Specific Instance
Xstrata Copper

For Impacts to Rock Glaciers and Periglacial Environments in San Juan and Catamarca Provinces of Argentina of El Pachón and Filo Colorado Mining Projects

June 1, 2011

Presented to:

The Australian National Contact Point
Foreign Investment Review Board
c/- The Treasury
Canberra ACT 2600

Attn: Frank Di Giorgio
ancp@treasury.gov.au

cc: Argentine National Contact Point

Complainant

The Center for Human Rights and Environment (CEDHA) – Argentina
Contact: Jorge Daniel Taillant
Email: jdtaillant@gmail.com
Cel: +54 351 507 8376

Sponsoring Institutions:
Fundación Ciudadanos Independientes (Fu.C.I.) - San Juan, Argentina
Asamblea El Algarrobo - Catamarca, Argentina
Nature of the Specific Instance

The following is a Specific Instance submitted to the National Contact Point of Australia (henceforth, NCP), in hopes that through its good offices, the NCP can help mediate a resolution to the issues and conflicts presented herein.

This Specific Instance addresses past, present and future impacts by two mining projects (Filo Colorado and El Pachón) owned by Xstrata Copper1 to rock glaciers (a type of glacier) and to periglacial environments2 in Argentina. Rock glaciers and periglacial environments are both crucial sources of freshwater to the arid and dry regions of San Juan and Catamarca Provinces, in the Andes and Aconquija mountains, respectively. Rock glaciers and periglacial environments are critical to supply water in rivers and streams for irrigation, animal and human consumption and community and environmental sustainability. We've provided three images below showing: a typical rock glacier, the first of which, for instance, shows NO ice or snow (this is common of rock glaciers which is why they are difficult for the untrained eye to identify); a second image showing water surging from the base of a rock glacier; and finally, an exposed cross-section of a rock glacier showing massive amounts of ice in the interior, below a layer of rock on the surface. Rock glaciers can have just as much ice in their massive interior as an ordinary white glacier.

1 Xstrata Copper is based in Brisbane Australia; See: http://www.xstratacopper.com/EN/Pages/default.aspx
2 We use the term “periglacial environment” and “permafrost” interchangeably in this Specific Instance.
Glaciers, rock glaciers, and periglacial environments (in some cases referred to as permafrost) are protected by Argentine national and provincial laws because they are considered as “regulators of water basins”, which means simply that they provide ice meltwater to local rivers and streams all year round, even when the winter snow and ice has melted away.

Despite growing information and evidence that Xstrata Copper’s two mining projects, Filo Colorado and El Pachón are in glacier zones, the company does not recognize documented impacts to glaciers, rock glaciers or to permafrost of its projects. Nonetheless, there is extensive evidence indicating that this impact has already clearly occurred in both of these projects. In regards to glacier impact, the company has refused to commit publicly to upholding the law with respect to rock glaciers and periglacial environments, or even make a statement stating that the company protects glacier resources. Xstrata Copper has also failed to produce a glacier impact study, as it should have by April 2011 according to the new national glacier law, mandating companies already operating in glacier territory to report on past and present impacts to glaciers.

Instead, Xstrata Copper has denied that glaciers exist at their project sites. The company has gone as far as to say that there are no glaciers at any mining site in Argentina, which is not only completely untrue, but is also entirely beyond the company’s knowledge. Xstrata Copper employs nuanced references to differences between rock glaciers, and ordinary white glaciers, to confuse the public about the glacial ice reserves they are impacting. While these differences exist in descriptive or categorization terms, there is simply no difference in terms of natural resource value between an ordinary white glacier and rock glaciers, in fact, one can say that rock glaciers are more important than white glaciers as they conserve ice at lower elevations (at higher temperatures) thanks to their protective rock cover, thereby significantly increasing ice reserves in dry and arid places like San Juan and Catamarca!

We (CEDHA) have made reiterative constructive and well intentioned requests to engage Xstrata Copper on these matters without success.

Xstrata Copper’s General Manager for Argentine operations, Xavier Ochoa, denies any relationship between Xstrata Copper’s mining operations and glaciers, saying recently, “there has never been a mining project on a glacier. We have lots of false references and experts, but we’re not even talking about glaciology”. Mr. Ochoa’s statements are simply false, as there is extensive independent academic research showing that there are indeed glaciers (rock glaciers) and periglacial environments at the El Pachón site in San Juan, as well as at the Filo Colorado site in Catamarca.

In a letter to CEDHA, dated May 25, 2011, Xstrata Copper, instead of engaging constructively with us about our findings, to work towards addressing the indisputable evidence that has recently been revealed about Xstrata Copper’s impacts on rock glaciers (based on Xstrata Copper’s own

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environmental assessment maps), Xstrata Copper discredits our work, and claims falsely that Xstrata Copper is in full compliance with the law: Mr. Ochoa says, “since acquiring the El Pachón project in August 2006, Xstrata Copper has worked in full compliance with all applicable regulations”. According to the National Glacier Law, Xstrata should have produced a specific glacier impact assessment by April of 2011 (180 days after promulgation of the law), which it has failed to do. We should also note that Xstrata Copper’s impacts to rock glaciers and permafrost zones at the El Pachón site are ongoing, largely due to the permanence of mining exploration roads introduced by the company, which directly impact rock glaciers and permafrost. This is a violation of national and provincial glacier protection laws. In order for this impact to cease, those roads must be eliminated and the rock glaciers restored to their original state.

Further, Xstrata Copper states in its letter to CEDHA, in reference to routine environmental impact assessments (which do not take account of existing impacts to rock glaciers) “these studies include investigations to understand the characteristics of permafrost and other manifestations of snow and winter ice in the El Pachón project area.” As is evident in Mr. Ochoa’s references, the EIAs are only looking at permafrost (frozen ground—but not glacial ice formations), since “other snow and winter ice”, are not references to glaciers, but rather to seasonal snow and ice. Seasonal snow or ice melts during the summer months, and hence are not considered part of perennial snow and ice, and as such have no relationship to the hundreds of perennial rock glaciers found at the El Pachón site. Mr. Ochoa chose his words carefully, referring to “winter” ice, assuring in this manner, that Xstrata Copper is not recognizing the existence of rock glaciers (ice that remains during both winter and summer). We should infer from this according to Mr. Ochoa’s statement that the company is not studying rock glaciers or mining impacts to rock glaciers.

In the same letter, Xstrata Copper then discredits our report on the impacts on rock glaciers and permafrost by El Pachón, indicating, “Your report, which [Mr. Ochoa has] reviewed in some detail, appears to be based on desktop research and as such is not comparable to the rigorous and detailed scientific studies that our specialized teams and consultants at El Pachón are undertaking”. Clearly the denigration of a legitimate stakeholder’s research work is unacceptable by the standards set forth in the OECD Guidelines, coming from a multinational company working in extremely sensitive environments and in regards to a highly contentious issue today in Argentina, which is the conservation of glaciers, rock glaciers and periglacial environments. But this insult by Mr. Ochoa of our work, ultimately is the least of our concerns.

In fact, we are much more concerned over the merits of Xstrata Copper’s scientific team, which we had no reason to doubt until we obtained a copy of Xstrata’s Geomorphological Survey. While Mr. Ochoa suggests that his team is carrying out rigorous scientific work, in fact, we have documented gross errors in this mapping exercise. For instance, the map incorrectly labels a pile of ordinary rocks on a mountaintop, as a rock glacier. This sort of error is visible through publicly available satellite imagery, such as that available on Google Earth. With easily accessible software programs, Xstrata Copper’s maps can be viewed as transparencies superimposed with real satellite imagery. We have transformed Xstrata’s geomorphological map into a transparency, and posted it on our website for anyone to consult, simply by opening the document in Google Earth.4

Even an inexperienced observer can clearly catch this above-mentioned error. Below are three images, the first (on the top left) a Google Earth image capture showing rock formations on a mountain top (note that rock glaciers don’t form on mountain tops). The image on the top right shows a section of Xstrata Copper’s geomorphological map, of the same site. The brown formations in Xstrata’s map are rock glaciers. We already sense something is wrong with this image as the thick black line practically running into the supposed rock glacier is the mountaintop ridge, so there shouldn’t be a rock glacier at that site. We’ve outlined in light blue (in the image on top left) where those formations would be in the real satellite image. We have also reproduced a superimposed

4 See: http://www.cedha.org.ar/contenidos/Mapa%20Pachon.kmz (open this file in Google Earth - it’s 4mb big!)
There are clearly NO glaciers at this site. It is simply impossible because of the mountaintop location. This sort of error is repeated at least 30 times in this one map in which Xstrata inventories over 200 rock glaciers and categorizes 20% of the concessions area as permafrost zone. That's a 15% error rate in the identification of rock glaciers. But that's not the only error in this map. We've identified some 60 rock glaciers that have been left off of the geomorphological map. That's a 30% error factor in terms of underreporting of rock glaciers, hardly the “rigorous” scientific work that Xstrata claims to be carrying out.

The following image is a reproduction of Xstrata Copper’s entire geomorphological map where rock glaciers (brown forms with stripes) and permafrost zones (light blue) are indicated by the company. Keep in mind that 15% of the cited rock glaciers are incorrect, while 60 other rock glaciers are missing from the map.
Xstrata Copper’s Geomorphological Map
We’ve listed these errors and added the missing glaciers to our own inventory, one by one at the end of the attached report on the impacts to rock glaciers of El Pachón. Evidently this sloppy scientific work by Xstrata’s technical team is far from the “rigorous” nature of the work which Mr. Ochoa alludes to, which can only lead us to doubt all of his statements and/or conclusions of his technical team, with respect to the presence and location of rock glaciers in the project vicinity.

Xstrata Copper has never answered, formally or informally, what it plans to do about the impacts on rock glaciers and periglacial environments that we’ve documented at the Filo Colorado project site or at the El Pachón site.

Evidence of Environmental Impacts by El Pachón

We are adjoining to this Specific Instance, two lengthy and detailed reports for both the Filo Colorado and El Pachón projects. Internet links to those reports are offered at the end of this Specific Instance. They offer extensive and very didactical/explicatory evidence for the non-glacier expert showing clearly how Xstrata Copper, through the Filo Colorado and El Pachón projects, has impacted and will impact glaciers (specifically rock glaciers) and periglacial environments. Both reports, despite Xstrata Copper’s unfounded criticism regarding our findings, were prepared with the contribution of geologists and rock glacier experts, one of which has conducted extensive research on impacts of mining on rock glaciers in the Andes Mountains.

Below is an example of a rock glacier (it is gray and looks similar to lava flow) flowing down a mountain side, with one of Xstrata’s mining exploratory roads encircling it and crossing it at its most sensitive part, called the “rooting zone,” (in the upper portion, indicated by the yellow arrow) where it feeds on water and ice. This mining road introduced by Xstrata Copper is effectively strangling this rock glacier. If it is not removed, it is likely that this glacier will eventually die.
Our findings indicate that Xstrata Copper is interfering with, impacting and likely strangling several rock glaciers, and in addition, has impacted periglacial environments. In the case of El Pachón, Xstrata’s own maps show that there are over 200 rock glaciers in the project concession, while 20% of the concession area is permafrost a zone. Our inventory shows that some 60 glaciers have not been inventoried by Xstrata Copper’s supposedly “rigorous and detailed scientific studies [and] specialized teams and consultants”. As already mentioned there are even blunt errors in Xstrata Copper’s glacier inventory, which contains rock formations that are clearly not glaciers. It is evident to us that the work of Xstrata Copper’s technical team, which prepared the 2008 Geomorphological Survey showing glaciers and periglacial environments, is not “rigorous”, but rather, largely deficient and cannot be taken to represent an accurate picture.

Below is another example of the violations of Argentine Glacier Protection Laws, which are imminent if this project is to move forwards as is. The following image is again from Xstrata Copper’s Geomorphological Survey, showing one of the future pit areas (the purple polygon). In it, and according to Xstrata Copper, there is a prominent rock glacier (the brown striped form). Also, the light blue colored area in the pit is permafrost zone. Both the rock glacier and the permafrost zone will be destroyed by pit excavation at this site. This impact would be illegal under Argentina’s National Glacier Protection Law, as well as by San Juan’s provincial law, which explicitly protect both glaciers and permafrost, and which (in the case of the national law) prohibit mining in glacier and periglacial environments.

This is but one example of the many violations we have documented in our report on the impacts to rock glaciers by El Pachón, which is adjoined to this Specific Instance.

We offer below a few images showing rock glaciers, Xstrata’s exploratory roads crossing rock glaciers, and Xstrata Copper’s own maps showing how a waste pile site (red oval) is located where two rock glaciers presently exist.
Guidelines Violations

We can provide a detailed explanation of these impacts and how they relate to violations of the OECD Guidelines for Multinational Enterprises. In sum, we find clear violations to:

Chapter II: General Policies, paragraphs 1, 6, & 7, due to non-sustainable approaches to development by the destruction of critical environmental resources; due to failure to comply with due diligence and showing inadequate corporate governance of sensitive environmental impacts and concern by stakeholders; due to failure to generate a relationship of confidence and mutual trust between the enterprise and society, aggravated by the fact that we’ve made a persistent effort to engage in an open, transparent and constructive manner.

Chapter III: paragraphs 1, 2, 4, & 5, due to the failure to provide timely and reliable information about its impacts; due to providing extremely poor scientific rigor to its assessments; due to failure to publish objectives relative to impacts to rock glaciers and permafrost; due to failure to provide statements on mitigation plans; due to failure to provide information concerning legal compliance with national and provincial glacier protection laws.

Chapter V: paragraphs 1, 2, 4, 5, 6, & 8, due to failure to provide adequate and timely environmental information about rock glacier and permafrost impacts, objectives, and monitoring data; due to failure to communicate information about impacts; due to failure to address and assess decision-making about impacts; due to failure to include rock glaciers and permafrost in environmental assessments; due to failure to consider scientific risk studies to rock glaciers and permafrost in Xstrata Copper’s exploratory phase; due to failure to produce a contingency plan; due
to failure to adopt best available technologies to avoid rock glacier impacts; due to failure to contribute to the implementation of the National and Provincial Glacier Protection Laws.

**Engagement with Xstrata Copper about these Findings**

Before deciding to file this Specific Instance, we maintained constructive dialogue with the company for many months, beginning in December of 2010. It is only after recent developments and Xstrata Copper’s decision NOT to recognize any of its impacts, as well as the company’s sudden change of attitude, that we have decided to file this Specific Instance.

(on Filo Colorado)

Our communications with Xstrata Copper began in December of 2010, regarding inquiries about environmental studies the company produced for its Filo Colorado copper project in Catamarca, Argentina. We have evidence of over a dozen cordial and professional exchanges with Xstrata Copper concerning the Filo Colorado project. We offered to keep all of our conversations off the record, and did so. We have not revealed or published any confidential conversations, nor have we circulated any malicious information against the company at any point during our engagement. Our strong public criticism of Xstrata Copper commenced only in conjunction with the decision to file this Specific Instance following Xstrata Copper’s abrupt change of discourse.

At one point in our research, in hopes of having a sincere exchange about our work findings which were evolving at the time, we communicated with the head of global communications of Xstrata Copper, and conducted, over the telephone, and with each of us at a computer, an online session on Google Earth to review our findings which included several satellite images of impacted rock glaciers. This was long before we actually published the report, giving ample time for Xstrata Copper to respond to us about our conclusions. Xstrata Copper never provided any feedback whatsoever on the substantive issues at stake. At that time, we specifically asked Xstrata Copper to put us in contact with their technical team so that we could share our findings and get a response from the company before we concluded our study. Xstrata Copper made no effort to materialize this meeting. Xstrata Copper also refused a request we made to visit the site with both their and our technical teams present. We, hence, continued with our research and eventually published, on February 17, 2011, our findings of Xstrata Copper’s rock glacier and periglacial environmental impacts at Filo Colorado.

Despite the overwhelming evidence that the Filo Colorado access roads constructed by Xstrata Copper impact rock glaciers, Xstrata Copper has not at any point recognized the existence of rock glaciers or periglacial environments at Filo Colorado. In fact they have categorically denied the presence of rock glaciers at the site in telephone conversations, this despite the ironic fact that they inadvertently published a photo of a rock glacier on the cover of their environmental impact study for Filo Colorado, which any glacier specialist will quickly recognize. In fact, the photographer of that photo was standing on a rock glacier when taking the photograph! Clearly Xstrata Copper’s rigorous scientific team missed that one!

To the untrained eye, rock glaciers are difficult to recognize since they do not necessarily show ice or snow. Perhaps that is why Xstrata Copper’s technical team missed this very obvious rock glacier portrayed on the cover of the Environmental Impact Assessment, and claims erroneously and firmly that there are no glaciers at the Filo Colorado site.

Debris along left side of image covers rock glacier.  
source: Cover of Xstrata’s EIA for Filo Colorado
Xstrata Copper has never commented, taken action or indicated that it will take any measures to repair the extensive rock glacier and periglacial environment impacts from roads introduced by the company to access Filo Colorado.

(On El Pachón)

Following our report on Filo Colorado, we moved to examine El Pachón, a copper project by Xstrata Copper in San Juan Province, Argentina. We requested on numerous occasions, and in a very cordial manner, that Xstrata Copper provide us with environmental impact studies to conduct our research. In this case, which followed the publication of our first report, the company was not so forthcoming with information. It took us several months to obtain a 2008 impact assessment report, which was eventually placed on the provincial government website, after we notified the government threatening legal action. Xstrata Copper never responded. The report contained a geomorphological survey map produced by a consulting firm (URS), which plots rock glaciers and permafrost zones at the project site. We reproduce this map on page 6 of this document.

Our findings in El Pachón have been even more worrisome, with much more extensive impacts to rock glaciers and periglacial environments of the exploratory phase of El Pachón than in Filo Colorado. We communicated this to the company, and requested their impact studies, initially with no response. We nonetheless continued to maintain ongoing and constructive engagement, communicating our work, step by step to Xstrata Copper, also requesting information and communication with their technical staff, as well as insisting on a response to impacts at Filo Colorado. Nothing came of those requests. If the NCP so desires, we can provide all of these exchanges with Xstrata Copper showing our constructive engagement and good will.

Finally, we were contacted by the Head of Sustainability for Xstrata Copper in Argentina, offering to meet. We accepted the offer immediately and met in early May of 2010. At that time, we offered to seek a friendly solution to the findings in our report, essentially pointing to the need to repair past damage and avoid future impacts. We also indicated that we expected Xstrata Copper to collaborate and recognize publicly that the company was indeed affecting glaciers and periglacial environments, and to state that it would commit to repairs and avoid future impact. We ended that meeting on good terms with what we thought was an earnest commitment by Xstrata Copper to engage in dialogue about addressing the issues in our report. It was also an opportunity, we thought, for a key mining project in Argentina to effectively address glacier impacts and help set a
standard and precedent for other mining companies operating in the area. It was at that time that we put in motion an international effort to bring together key actors to draft an International Protocol for Mining Operations in Glacier Territory, similar to the Kimberly Principles for diamond mining. We sincerely thought Xstrata Copper could support and actively engage in this initiative. As such, we held meetings to discuss and seek support for this initiative with the Canadian Embassy, the Mining Minister of San Juan, and engaged in dialogue with the ICMM, the World Bank’s IFC, as well as with academic actors, glacier specialists and geologists, etc. We’ve been able to generate significant traction with this idea and wish to keep it as one possible contribution to a resolution of this Specific Instance.

With the publication of our report on impacts at El Pachón to rock glaciers and periglacial environments, on May 23, 2011, we sent a letter to Xstrata’s Copper CEO in Australia, Charlie Sartain, requesting the same action that we request in this Specific Instance, specifically that Xstrata Copper:

“cease all activity related to El Pachón until a proper glacier impact assessment can be carried out, as mandated by national law. We also call on Xstrata to repair past damage to rock glaciers in the project area.”

In further communication in the last few days, we’ve also requested that the company commit publicly to protecting glaciers, rock glaciers and periglacial environments, and we invite the company to participate in the drafting of the above mentioned global protocol, for mining operations in glacier territory.

We earnestly believe that these requests to Xstrata Copper are reasonable, and that the company should engage in good faith efforts to address the findings in our report, instead of denying what is evident from publicly available information and satellite imagery, or minimizing the rigorousness of our reports, when their own reports in the inventorying of glaciers contain serious technical errors. Furthermore, we are a legitimate stakeholder that should be treated with respect and the proper due diligence, as should any other legitimate stakeholder.

Requests of the Specific Instance

We ask the Australian National Contact Point (NCP) to offer its good offices to:

Encourage Xstrata Copper to commit to the following:

- Cease all activity related to El Pachón until a proper glacier impact assessment can be carried out;
- State that it shall protect rock glaciers and periglacial environments in all of its global operations;
- Uphold national and provincial laws regarding environmental, and specifically glacier (including rock glaciers) and periglacial environment protection;
- Produce a glacier impact assessment for its Filo Colorado and El Pachón projects, as is mandated by the Argentine National Glacier Protection Law;
- Repair any past damage that the El Pachón and Filo Colorado projects have caused to rock glaciers and periglacial environments;
- Avoid future impacts to glaciers, rock glaciers or periglacial environments in any and all of its global operations;
- Engage with CEDHA and other actors, in a constructive attempt to help set an industry standard in Argentina and elsewhere regarding mining operations in glacier territory;
Rationale for choosing the Australian National Contact Point for this Specific Instance:

The Australian state has committed to “recommend to multinational enterprises operating in or from their territories the observance of the Guidelines” and as such, to promote “responsible business conduct consistent with applicable laws” …such that operations “are in harmony with government policies, to strengthen the basis of mutual confidence between enterprises and societies in which they operate, to help improve the foreign investment climate and to enhance the contributions to sustainable development made by multinational enterprises”. (quotes taken from the Preface of the OECD Guidelines)

We discourage that this Specific Instance be deferred to the Argentine National Contact Point, since Xstrata Copper is based in Australia and has actively decided to expand its operations regionally and internationally, making this issue pertinent to projects that it has beyond Argentine borders. But more importantly, the OECD Guidelines were created precisely to commit States to follow the operations of companies that operate abroad. While communication or consultation between NCPs (with the Argentine NCP) is clearly welcome, we would stress the importance for the Australian NCP to lead in the uptake of this case.

At present, Argentina is suffering great controversy over mining impacts to glaciers and periglacial environments. Xstrata Copper’s actions serve to deepen this controversy, instead of helping resolve it, when Xstrata Copper could have otherwise taken a more constructive stance. The circumstances that surround this conflict in particular are solvable, and a constructive engagement by the company with the proper commitment to protecting glacier resources could go a long way to helping the sector resolve the impasse that presently exists on the matter.

In this regard, the Australian National Contact Point, through its good offices could make a significant contribution to finding a more sustainable path to mining operations occurring in glacier territory.

Representation

While we are the lead presenting organization of this Specific Instance, we are working on behalf of communities of San Juan and Catamarca provinces, and have invited two prominent local civil society organizations in each of the provinces affected, to join as co-sponsors to this Specific Instance, Fundación Ciudadanos Independientes (Fu.C.I.) of San Juan and the Asamblea el Algarrobo of Catamarca. CEDHA, however, assumes full responsibility over the content and accuracy of this report and supporting evidence.

Further, for contacts in Australia, we are approaching local civil society organizations which partner with us in diverse networks, including Oxfam Australia, who have specific mining expertise as well as familiarity with the OECD Guidelines, with a view to help facilitate local communication, dialogue and intercommunication with the Australian NCP and other pertinent actors in Australia.

Language of this Specific Instance

We have no problem communicating in English or Spanish with the NCP and/or with the company. Note however, that the first report we submit as evidence, of the impacts to rock glaciers and periglacial environments by Filo Colorado (Catamarca), is only available in Spanish.
Center for Human Rights and Environment (CEDHA)

Presenting Institutions

Center for Human Rights and the Environment (CEDHA) was founded in 1999 to promote greater harmony between the environment and people. CEDHA works on environmental and human rights protection, corporate accountability, access to justice, transparency and access to information, climate justice, and compliance of social and environmental norms. In 2007, CEDHA received the Earth Care Award, the Sierra Club’s most distinguished international advocacy award for the promotion of Corporate Accountability and Human Rights. CEDHA is based in Córdoba Argentina and has a Democratizing Glaciers Initiative, and a Mining, Environment and Human Rights Program, dedicated to promoting greater transparency, access to information, more robust and effective State controls and community awareness of mining activities in the region, and their impacts to the environment and communities.

Contact info:
Jorge Daniel Taillant
jdtailnant@gmail.com
Tel. +54 9 351 507 8376
www.cedha.org.ar

Fundacion Ciudadanos Independientes (Fu.C.I.) was founded in 2003 and works actively on anti-corruption, brining local complaints and working to promote greater accountability and transparency. One of Fu.C.I.’s key focus areas is environmental sustainability, and advocacy around open pit mining and toxic substances in the Andes Region.

Contact info:
Silvia Villalonga
fuci@infovia.com.ar
Tel. +54 9 264 410 2938
www.fundacionciudadanosindependientes.org

Asamblea el Algarrobo, of Andalgalá Catamarca works to raise the awareness of local community actors in regards to the impacts of mega-mining projects in Catamarca, with a particular focus on operations by Xstrata (La Alumbrera and Filo Colorado), as well as Yamana Gold (Agua Rica).

Contact Info:
Sergio Martinez
sergiomartinez103@hotmail.com
tel. +54 9 3835 528071
http://prensaelalgarrobo.blogspot.com/
Links to related evidence and documents:

Reports
Xstrata’s Glacier Impacts at El Pachón

Xstrata’s Glacier Impacts at Filo Colorado (in Spanish Only)

Maps and other Technical Information
Xstrata’s Geomorphological Survey Map Showing Rock Glaciers and Permafrost for the El Pachón Project (as JPG file)

Xstrata’s Geo-Survey Map as Google Earth File
http://www.cedha.org.ar/contenidos/Mapa%20Pachon.kmz

Rock Glacier Inventory around El Pachón (view in Google Earth)
http://www.cedha.org.ar/contenidos/Glaciar-Inventory-Pachon.kmz

Argentine National Glacier Protection Law

San Juan Province Glacier Protection Law

Letters Between CEDHA and Xstrata Copper

Letter by CEDHA to Xstrata Copper CEO Charlie Sartain – May 23rd, 2011

Letter from Mr. Ochoa (Xstrata Copper – Manager Argentina) – May 25th, 2011

Letter by CEDHA to Xstrata Copper CEO Charlie Sartain – May 29th, 2011