Name_____

I. Description

Your just inherited a mining company, but the company is bankrupt. It is your job make the company profitable. Unfortunately all the machinery is broken as well. Here are the 3 types of drills to rent at the local mining store:

Drill Type	Cost
Jackhammer (round toothpick)	$2,000
Industrial strength Drill (pointed toothpick)	$5,000
Diamond tipped Super Drill (paperclip)	$12,000

*****You will be charged double for broken rentals*****

The following plots are available for sale to mine.

Land type	Cost
“I see one” field (pepperidge farm chip)	$3,000
“ABC” (already been checked) field (great value chip)	$5,000
“What are these big black things in my” field (Chips Ahoy)	$6,000
“Thar be chips” field (Chips ahoy chunky)	$10,000

Once you have a drill and a massed mine field you are ready to mine. **Supplies will cost $2,000/min** the **ore (chocolate chips) is worth $10,000/gram for pure chip** and **$5,000 for impure chip** (cookie attached). To start mining trace your cookies outline on the grid provided on the mining data sheet. Count each square (partial squares count as 1) for the size of your cookie. When your mining is complete, push as much of the remaining rock back in the circle with your mining tool **DO NOT USE YOUR HANDS**. **For every empty square pay $1,000 in reclamation fines**.

Mining cost sheet		
Item	**Description**	**Cost**
Name of cookie		$ -
Size of cookie	squares	
Mass of cookie	grams	
Mass of pure chips	grams × 10,000	$
Mass of impure chips	grams × 5,000	$
Drill type	× 2 if broken	$ -
Time spent drilling	min × 2,000	$ -
Reclamation costs	empty square × 1,000	$ -
	Total:	

II. Questions

1. Were the minerals evenly distributed throughout the cookie mines? Is this a good model for a real mine?

2. Did you leave any chips behind in the cookie? Why or why not? Is this a good model for a real mine?

3. Were you able to restore most of the land? Why or why not?

4. Do you think the mining process is faster when you know in advance that the land must be restored? Explain

5. Do you think that legislation requiring the restoration of the land makes mining more expensive?

6. The average copper ore mined in 1900 was 5% copper by weight. Today the average copper ore is 0.5% copper by weight. What factors could account for this difference?

7. What changes in your mining technique would have resulted in more profit?