

## Climatic Impacts of Taseko's proposed Yellowhead Mine.

### Local impacts:

Loss of green cover, over a substantial area means

-considerably increased local heating of the area due to the increased absorption of solar energy. Bare earth and rock absorb much more solar energy than the forest plant cover.

-the formation of new convection currents. The increased temperatures, due to the added solar energy, will dry the surrounding forest and increase the risk of wildfires. This drying will have multiple side effects, particularly on the hydrology and on wildlife.

-these convection currents will transport dust particles aloft from the ongoing excavation at the mine site. The particulate matter will remain in the atmosphere for a time where it will create breathing difficulties. Eventually, it will settle in the surrounding areas. In our previous comments, we described how particulate matter containing small amounts of Uranium and Radium would decay into Radon 222 which would impact people in the settled areas around the periphery of the mine. The production of these dust particles would be continuous and ongoing, for the life of the mine. Since traces of Radium have a half life of approximately one thousand years, its decay into Radon, with a half life of less than four days would continue well beyond the life of the mine. Clearwater already has some of the highest Radon levels in the country, the source of which has never been identified. However, its origin may have come from the soils that had been disturbed during the Rexpar uranium exploration. Does Clearwater need increased levels of Radon? We think not.

### Global impacts:

The loss of the green cover will

-Eliminate the potential for any carbon sequestration over the area directly affected and will probably impair the ability of the surviving forest to sequester as much carbon as it did before mining.

- Depending on how the green cover is disposed of, it will release its stored carbon quickly, if it is burned, or more slowly if it is piled and allowed to rot.

-Since the bare earth and rock cover absorbs much more solar energy, it will allow the ground in the areas impacted by the mine to heat up. This energy will be re-radiated in the infrared and the near-infrared bands which is precisely where the greenhouse gasses are active in reflecting that energy back to Earth. This phenomenon is referred to as "radiative forcing" and it is similar to what happens in urban settings which are frequently described as "heat islands".

The heat island effect is intimately connected with land degradation and desertification which are increasing at alarming rates worldwide. These are recognized either as positive climate feed-backs or as direct, human caused, positive climate impacts. The climate impact of this mine would certainly belong to the latter category. As such, this negative climate impact is entirely avoidable. **The mine must not be approved.**

### **Lifetime greenhouse gas emissions:**

Since Taseko's Yellowhead mine is poised to benefit from \$540 million in tax incentives from Canada's Clean Technology Manufacturing Investment Tax Credit NTW needs to ask exactly what is "clean" about this project. A complete carbon accounting would reveal that this project is anything but clean. Such an accounting would include;

- the direct carbon emissions from preparatory excavations
- carbon emissions from the 24 hour per day, 365 days per year activity over the 25 years of operation.
- the "background" carbon emissions from the actual manufacturing of the equipment used . This would include associated electrical transmission lines.
- emissions from all transportation of equipment and staff to the mine site, over the life of the mine as well as the transportation of the mine product to its destination.

Since public money, in the form of tax incentives, is being used to push this project forward, the Canadian public deserves an answer to the question of exactly what makes this project "clean". Presently, the NTW cannot see this as anything other than the green-washing of a most undesirable project.

### **Additional Information:**

For the interested parties who share the concerns of the NTW or for those who would like to learn more, we include links to several sources that can clarify, or enhance, our comments.

#### ***Vegetation and the Earth's Energy balance***

<https://www.nature.com/articles/s41467-017-02810-8>

#### ***The Earth's energy budget ; The Absorption / Reflection of sunlight;***

<https://ugc.berkeley.edu/background-content/reflection-absorption-sunlight/>

#### ***Radiative forcing explained;***

<https://news.mit.edu/2010/explained-radforce-0309>

<https://atmosphere.copernicus.eu/climate-forcing>

#### ***Radiative forcing due to land use patterns, past and present;***

<https://hal.science/hal-03190520/document>

#### ***The spectral reflectance of common Earth surfaces including an interactive graph;***

[https://gsp.humboldt.edu/olm/Courses/GSP\\_216/lessons/reflectance.html](https://gsp.humboldt.edu/olm/Courses/GSP_216/lessons/reflectance.html)

***The importance of desertification;***

<https://www.carbonbrief.org/explainer-desertification-and-the-role-of-climate-change/>

***More detailed explanation of greenhouse gasses, particularly CO2.***

<https://geoexpo.com/recent-advances-in-climate-change-research-part-viii-how-carbon-dioxide-absorbs-earths-ir-radiation/>

**Note:** Following is a link to an article unrelated to the topic of climate. It was submitted by one of our members following our second letter and we thought it worthy of attention even though we were unable to include it with our second letter.

***The disproportionate impact of radon exposure on children.***

<https://evictradon.org/radon->