

- [Home](#)
- ▼ [About Us](#)
  - [Submission Guidelines](#)
  - [Editorial Independence](#)
  - [Donor Transparency](#)
  - [Ethics](#)
  - [Who Funds Us?](#)
- [Contact Us](#)
- [Newsletter Sign Up](#)

Embed

[View on Twitter](#)

## What the Heck Is Acid Drainage, and Why Is It Such a Big Deal?

[Jimmy Thomson \(/user/jimmy-thomson\)](#) | December 8, 2017



- [Home](#)
- ▼ [About Us](#)
  - [Submission Guidelines](#)
  - [Editorial Independence](#)
  - [Donor Transparency](#)
  - [Ethics](#)
  - [Who Funds Us?](#)
- [Contact Us](#)
- [Newsletter Sign Up](#)

what-heck-acid-  
rock-drainage-  
and-why-it-such-  
big-  
deal%0D%0A%0D  
%0AWhat the  
Heck Is Acid  
Drainage, and  
Why Is It Such a  
Big Deal?)

## What is that yellow goop in the water?

Acid rock drainage—metal leaching, or just “acid drainage”, is usually associated with mining but also happens during large building projects, like the Site C dam — basically any time a large amount of rock has been crushed, blasted, or otherwise made to have a lot of new surface area open to the air. It’s a result of sulphur-containing compounds in the rock reacting with air and water, causing the formation of sulphuric acid.

It gets worse: That acid can then leach heavy metals out of the rock, which can get into nearby watercourses. This process can go on for hundreds or even thousands of years after the mine is shut down.

**So, sulphuric acid and heavy metals in the water.**

**Got it. Why is that bad?**

- [Home](#)
- ▼ [About Us](#)
  - [Submission Guidelines](#)
  - [Editorial Independence](#)
  - [Donor Transparency](#)
  - [Ethics](#)
  - [Who Funds Us?](#)
- [Contact Us](#)
- [Newsletter Sign Up](#)

Fine, geez. That's what's known as Yellow boy; it's when iron is leached out of rock by strong acids. When the pH comes back up, the iron comes back out of the solution as that yellow goop. Yellow boy can coat stream beds, blocking plant photosynthesis and suffocating wildlife.

## Thank you.

You're welcome. Let's move on.

## Who knew piles of rock could be so dangerous?

The mining industry does. It's a major concern for them; [a publication](#) (<http://www.cmic-ccim.org/wp-content/uploads/2013/07/HatchScopingReport.pdf>) by the Canadian Mining Innovation Council called it "the largest environmental risk facing the mining industry." There are even entire annual conferences on the subject.

A Canadian government program called Mine Environmental Neutral Drainage (MEND) has been working on reducing the risk and liability from acid rock drainage for nearly three decades. That liability was estimated in 1994 to be between \$2 and \$5 billion.

One example of an ongoing problem with acid rock drainage is the Tulsequah Chief mine in northwestern B.C. That mine shut down 60 years ago, but [continues to pollute](#) (<http://www.desmog.ca/2017/08/04/new-b-c-government-inherits-toxic-legacy-tulsequah-chief-buyer-backs-away-abandoned-leaky-mine-0>) the Tulsequah River, a tributary to the salmon-bearing Taku River. Two companies have gone bankrupt while looking to restart that mine, and the lack of cleanup continues to be a sore spot for Alaskans living downstream.

- [Home](#)
- ▼ [About Us](#)
  - [Submission Guidelines](#)
  - [Editorial Independence](#)
  - [Donor Transparency](#)
  - [Ethics](#)
  - [Who Funds Us?](#)
- [Contact Us](#)
- [Newsletter Sign Up](#)

## What the Heck Is Acid Drainage, and Why Is It Such a Big Deal?

What is that yellow goop in the water?

desmog.ca

2

23

14

## What is the mining industry doing about it?

There are a number of approaches to this problem, some more technologically advanced than others. The simplest method is to just dump the tailings in water — remember, the problem comes from air reacting with the sulphides — in order to prevent contact between the air and the rock. That's not a perfect solution, as the Mount Polley disaster showed, because if the dam holding that tailings pond fails, the problem is essentially spread throughout an entire river system.

Other methods follow a similar tack, covering the rock in various materials to keep it from reacting with the air.

There are also more complicated methods of preventing acid rock drainage, involving adding chemicals, bacteria, or bacteria-like organisms to the rock to remove the sulphates before they can react with the air and produce the acid. Mines can also add buffers, chemicals that offset the acid.

**DESMOGCA**

CLEARING THE PR POLLUTION

- [Home](#)
- ▼ [About Us](#)
  - [Submission Guidelines](#)
  - [Editorial Independence](#)
  - [Donor Transparency](#)
  - [Ethics](#)
  - [Who Funds Us?](#)
- [Contact Us](#)
- [Newsletter Sign Up](#)

Mines crush a lot of rock. Often, because of where valuable metals are found, those rocks contain sulphides, which react with air to make acid. That acid can then leach metals out of the rock and contaminate water, making it unsafe for consumption. It's responsible for billions of dollars in environmental liabilities in Canada alone. It's a whole thing.

Companies and governments around the world are working on solving the problem, but it's a tough one. It can be prevented to some degree, and it can be remediated. But it takes time and money, and the problem can go on for generations. Countries like the UK are still dealing with Industrial Revolution-era acid rock drainage problems.



Share

65



Tweet



Reddit

1



Share

0



Share

(mailto:?subject=Check out this story from DeSmog Canada&body=https://www.desmog.ca/2017/12/08/what-heck-acid-rock-drainage-and-why-it-such-big-deal%0D%0A%0D%0AWhat the Heck Is Acid Drainage, and Why Is It Such a Big Deal?)