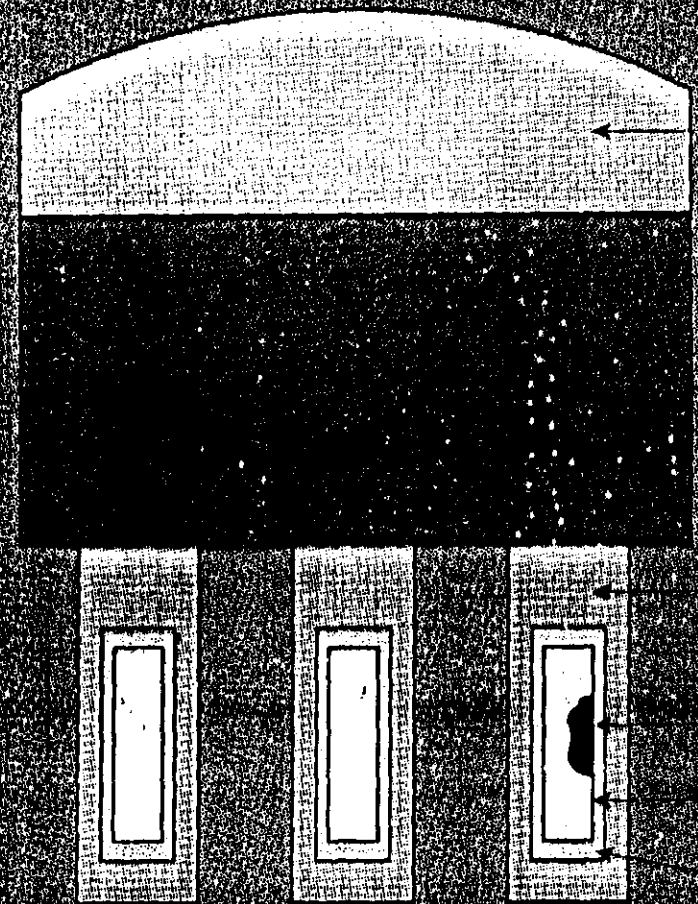


# COPPER CORROSION

SWEDISH BRASS  
CANNON



# TYPICAL DISPOSAL ROOM



PLUTONIC ROCK

BUFFER

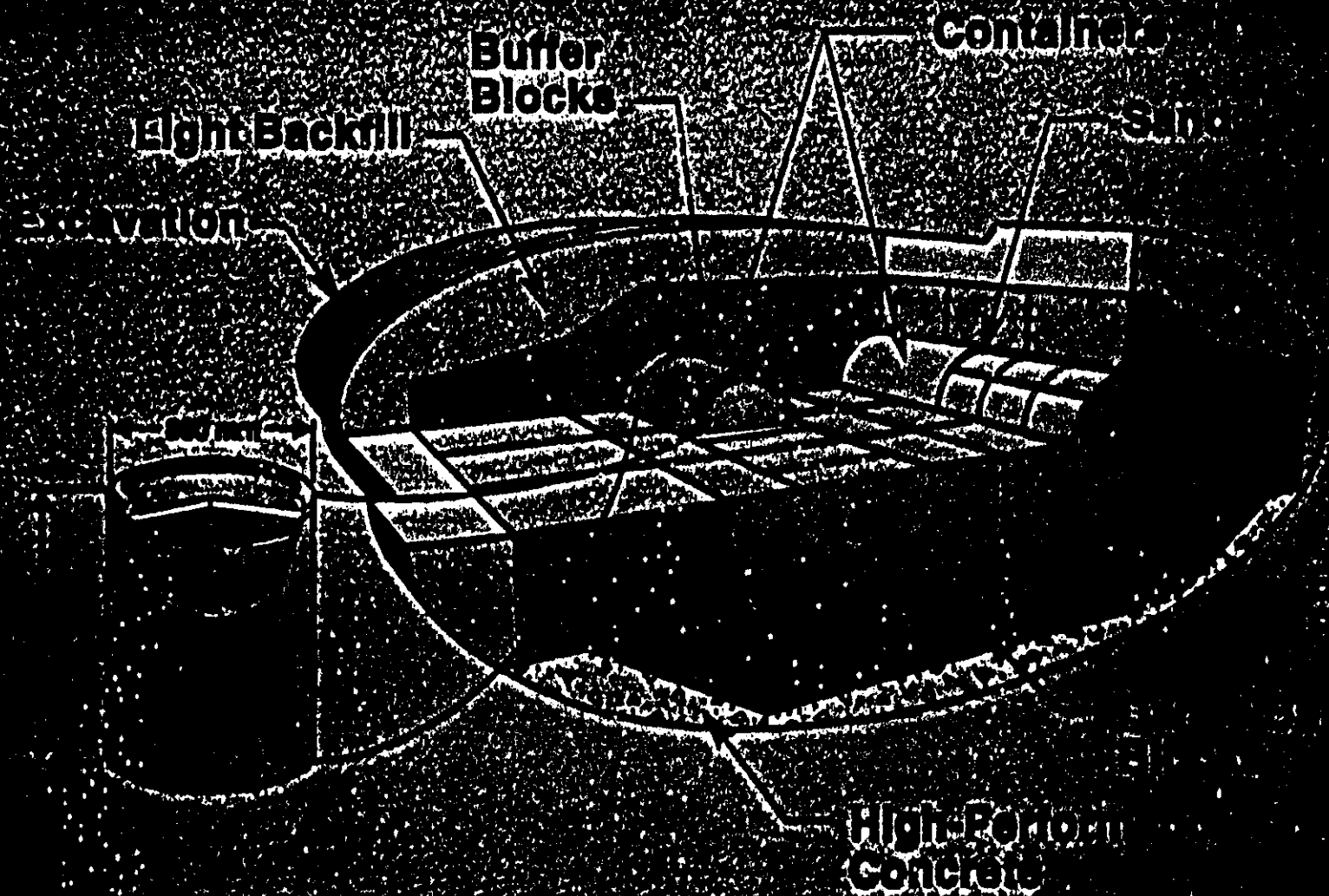
BACKFILL

COMPACTED  
BUFFER

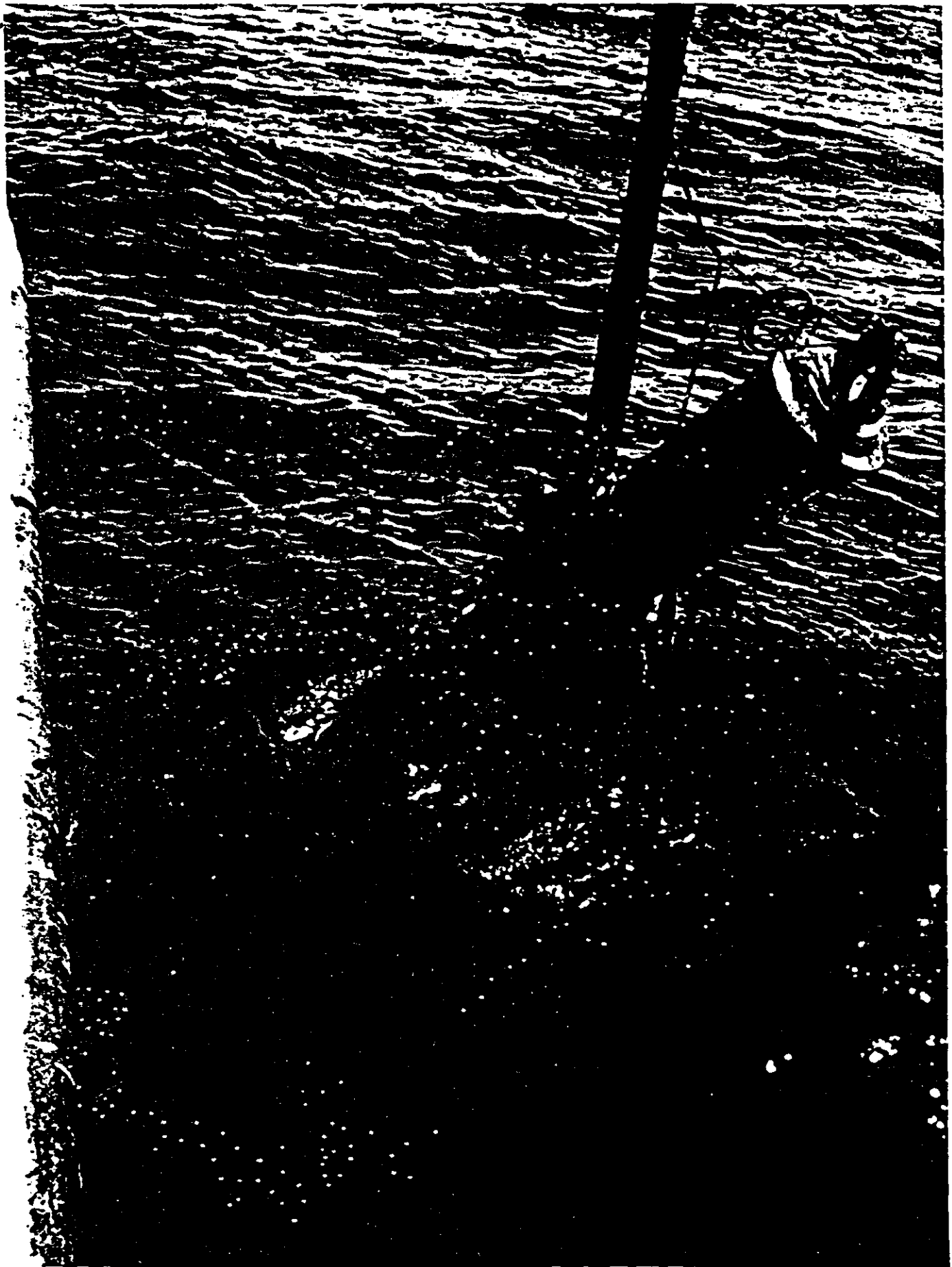
WASTE

CONTAINER

SAND



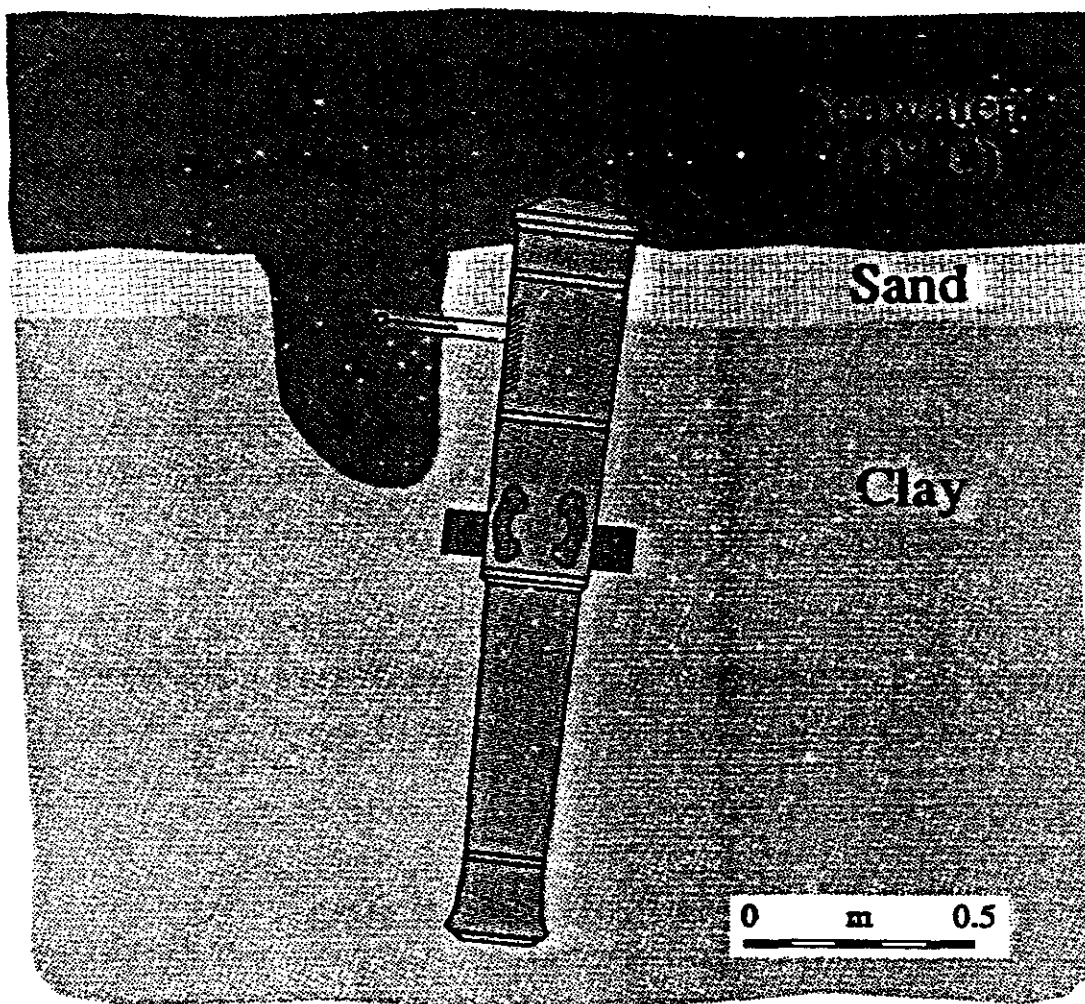
Room Showing the In-Room Employment  
of Disposal Containers





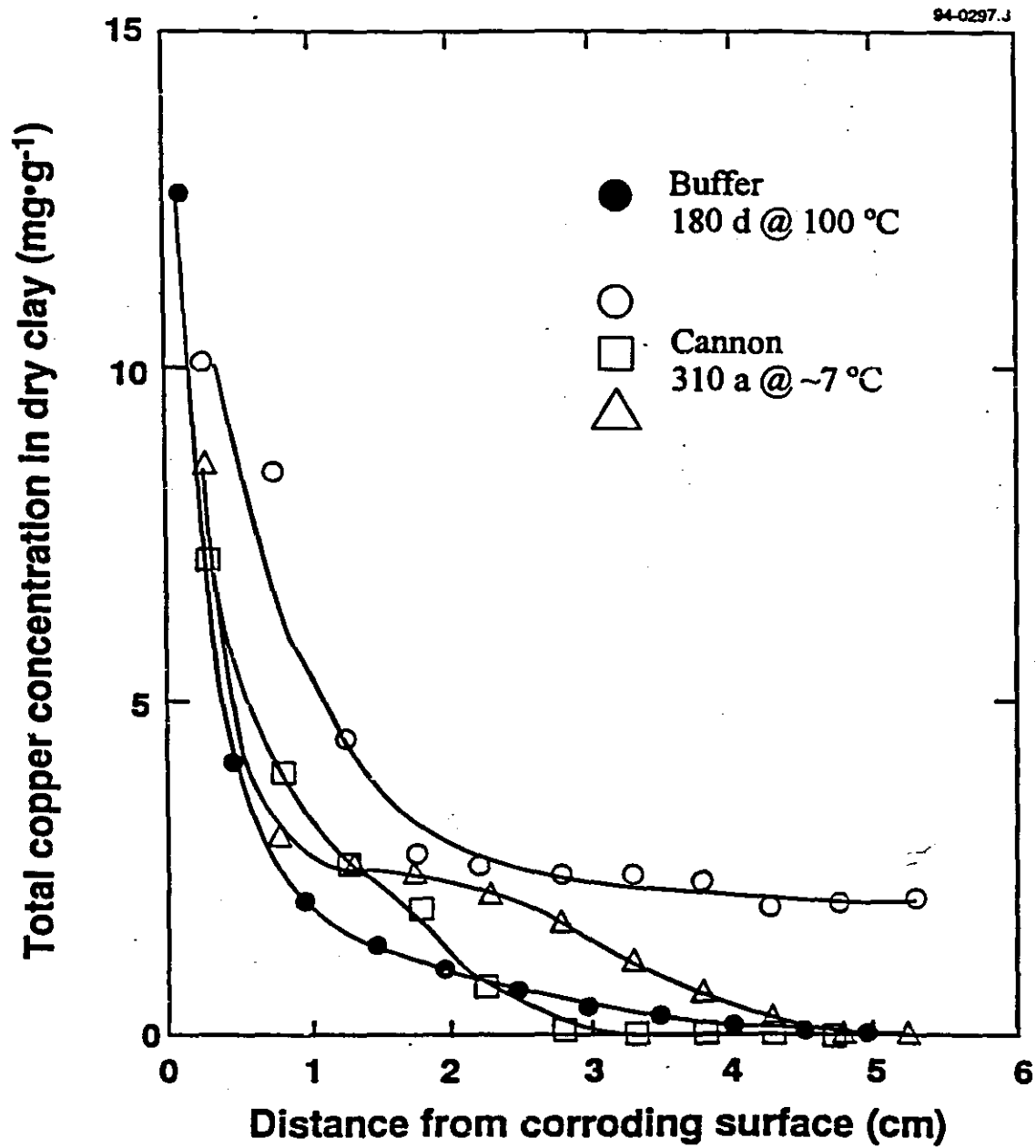


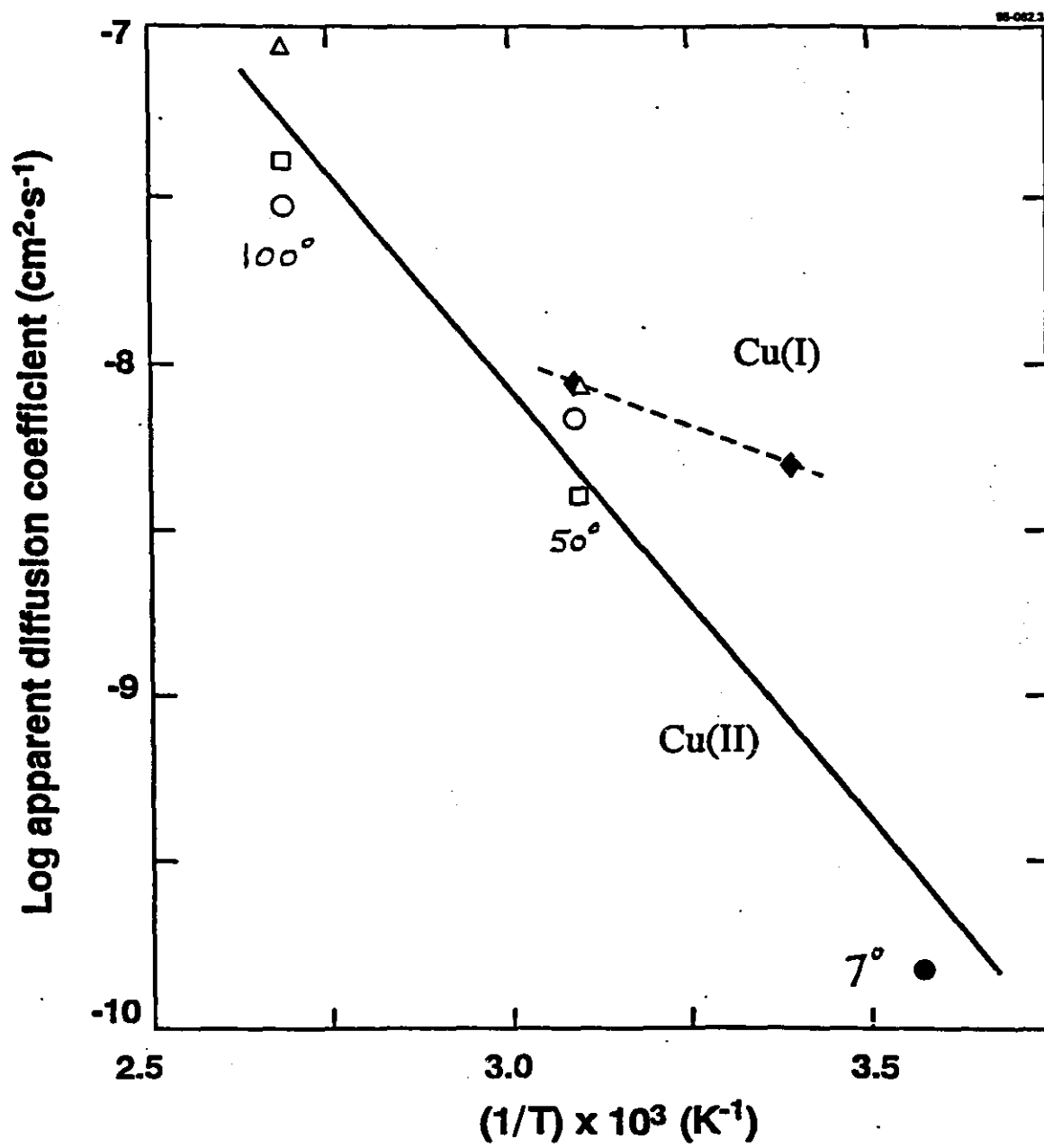
## Swedish Bronze Cannon (1676)



Measured on cannon surface  
Cu-corrosion model predicts

Corrosion rate  
0.015  $\mu\text{m}/\text{year}$   
0.080  $\mu\text{m}/\text{year}$





# CONCLUSIONS

## COPPER CANNON

-  Copper corrosion is very slow and uniform in clay+sand matrix saturated with saline water.
-  Copper corrosion rate obtained in laboratory compares well with values from >300 year natural experiment. Laboratory rate appears conservative.
-  Diffusion is controlling process for copper transport in clay+sand matrix: analog data support laboratory data.