

Special Report – Glaciers and Mining Series

**Massive Landslide of Waste Pile Site
at Veladero in Argentina (Barrick Gold)**

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Yellow Oval, according to Geologist Juan Pablo Milana, shows massive landslide at Barrick's Veladero Mine in 2008

Startling images from a newly released [report](#) by the renown geologist/glaciologist Juan Pablo Milana, of the National University of San Juan, reveals that in 2008 Barrick Gold concealed the collapse of a major mining waste pile (at a short distance to a cyanide valley dam) causing a massive landslide the size of 50 football fields which moved nearly ½ a kilometer, at its' Veladero mine in San Juan Argentina. Rumors erupted at the time that the protective membrane holding back contaminated liquids had ruptured, but these were said to be false by the company and by authorities. Had there been personnel working below the pile, the landslide which took out an access road, could have been fatal.

Milana states in his report, shared with CEDHA, *but not previously circulated in the public domain*, that he had approached public authorities before this event, with concerns that this waste pile site needed a hydrological defense system in case of rupture to avoid contamination of the Valle del Cura, Taguas, and La Palca rivers.

The geologist compared 2005, 2007, and 2008 images of the site (all publicly available in Google Earth) and confirmed that at some specific time between the 2007 and 2008 images, a massive landslide occurs of Barrick's highly contaminated waste pile site. The reader can visit an actual landslide image at the following geographical coordinates by entering it as is here in the Google Earth search box. The reader can also slide the time bar in the image to compare before and after images of the site!

29°22'45.00" S 69°57'40.58" W

Waste pile sites such as these, states Milana,

“are designed to be stable, since their acid drainage must be controlled, any accidental movement is not only a risk to the workers but also implies a change to the original design, and subsequently a clear impact to the environment”.

CEDHA recently produced a report showing evidence of unusually high peaks of heavy metal contaminants in local streams neat the Veladero mine site, after the supposed 2008 tailings pile collapse.¹ CEDHA's findings were *based on Barrick's own water quality testing* which we obtained through information requests from the government.

Barrick has suggested that CEDHA's findings are inaccurate because the source of information is unknown, ironic, since the information comes straight from the company. Barrick never explained why there are extraordinarily high peaks of contamination shown in the data and instead, threatened CEDHA with a law suit. This type of reaction from the Candian gold giant Barrick, is not uncommon, as the company has systematically tried to silence anyone criticizing the company, as was

¹ See: <http://wp.cedha.net/wp-content/uploads/2011/09/IMPACTO-DE-LOS-EMPREDIMIENTOS-VELADERO-Y-PASCUA-LAMA-SOBRE-LOS-RECURSOS-HIDRICOS-DE-LA-PROVINCIA-DE-SAN-JUAN-CEDHA-2011.pdf>

the case recently with the book *Black Canada: Pillage Corruption and Criminality in Africa*, by Alain Deneault, which depicts the illegal maneuvering, crimes and human rights violations of Canadian mining companies in Africa, amongst these, prominently, Barrick Gold.

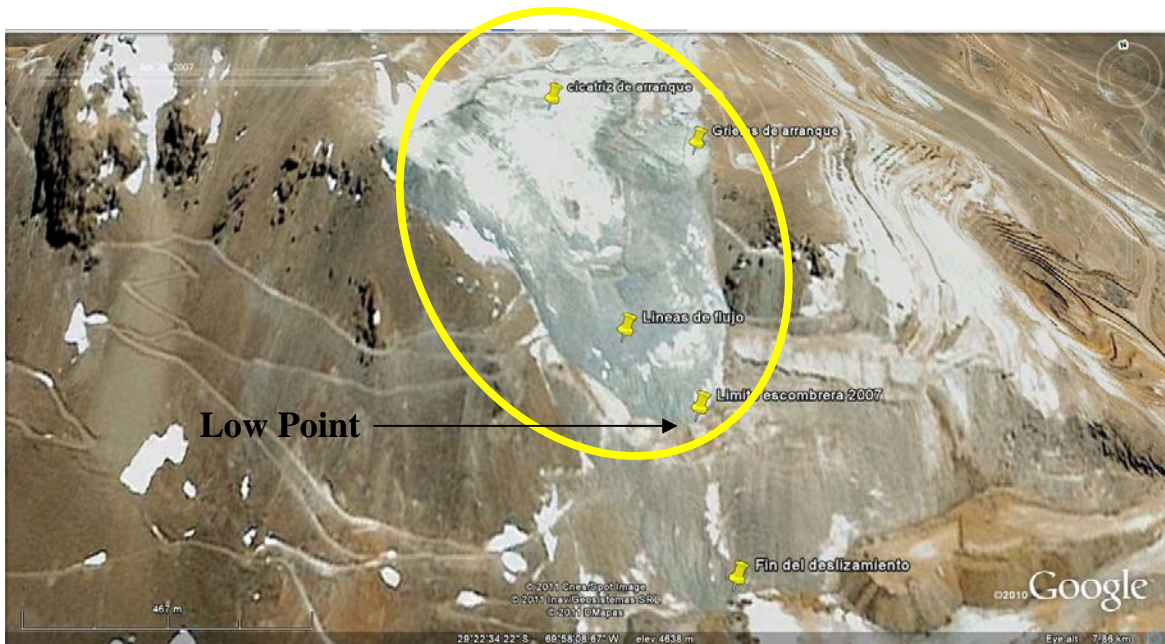
Milana suggests that the presence in the valley of permafrost areas, could have contributed to the fault in the waste pile construction and subsequent landslide. According to Milana, Barrick's technical staff botched the waste pile design, ignoring potential threats to the waste pile's stability due to basic land and cryogenic (ice forms) characteristics they should have identified in the scoping and design phase.

"The fact that a waste pile collapses, speaks very poorly of the engineering of the [Veladero] mine, since the engineers must calculate the stability of the talus ensuring that the inclination of these do not surpass the critical angles for this sort of material and associated water saturation. What I think has occurred is that the necessary impermeabilization to avoid acid drainage of the waste pile was not done and as a result, the material was soaked with acid water, it partially liquefied and slipped downslope, fortunately not for a considerable distance, otherwise it might have reached the lixiviation valley".

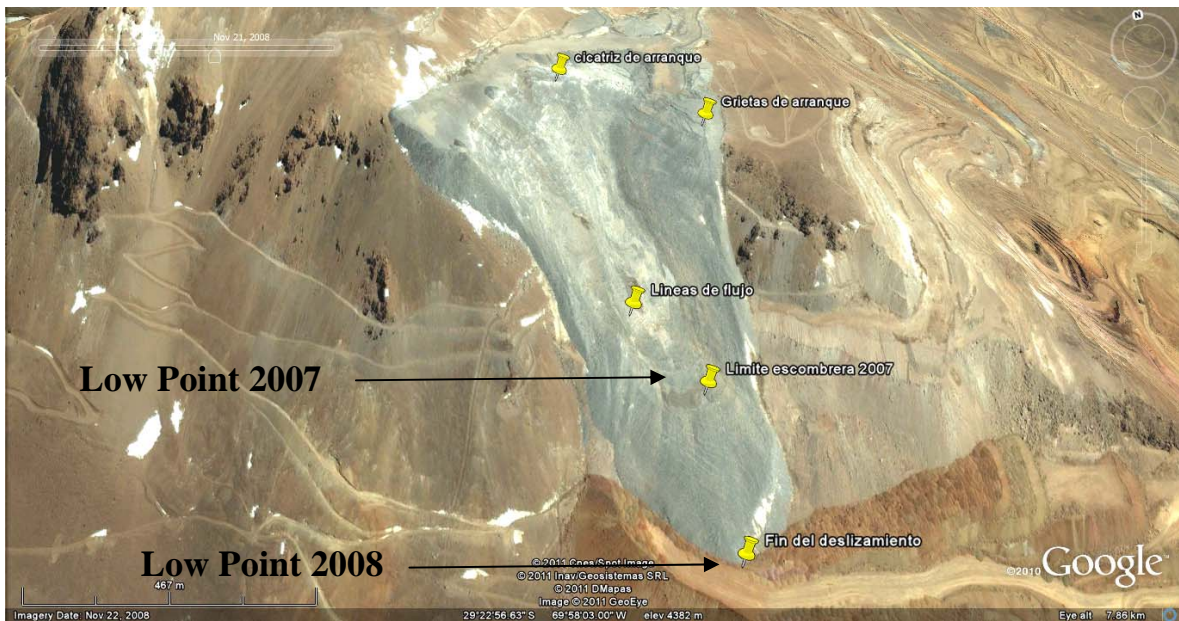
Milana goes on to alert the population.

"It is for this reason that I hope this opportunity helps raise awareness in the population of San Juan that there are serious risks (for example, the collapse of a lixiviation dam) and we don't have the necessary safety elements downstream of these mining projects to guarantee the safety of the population. We can also learn from this experience, that the engineering applied to this mine [Barrick's Veladero mine] is defective, which implies that this and other worse accidents might occur in the future, meriting independent controls"

In the next image we see a picture of the waste pile site in 2007, before the collapse. The waste pile is in grey, contrasting with the brown of the surrounding area. We've indicated the site with a yellow oval. Note Milana's lowest yellow marker, indicating the lower limit of the pile.



The next image shows the pile following the collapse, with its lower limit substantially lower than in the previous image.



The third image, below, shows the site prior to Barrick' introduction of a waste pile, in 2005. Milana had informed authorities that the site contained sensitive permafrost zone, which back then were not protected by national law, as they are now under the National Argentine Glacier Protection Act. Nonetheless, the Provincial Glacier Protection Law leaves permafrost out. This is one of the

important differences between the laws, and why Barrick has expressed its preference for the provincial law, since situations like these would not be tolerated.



Milana also took the satellite images and consulted with landslide experts from Norway, and all agreed that the images clearly show that *there had indeed been a massive collapse of Veladero's waste pile site*. As far as we know, Barrick never informed authorities of this environmentally tragic accident. The public simply has no information regarding the incident.

Conclusions

Milana's revelations shed doubt not only on the security of Barrick's Veladero project to workers, to the environment and to the local population downstream, but also raise questions about the extent of damage that may have been caused by the collapse, which are known only to Barrick.

Today, with the new Nacional Glacier Act, Barrick could not construct a project like Veladero, as it would be illegal. But the law has also a retroactive feature, and today, by Article 15 of the national law, Barrick owes a glacier impact study which it has not produced in which it should explain what are its past and present risks to glaciers of its mining activity. In this regard, Veladero and Pascua Lama are both violating the National Glacier Act. Such a study today would assist authorities to avoid the sort of accident that recently occurred at Veladero in this and other mining projects.

It is no surprise, hence, that Barrick Gold has filed legal action against the National Glacier Act in the federal courts. This sort of action, like that of silencing its critics,

marks just another example of the irresponsible mining carried out by Barrick Gold in Argentina and all over the world.

CEDHA is presently engaging with two mining projects, El Pachón (Xstrata Copper) and Los Azules (Minera Andes) with similar concerns over the presence of rock glaciers, permafrost zones, and project design in order to avoid both violating the national and provincial glacier protection laws, but also avoiding future project safety risks such as these.