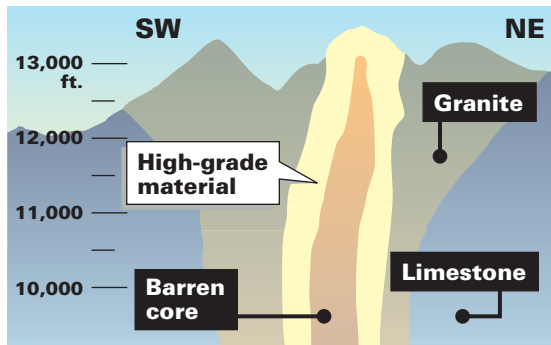
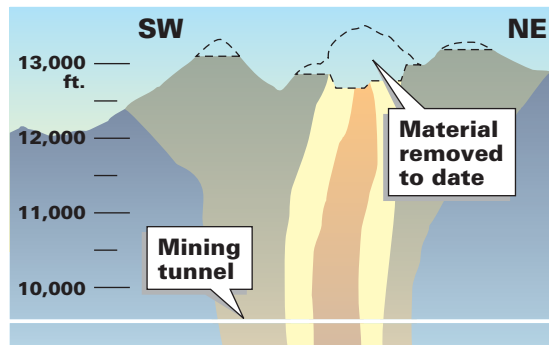


A ROCK AND A HARD PLACE

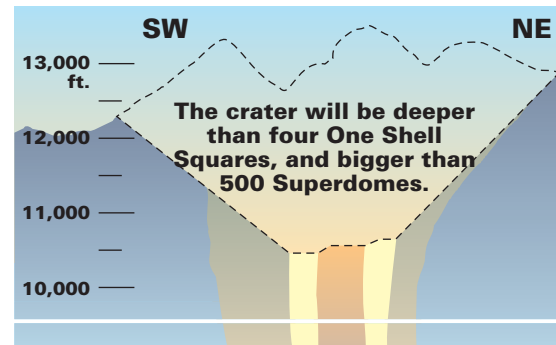
1988:
 ▶ A cross section of the Grasberg mine area on Jayawijaya Mountain as it appeared in 1988.
 ▶ That's when Freeport discovered a huge deposit of ore containing copper, gold and silver.



TODAY:
 ▶ Freeport blasts and removes 120,000 metric tons of ore from the mountaintop each day.
 ▶ So far, it has shaved 400 feet from the top of the mountain.



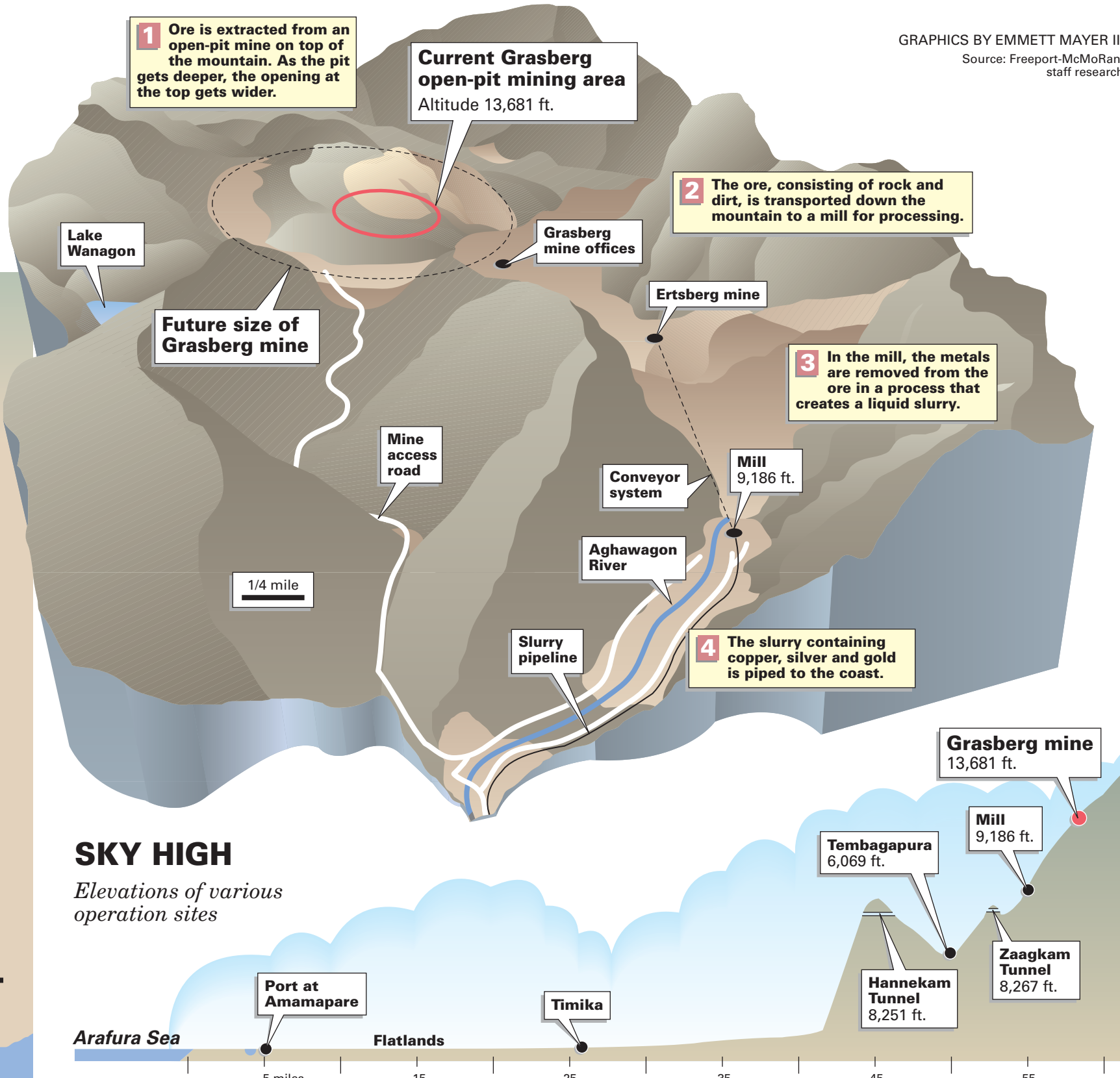
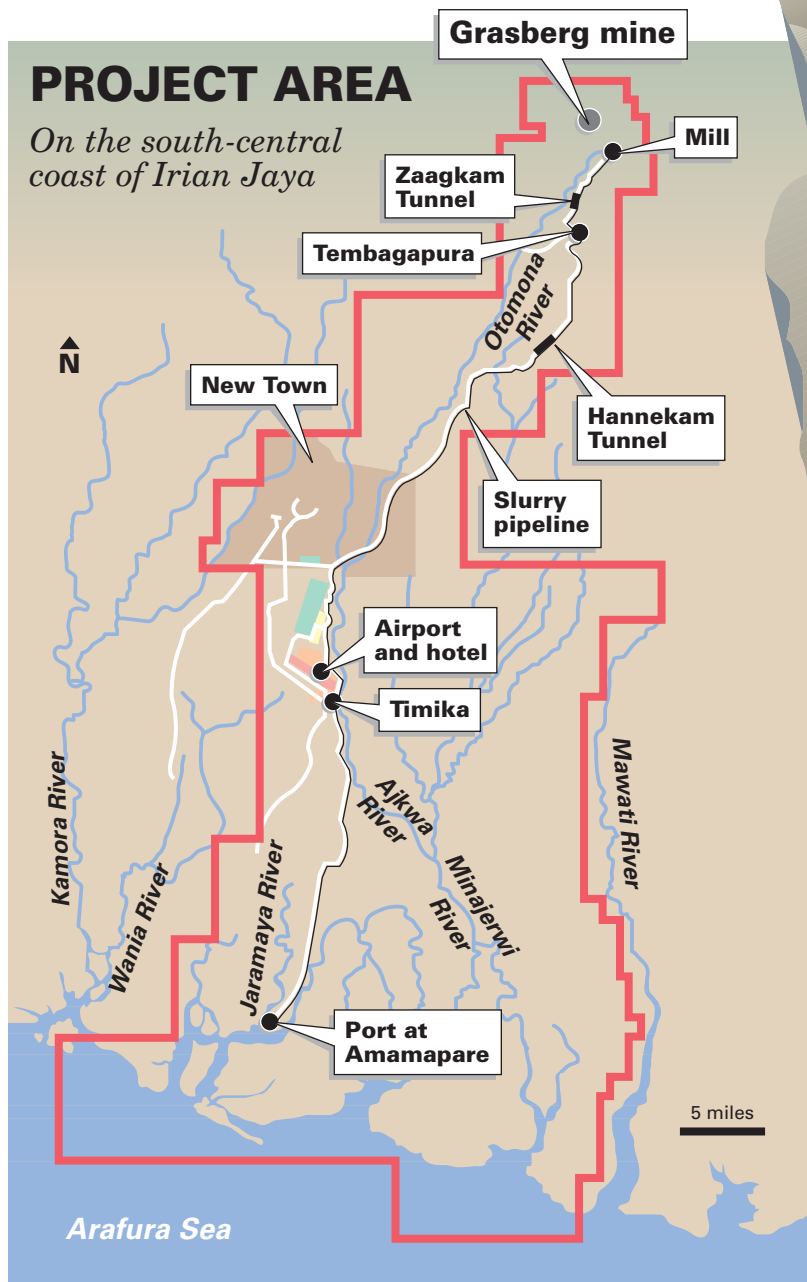
IN 30 YEARS:
 ▶ A 3,500-foot-deep crater will remain where the mountain once stood.
 ▶ Open-pit mining will become too cost-prohibitive at this point.
 ▶ Mining will continue in tunnels.



BRINGING DOWN THE MOUNTAIN

Freeport-McMoRan has to conquer distance, altitude and environment to wrest copper, gold and silver from the ground in one of the remotest spots on the planet.

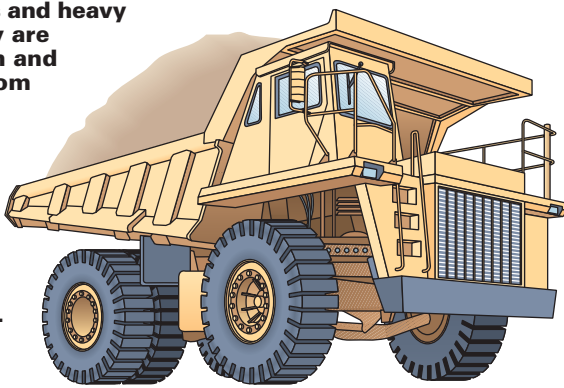
GRAPHICS BY EMMETT MAYER III
 Source: Freeport-McMoRan; staff research



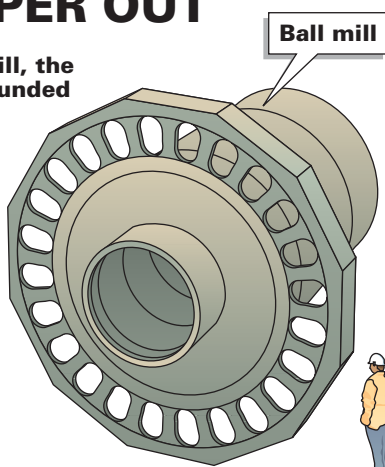
SKY HIGH
 Elevations of various operation sites

GETTING THE GOLD, SILVER AND COPPER OUT

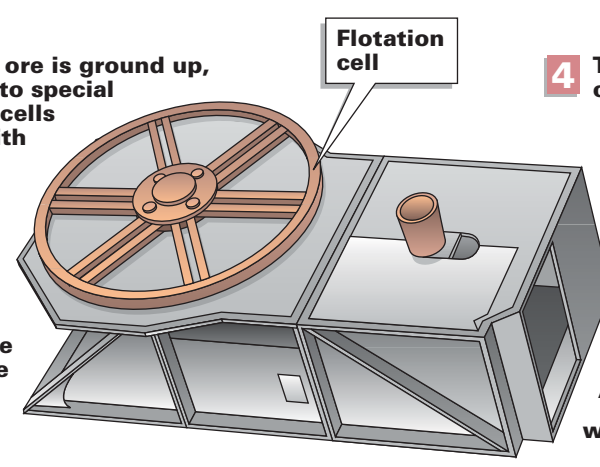
1 Dynamite, plastic explosives and heavy machinery are used to loosen and load up ore from the mine pit.
 The ore is then hauled in industrial-sized dump trucks to a conveyor that carries it to the mill below.



2 At the mill, the ore is pounded into fine particles.
 A giant ball mill crusher spins as rock is fed into it.
 Steel balls inside the crusher reduce the rock to dirt.



3 Once the ore is ground up, it is sent to special flotation cells and mixed with alcohol and water.
 Through a chemical reaction, the gold, silver and copper bubble to the surface and are skimmed off.

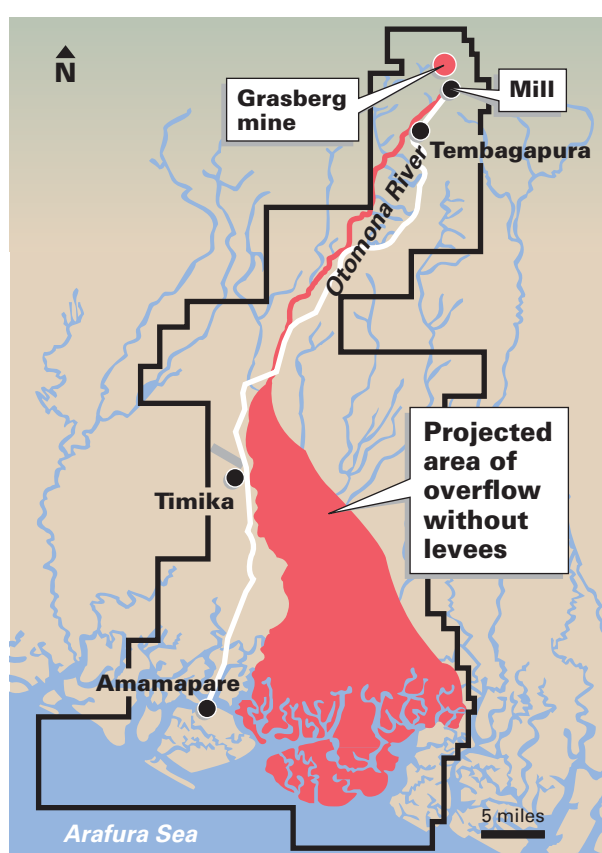


4 The metal concentrate consists of a mud-like slurry.
 Water is added and the slurry is sent via pipeline to the coast and loaded onto a ship for transport to a metal smelter.
5 What's left as a waste product is 97 percent of the original ore. It's mixed with water and dumped into the Ajkwa River system. waste is known as tailings.

THE TROUBLE WITH TAILINGS

WHAT ARE TAILINGS?

▶ Tailings are like fine dirt. They contain trace amounts of metals, but essentially are unchanged from when they were underground. The waste is dumped into the Ajkwa River system, and there the problems begin.

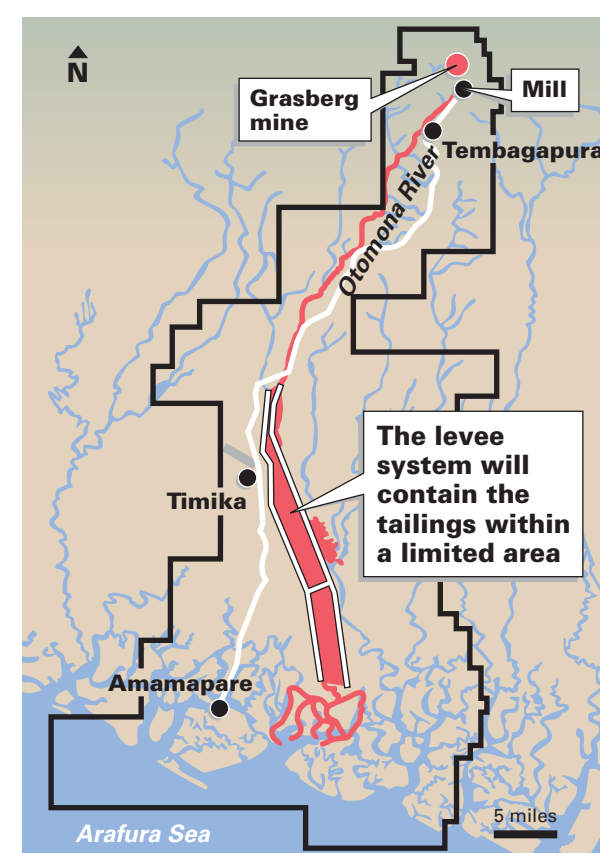


WHAT WOULD HAPPEN IF FREEPORT DID NOTHING

▶ The amount of tailings dumped into the river system each day — 116,000 metric tons currently — is many times more sediment than nature intended the river to handle. Freeport estimates that the Ajkwa River, left unchecked, would clog with tailings, spread out and eventually affect 230 square miles of land.



Tailings can cause flooding that kills trees



WHAT FREEPORT IS DOING TO CONTAIN THE DAMAGE

▶ Freeport is building a \$25 million levee system to contain the Ajkwa River within a narrow corridor. If successful, the levees will limit the affected area to about 50 square miles.

WHAT COULD GO WRONG

▶ Freeport wants to increase the amount of tailings dumped into the river each day to 184,000 metric tons. Some Freeport environmental officials worry about the ability of the river to handle an unlimited amount of sediment.