



This Green Life

A Journal of Sorts



PURE GOLD

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My great-aunt came to America as a child from South Africa, where her family had a jewelry business. One of the relics from her early days was a gold pin featuring a pickaxe and shovel -- symbols of South Africa's prosperity from gold. These tools and a pan for finding nuggets in a stream constituted my earliest ideas of how gold mining was done.

Though I later came to realize that contemporary gold mining was a large-scale, industrial operation, not a romantic affair at all, I never knew much about it -- or cared. I lived in New York and gold mining happened elsewhere. I never thought to draw the line from the mine in the ground to the ring on my hand.



Silly me. As I recently learned, gold mining is one of the world's most destructive industries -- environmentally, socially and economically. It contaminates water and land, endangers the health of humans and animals, disrupts the way of life of indigenous peoples and is associated with human rights abuses. It also destroys beautiful landscapes in remote regions. Consciously or not, when I bought gold jewelry, I was indirectly supporting all of the above.

Gold has been valuable through the ages, and not just for its beauty. It doesn't oxidize (therefore, neither tarnishes nor rusts), does not react with other elements and is virtually indestructible, which makes it perfect for jewelry and coin. Its malleability enables it to be beaten into thin sheets with simple tools when cold. Hence, even ancient peoples could hammer out gold leaf. In modern times, its excellent conductivity has given it a new use in computers and other electrical equipment.

The method most commonly used to mine gold today is open pit mining. Constructing the pit involves blasting away the top layer of earth and rock -- and all the trees and vegetation with it -- and dumping the "overburden," as the waste is called, nearby. The resulting mound can reach 100 meters, almost as tall as a 30-story building. After each layer of ore is uncovered and removed, the pit is dug a little deeper. Over time, the pit can turn into an immense crater, scarring the landscape. The largest -- Bingham Canyon in Utah -- is two and a half miles wide and a mile deep.

To extract the gold from the ore, a process called cyanide leaching is generally used, which involves treating crushed ore with a cyanide solution to separate the gold from the rock. The gold is then separated from the cyanide in another process and the cyanide is recycled for use in the next go-round.

The way it's supposed to work, the cyanide is contained and never comes in contact with the environment, but reality is different. Pads used to protect the ground routinely tear. Dams holding back the tailings, or contaminated ore remains, fail. When these things happen, cyanide,



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Slated for destruction. A gold mine planned for a remote region of Romania would destroy this village and strand the hilltop church amidst a lake of toxic waste. Thanks to a grassroots campaign organized by Stephanie Danielle Roth, an activist and a winner of this year's Goldman Environmental Prize, the World Bank has withdrawn its support and the EU has warned Romania that it will be monitoring the project. Nevertheless, as of this time, plans for the mine are still moving forward. (Photo: Goldman Environmental Prize)

as well as toxic heavy metals, seep into the ground and enter waterways, which can be a disaster.

There have been many such disasters over the years. For instance, when a cyanide storage tank at Baia Mare in Romania leaked in 2000, cyanide and heavy metals were released into the Tisza River and eventually the Danube, killing thousands of fish in three countries.

Even after mines close, problems remain. An extensive cleanup process should take place, but rarely are cleanup efforts adequate. In our country, mining companies often avoid cleanup costs by going bankrupt. Taxpayers are then left holding the bill, which currently totals some \$12 billion nationwide, according to Jared Diamond in his book, *Collapse*.

Around the world, indigenous peoples are disproportionately affected by gold mining. About half of the gold produced between 1995 and 2015 will most likely come from their lands. If they lack legal title, as is often the case, the land may be taken with little or no compensation. In some countries, they have been forcibly evicted by the police or military.

In 2004, in an effort to change the way gold mining is conducted, Earthworks and Oxfam joined forces to launch a campaign called "No Dirty Gold." The goal is to get the industry to avoid mining in protected areas and places where acid mine drainage would result, stop dumping in natural bodies of water, fully fund mine cleanup, provide safe working conditions, respect indigenous peoples' rights and human rights generally, and ultimately participate in some kind of independent verification system to confirm that mining companies' practices are sustainable. To support these goals, you can do the following:

- 1) Sign the [No Dirty Gold pledge](#)
- 2) When you go shopping for jewelry ask the salesperson where the gold comes from. The idea is to get retailers to become aware of the problem and pressure their suppliers.
- 3) Have jewelry you no longer wear refashioned into something new and tell your jeweler why.
- 4) Buy jewelry made from recycled gold. [Greenkarat.com](#) is an online source.
- 5) Buy vintage gold items.
- 6) If any of your money is invested with gold mining companies, see if you can exert your shareholder power to lobby for change.

The one thing you don't want to do is be quiet. To have some impact, you have to be a squeaky wheel.

—Sheryl Eisenberg

Sheryl Eisenberg is a web developer and writer. With her firm, Mixit Productions (<http://www.mixitproductions.com>), she brought NRDC online in 1996, designed NRDC's first websites, and continues to develop special web features for NRDC. She created and, for several years, wrote the Union of Concerned Scientists' green living column, *Greentips*, and has designed and contributed content to many non-profit sites.

ONLINE RESOURCES

EARTHWORKS & OXFAM: No Dirty Gold - <http://www.nodirtygold.org>
CO-OP AMERICA: Gold Loses Some Glitter - <http://www.coopamerica.org/pubs/realmoney/articles/gold.cfm>
SEATTLE POST: Mining Has Left the West Deeply Scarred - http://seattlepi.nwsource.com/specials/mining/26996_damage12.shtml
CENTERS FOR DISEASE CONTROL: Facts about Cyanide - <http://www.bt.cdc.gov/agent/cyanide/basics/facts.asp>
BBC: Romania's Cyanide Spill - <http://news.bbc.co.uk/1/hi/world/europe/1146979.stm>
GRIST: Mine Sweeper - <http://www.grist.org/news/maindish/2005/04/21/nijhuis-roth/>
UC/DAVIS: Ancient Silver and Gold - <http://www.geology.ucdavis.edu/~cowen/~GEL115/115CH6.html>
GREEN CARAT: greenKarat.com - <http://greenkarat.com/default.asp>



Lunar crater? No, a huge open pit gold mine in Nevada owned by Barrick Goldstrike. (Photo: Earthworks)

Dangerous stuff. Cyanide makes a great suicide pill because it takes so little to kill you. An amount the size of a grain of rice is sufficient. It was in fact the poison of choice for several famous suicides, including the Jonestown mass suicide. Cyanide also makes for an effective chemical weapon and was the lethal agent in Zyklon B, the gas used in the Nazi death chambers.



Talk about long-lasting. It is thought that virtually all of the gold ever mined is still in circulation -- including gold from earliest times. Who knows, the gold in your ring may have once adorned a Scythian or ancient Egyptian.

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