



Poeira de amianto contamina vegetação em Mata dos Palmitos

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## Emission of mineral dust in the manufacture of soapstone affects the community of Mata dos Palmitos (MG)

**DATE**  
11/07/2012

**DISTRICT**  
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**LATITUDE**  
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**LONGITUDE**  
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### SUMMARY

*The rural community of Mata dos Palmitos, in Ouro Preto, lives on the craft of soapstone. The activity, developed in a rudimentary way, causes large emissions of dust and great environmental impact, since this dust accumulates on the region's river banks, causing siltation and spreading contamination to areas without craft activity.*

### CASE DESCRIPTION

With 1,245,864 km<sup>2</sup> and 70,281 inhabitants (IBGE, 2010), the municipality of Ouro Preto became internationally famous for the soapstone carvings made by Antônio Francisco Lisboa Aleijadinho, master of Brazilian Baroque. The material is used until today in the region for the production of handmade objects. In the rural community of Mata dos Palmitos, in the District of Santa Rita de Ouro Preto, for example, families have been producing, in a rudimentary way, soapstone works for more than a century (BEZERRA et al., 2003).

Soapstone (or steatite) is the name given to a metamorphic rock composed primarily by the mineral talc [Mg<sub>3</sub>Si<sub>4</sub>O<sub>10</sub>(OH)<sub>2</sub>], a hydrated magnesium phyllosilicate. Chlorite, serpentine, magnesite, antigorite, enstatite and, occasionally, quartz, magnetite or pyrite may also occur. Talc has many industrial uses, being employed mostly at the ceramic, textile, and pharmaceutical industries, and in the production of insecticides, cosmetics, soaps, inks, erasers, papers and refractories (BEZERRA et al., 2003).



Artesã trabalha em condições precárias

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In the community of Mata dos Palmitos, situated 40 km from Ouro Preto, there are three small private mines located in the regions of Bandeiras and Sanches (MPT, 2006). 180 people reside in the area, of which 123 are soapstone artisans, an important economic alternative for the local population that has little access to the formal labor market. In the craft production, performed in workshops located next to the residences, manual labor predominates, but some use electric saws and lathes. About 25% of the labor force dedicated to craft production are of individuals between 7 and 17 years old (BEZERRA et al., 2003).

In 2006, NGO Social Observatory was in town to perform a report and verified the use of child labor in the production chain of talc, which was proven by means of pictures of children working and by collecting testimonials (VERAS et al., 2006). The fact gained international repercussion for it involved the multinationals Basf, ICI Paints and Faber-Castell, which purchased raw material (talc ore) for use in the manufacture of various products such as crayons, paints, pharmaceuticals and cosmetics (CASARA, 2006). Faber-

Castell suspended the contract immediately after it was aware of the facts.

After the publication of the report, technicians from the Ministry of Social Development and Fight Against Hunger, the Ministry of Labor and Employment, and the Ministry of Mines and Energy, as well as representatives from the Federal Public Labor Prosecutor's Office (MPT) and the Federal Police were in town to investigate the case. No children were found working in the mining companies investigated (MDS, 2006).



Artesão utilizando serra elétrica

Similarly, a report by the National Department of Mineral Production (DNPM) concerning the inspections that occurred in 2005 states that it was not detected the presence of children or adolescents at the time when the companies were investigated, namely: Minas Talco Ltda. and Minas Serpentinito Ltda. (MPT, 2006).

In conclusion to the complaint of child labor, MPT has stated that: "the work of children and adolescents in Mata dos Palmitos exists as a matter of fact - through activities designed to help in the families' livelihood and income, not being performed directly to companies that exploit the region's reserves or those that buy stones. At no time was it observed the work of children and adolescents in the mines, in the ore extraction activity; however, their workforce is used for cleaning services in the mine area and for collecting waste rocks, either for their use in craftwork or for commercialization by processing companies that benefit them" (MPT, 2006).

During the inspections it was also verified that all ore extraction in the locality was clandestine. That was because Minas Serpentinito Ltda, the only company possessing license of mining research in the locality, held no concession to mine, due to pending issues regarding the environmental impact of its activity. On January 5, 2005, Minas Talco Ltda transferred to Minas Serpentinito Ltda the right to perform mining, which involved only search authorization, keeping for itself the responsibility to process the ore. As Minas Serpentinito did not have a Usage Guide [a document issued by the DNPM that allows, on an exceptional basis, the exploitation of minerals in the area entitled before the granting of the Mining License], it could not perform mining activities in the region. Despite this,

the company entered into illegal contracts of "lease of mineral deposits" with four companies in 2005, all formally suspended later on (MPT, 2006).

Ore exploitation is also held in Mata dos Palmitos through the superficiaries [owners of the land where the mine is located] who, due to lack of machinery, receive a derisory price for the rocks. The material is sold to companies, such as Minas Talco and Minas Serpentinito, to be processed and exported. The two companies buy talc without any verbal or written agreement of purchase and sale between them and the superficiaries (MPT, 2006). The artisans also buy raw material from the companies that exploit the occurrences in the region and access to soapstone has been more and more difficult (BEZERRA et al., 2003).

At a public hearing held at the City Council of Ouro Preto on March 21, 2006, the superficiaries testified that they performed mineral extraction in the area acting as employees of Minas Talco Ltda and Minas Serpentinito Ltda and that they - associated in a cooperative - were trying to get the right for legal mining in the Mata dos Palmitos area. They claimed that the exploitation of industrial talc had been happening for 69 years, long before the Mining Code had entered into force [federal law that regulates the administration of mineral resources by the Union, the industry of mineral production and distribution, the trade and the consumption of mineral products in Brazil] (MPT, 2006).

In addition to illegally exploiting soapstone, Minas Talco and Minas Serpentinito do not supervise how the ore extraction is carried out by the suppliers - the superficiaries - in relation to organization of work, safety and health conditions in the mines, permanence of children in the area of the deposits, modus operandi of how the area is cleaned, and how stones are collected and piled up. They simply monitor the pattern and the classification of the ore, in order to enable its sale. In view of this behavior, the two companies were held responsible for indirect exploitation of labor in Mata dos Palmitos. Minas Talco Ltda, which carries out activities of raw material beneficiation, was fined by the Ministry of Labor and Employment (MTE) for non-compliance with the labor legislation on issues impacting the work environment (MPT, 2006).

MPT also forwarded to the municipality of Ouro Preto a Notification forcing the city to promote public policies to address the economic and social precariousness of the Mata dos Palmitos community. Similarly, companies who had acquired products and inputs from mining in Santa Rita de Ouro Preto, including those pointed out by the report of the Social Observatory (Faber-Castell, ICI Paint and Basf) were notified to attend MPT to firm commitment towards monitoring of its suppliers on the use of child labor (MPT, 2006).

Following publication of the Social Observatory report, and also as a way to curb child labor, the Ministry of Social Development and Fight Against Hunger (MDS) has expanded from 60 to 280 the number of children served in Ouro Preto by

the Program for the Eradication of Child Labor (Peti), which ensures monthly income to the family as long as their children remain in school. Of the 220 Peti's new vacancies in the municipality, 60 contemplated the District of Santa Rita de Ouro Preto. In the locality, the program has served 20 children, who studied and participated in social-educational activities (MDS, 2006).



Máquinas para beneficiamento de pedra-sabão

Another problem found in Mata dos Palmitos is the precarious condition which the artisans working with soapstone are subject to. The activities are carried out in locations approximately 6 to 8 m<sup>2</sup> wide, with heights ranging from 1.5 to 2 m. The saw is supported in a masonry structure similar to a packing case, and lighting at night is inadequate. In most cases, workers either do not use personal protective equipment or use it incorrectly, or improvise materials not suitable for this type of activity (LIPPMANN; CASTILHOS; EGLER, 2007).

Poor working conditions are aggravated by the fact that the production process generates large emissions of mineral dust, which is inhaled not only by the workers but also by children and infants taken by mothers to the workplace. As some artisans also do temporary work in the talc mines, manually fragmenting rock blocks that are extracted mechanically, exposure to particulate matter in the atmosphere becomes even more intense for these professionals (BEZERRA et al., 2003).

Repeated exposure to talc dust can lead to the development of several diseases such as pneumoconiosis [lung disease caused by inhalation of inorganic (minerals) and organic dusts suspended at the workplace and consequent deposition of respirable particles of talc in the alveoli]. One of these pneumoconiosis is talcosis - a disease characterized by progressive pulmonary fibrosis, irreversible, with no possibility of effective treatment (JONES et al., 1994 apud BEZERRA et al., 2003). However, it can be prevented through effective measures of environmental control (BEZERRA et al., 2003).

The study on the rock and mineral dust generated in the handicraft production units in Mata dos Palmitos concluded that in their compositions there is predominance of talc and

the dust is contaminated by breathable fibers of asbestos from the amphibole group (tremolite-actinolite). The same study showed that the tolerance limit for respirable asbestos fibers in situ was surpassed, highlighting serious imminent risk to the health of artisans (BEZERRA et al., 2003). In another study, data was collected in 15 spots considered the most significant for determining the critical points for the artisans' health. Conclusions showed that the levels of particulate matter in the atmosphere of Mata dos Palmitos were high, especially in the workplace, leaving the population subject to contract chronic lung diseases (LIPPMANN; CASTILHOS; EGLER, 2007).

The risks to the environment and, especially, to the health of the population require the adoption of environmental control measures and the introduction of new technologies in the production process of soapstone craft that are capable of reducing the emission of mineral dust (GANDRA, 2008).

Under this scenario, CETEM, in partnership with other government agencies as well as public and private institutions, has developed a pilot project in the Mata dos Palmitos region towards dust reduction. Tanks for decantation of solid material from the wet process were installed, allowing recirculation of the processing water and thus generating savings. The wastes are being studied by CETEM's Department of Ore Treatments, to test the possibility of employment in industrial activities, which would minimize the tailings basins (SILVA; ARAÚJO; CASTILHOS, 2009).

The idea is that, with the implementation of new technologies at the Mata dos Palmitos pilot unit, and with the encouragement towards cooperativism, the living conditions of the artisans in the region and the environment can be improved. Subsequently, it is intended to replicate the model in other communities in the region that also use soapstone in craftwork (SILVA; ARAÚJO; CASTILHOS, 2009). The Prototype Unit of Clean Technologies for Soapstone Art was inaugurated on July 14, 2010 (FRANÇA; BRAGA; LUZ, 2010). Its inauguration represents a milestone in the clean production of soapstone craft and in ensuring the preservation of the cultural heritage of the Mata dos Palmitos community, also serving as a model to be replicated for the benefit of other communities in the municipality of Ouro Preto (REDE APL MINERAL, 2010).

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