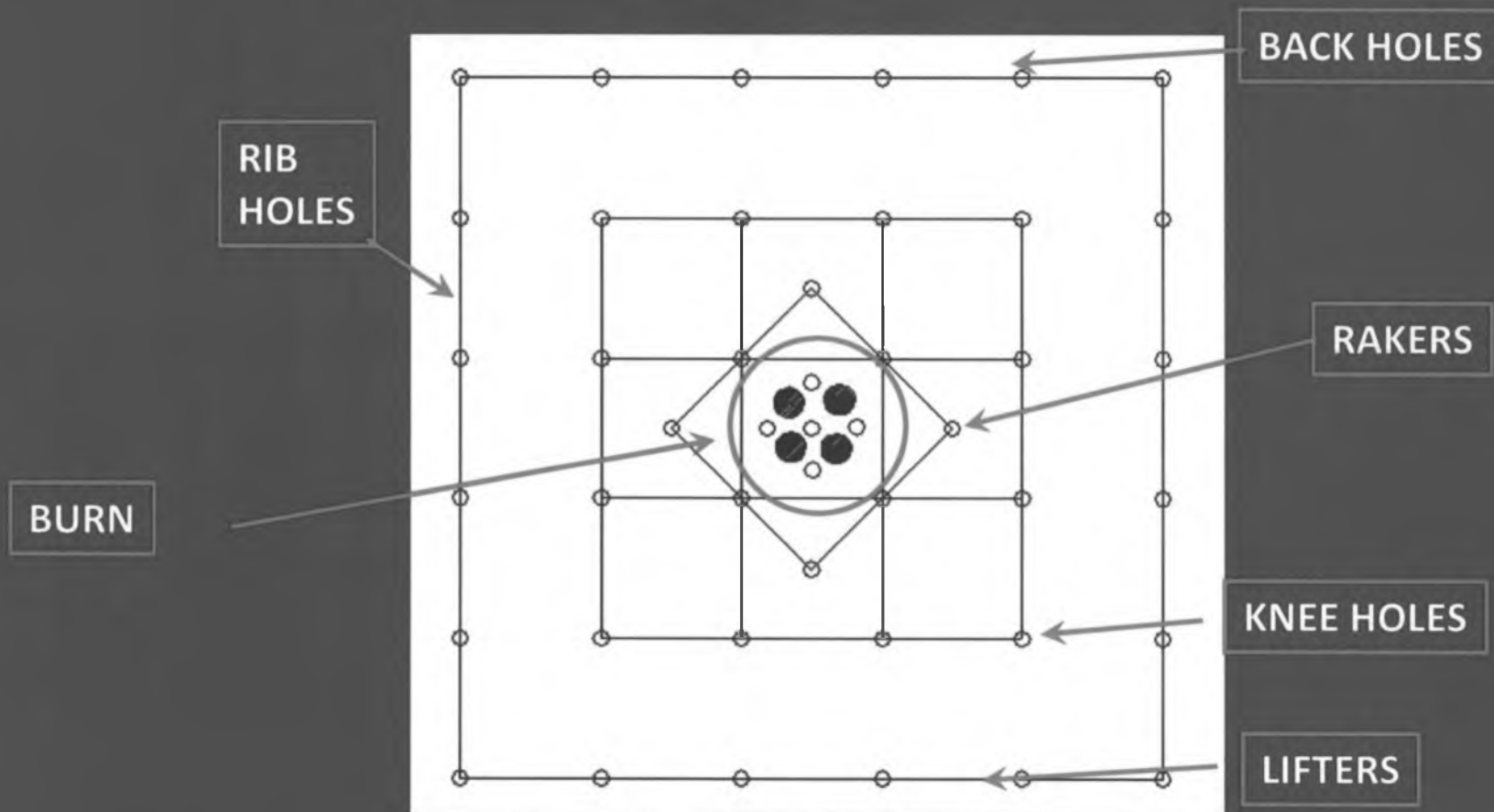


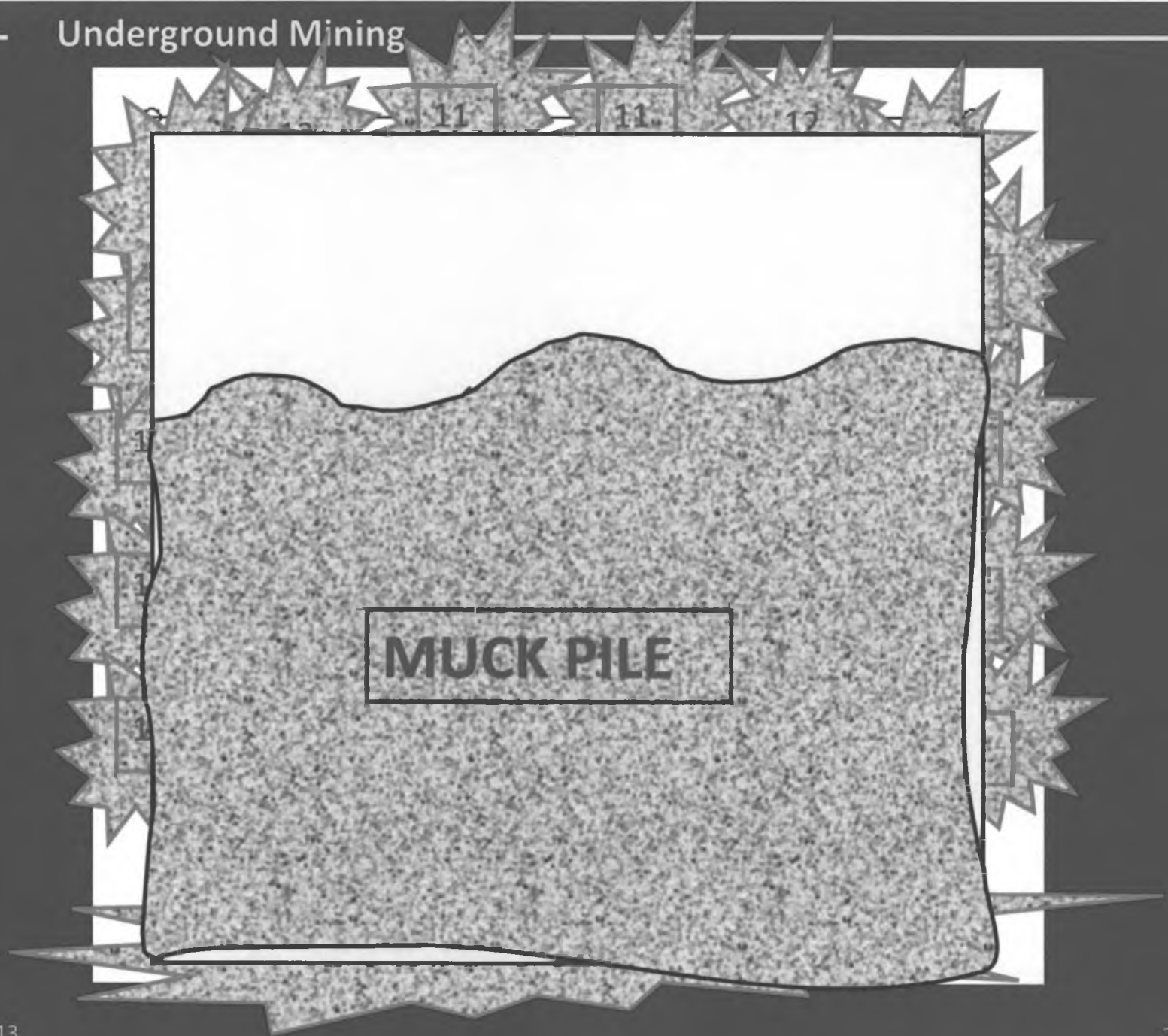
Drilling



1/19/2013

Drill Pattern





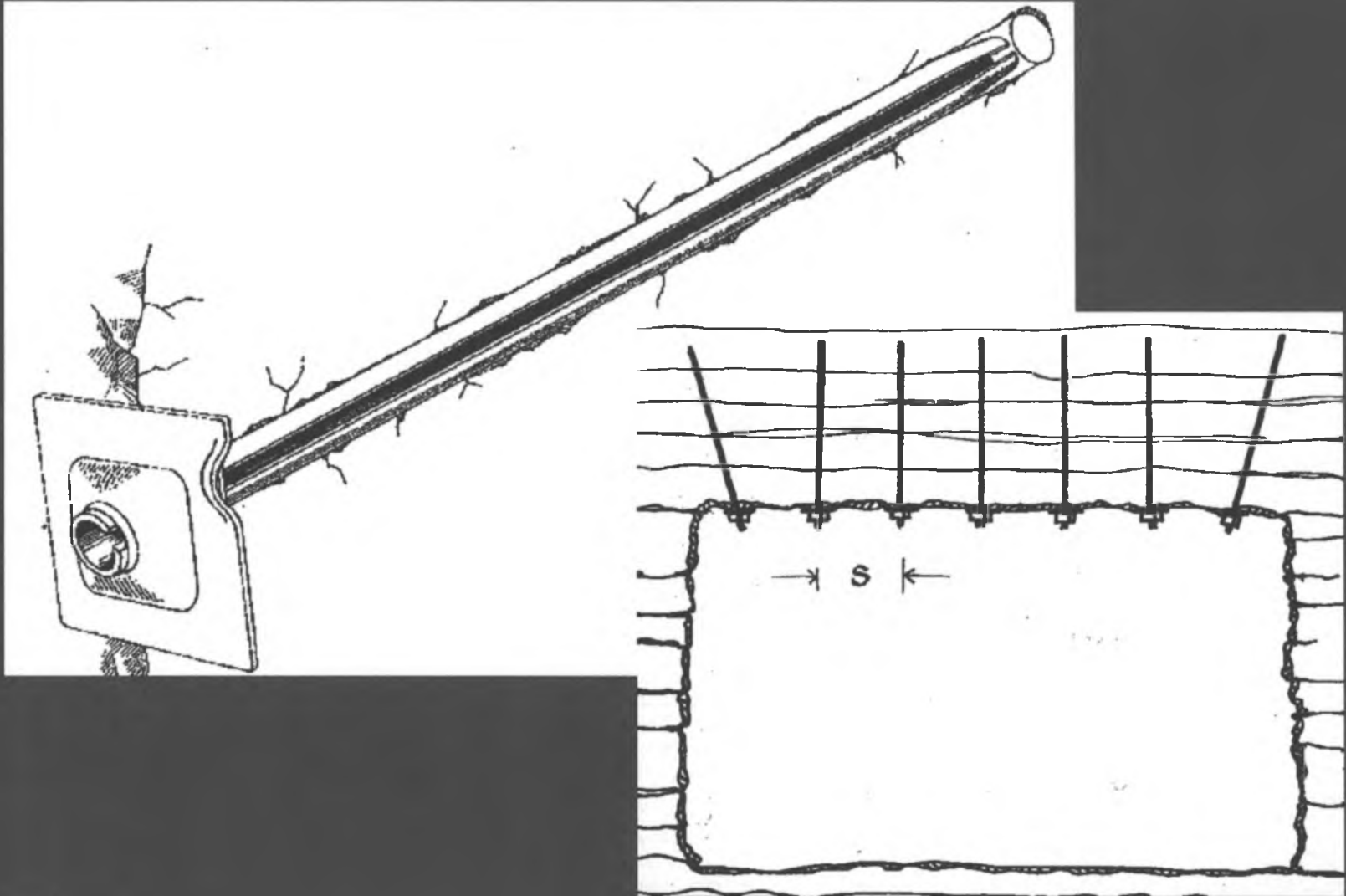
Mucking



Mucking



Bolting



Bolting



Bolting



Ground Control



Ground Control



Ground Control



Why Ground Control?



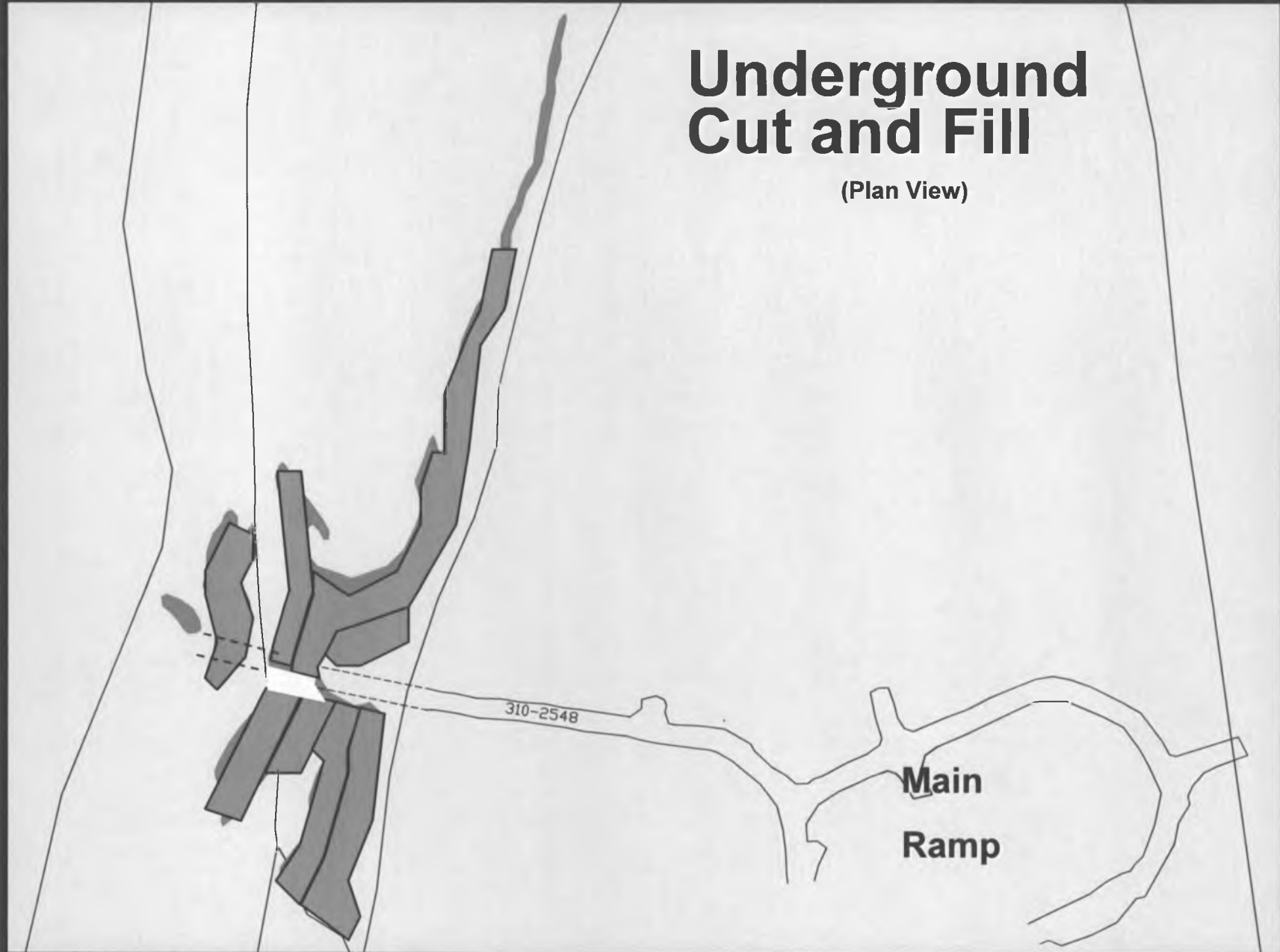
Backfill

- Waste Fill
- Conventional Fill
- Paste Fill

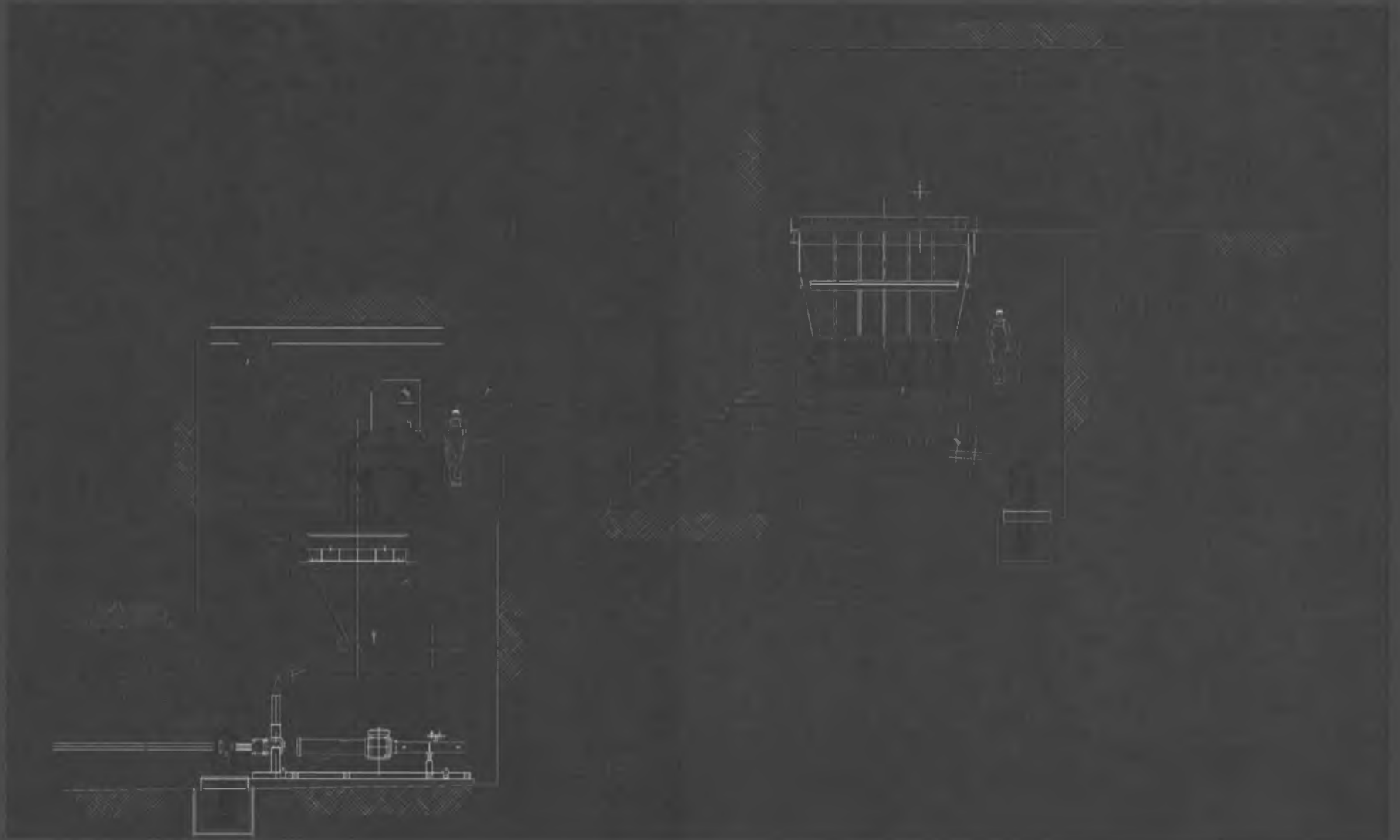


Underground Cut and Fill

(Plan View)



Paste Fill Plant



Underground Mining

- Alaska has a history of underground mining.
- Mining method determined by deposit type.
- Modern mining methods require a highly skilled workforce.



Thank You!

