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## May 2006: Chrysotile and Science The time has come to make the point

In 1999, Europe banned asbestos, basing its decision on the available data at that time. However, over the past 6 years, many scientific studies were published and provide strong proof demonstrating the existence of major differences between chrysotile and amphiboles as regard to their "health risk. These studies also present very interesting data regarding the implied risk in light of levels of exposure.

On May 23<sup>rd</sup> and 24<sup>th</sup> 2006, at the Fairmont Queen Elizabeth Hotel in Montreal, scientists from around the world will meet to exchange current information about chrysotile. The program: The most recent data from the most recent chrysotile studies. Let us remember that during the last decade many studies about this valuable mineral have been published and even contradict other studies.

Today, one can therefore observe that with new industrial technologies, work practices in place today, chrysotile usage does not represent any significant risk to human health.

These are new information and data that should be known and widely circulated.

This international conference which promises to be of great interest is addressed to scientists, employers and their employees, union and government representatives and all others who might have an interest in chrysotile.

**CHRYSOTILE: RECENT RESEARCH, STRONG DATA, NEW REALITY.**



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## Editorial: 100,000 deaths or the ABCs of misinformation

Year 2002. A press release by the International Labour Organization (ILO), announced that accidents at work and professional diseases will cause 2 million victims each year. In the same communication, one would read that asbestos will cause, all by itself, some 100,000 deaths each year. Since the day this press release was sent throughout the world misinformed people were and are still accepting and believing this data as if it were sacrosanct and not subject to challenge.

Moreover, on its website, ILO wrote that the data concerning asbestos are there for information purposes. And, that the International Labour Office, an entity related to ILO, is supposed to regularly update these statistics. However, the ILO cannot always guarantee their accuracy. In the instant case, the 100,000 deaths per year attributed to asbestos, it is evident that the information is not current as has been the case for a few years. It is time for ILO to review and update these data.

It is appropriate to remember that ILO is a tripartite organization (government, employers and employees); thus it is surprising, for a such a complex and controversial issue, that the author of the press release, Jukka Takala, makes himself the official spokesman for all parties of the ILO.

Those who are quick into the fray armed with such incomplete and biased information make it evident that their attention has not been given to recent scientific publications. When examined closely, the reasoning presented in the ILO 2002 press release does not measure up to objective scientific scrutiny.

### The factual information

First, it is important to know that the author of the press release, published under ILO's umbrella in his crusade, has based his information on extrapolation of data from a study by researcher Julian Peto (1995). These data have been questioned by a number of reputable scientists. Peto's data concerning death by mesothelioma are also a pure extrapolation.

They are a projection of the number of deaths caused by mesothelioma in a specific country; these data never took into account the difference between the types of asbestos fibres used. Since the publication of this 1995 study, several recent studies have been published, which prove that, with only chrysotile exposure, Peto's data are, in fact, flawed and misleading

Newer scientific studies, dating from 2003, demonstrate that chrysotile asbestos (amphibole asbestos was banned by most countries in the 70s), when used properly, is generally not associated with mesothelioma or other pulmonary diseases. Chrysotile fibres, as they are used today, do not cause and will not cause 100,000 deaths per year. Amphiboles, used in another time, and under lax working conditions of such past, are primarily responsible for the deaths predicted by Peto. The mesothelioma cases appearing today are, foremost, related to amphiboles and are the consequence of an exposure to this type of fibre. The latency period for mesothelioma to occur can take 30 and 40 years. Since amphiboles were essentially banned in the 70s, it is not surprising that mesothelioma cases are now decreasing.

### **Corroborating studies and data**

The study "Changing trends in US mesothelioma incidence" (H.Weill, Medical, Tulane University, New Orleans, JM Hughes, Biostatistics, Tulane University, New Orleans, USA and AM Churg, Pathology, University of British Columbia, Canada) demonstrates that it is an exposure to amphiboles that will cause mesothelioma and not chrysotile. The conclusion of this study is quite straightforward and should be known by ILO:

"Increasing mesothelioma incidence for many years was undoubtedly the result of exposure to asbestos. The high mesothelioma risk was prominently influenced by exposure to amphibole asbestos (crocidolite and amosite), which reached its peak usage in the 1960s and thereafter declined. A differing pattern in some other countries (continuing rise in incidence) may be related to their greater and later amphibole use, particularly crocidolite. The known latency period for the development of this tumour provides biological plausibility for the recent decline

in mesothelioma incidence in the USA. This favourable finding is contrary to a widespread fear that asbestos related health effects will show an inevitable increase in coming years, or even decades."



### **Other recent studies**

In addition to H.Weill, JM Hughes and AM Churg's study, three other studies have been conducted on chrysotile. These studies about biopersistence were authored by toxicologists David Bernstein, Jorg Chevalier, Paul Smith and Rick Rogers (2003, 2004 and 2005). They stipulate:

"Taken in context with the scientific literature to date, this report provides new robust data that clearly support the difference seen epidemiologically between chrysotile and amphibole asbestos" (The Biopersistence of Canadian Chrysotile Asbestos Following Inhalation, November 2003 and The Biopersistence of Brazilian Chrysotile Asbestos Following Inhalation, 2004).

"As Calidria chrysotile (USA) has been certified to have no tremolite fibre, the results of the current study together with the results from toxicological and epidemiological studies indicate that this fibre is not associated with lung disease" (Comparison of Calidria Chrysotile Asbestos to Pure Tremolite: Inhalation Biopersistence and Histopathology Following Short-Term Exposure, December 2003).

“These results support the evidence presented by McDonald and McDonald (1997) that the chrysotile fibres are rapidly cleared from the lung in marked contrast to amphibole fibres which persist” (Biopersistence, 2003 and 2004).

And, there is a 2003 study entitled “Environmental and Occupational Health Hazards Associated with the Presence of Asbestos in Brake Linings and Pads (1900 to present): a “State-of-the-Art” Review,” authored by Dennis J. Paustenbach, Brent L. Finley, Elizabeth T. Lu, Gregory P. Brorby and Patrick J. Sheehan. The important conclusion is:

“These studies indicated that these workers were historically exposed to concentrations of chrysotile fibres perhaps 10 to 50 times greater than those of brake mechanics, but the risk of asbestosis, mesothelioma, and lung cancer, if any, was not apparent, except for those workers who had some degree of exposure to amphibole asbestos during their careers.”

The conclusions of the above studies are in stark contrast to Takala’s assertions and Peto’s data. This is why it is so important to update this data. Convention 162 and Recommendation 172, adopted in 1986 by the ILO, are still prevailing for the safe use of chrysotile asbestos and for the ban of amphiboles. Another fact demonstrating that those who are working for a total ban of chrysotile are poorly informed or are maybe seeking such for vested commercial interest.

### **Chrysotile and amphiboles: like night and day, vastly different**

Chrysotile is, like amphiboles, a type of asbestos. Chrysotile is part of the serpentine group whereas tremolite, amosite, crocidolite, actinolite and anthophyllite are part of the amphibole type. The major differences between chrysotile and amphiboles are mainly in their chemical composition, their resistance to acid and their effects on health. Contrary to the amphiboles, after inhalation, chrysotile fibres do not stay in the lungs; they are quickly eliminated. For pulmonary diseases to occur, one needs prolonged exposure to large doses of fibres. Today, chrysotile is the only type of asbestos being commercialized.

### **TARGET MISSED**

General panic concerning asbestos, stirred by ILO’s 2002 press release announcing 100,000 deaths per year, has been quite profitable for lawyers and not quite so for the real victims of asbestos-related disease. Indeed, for several years, the number of legal proceedings supposedly related to asbestos compensation claims, remain ongoing but the basis for these claims is not always crystal-clear.

The foregoing is confirmed in a U.S. study regarding asbestos-related disease compensation by the RAND Institute for Civil Justice. Fortune magazine (September 6<sup>th</sup>, 2004) also writes about this fraud matter in an article by Roger Parloff (Welcome to the New Asbestos Scandal). Mr. Parloff wrote that between the 70s and year 2002 more than 730,000 United States citizens have sought compensation. These claims have cost more than 70 billion\$ to manufacturers and insurance companies.



Researchers have declared that the number of claimants increased rapidly between 1990 and 2002 – by some people without any known disease claiming compensation. According to this study, these frivolous claims account for 90% of the total during this period

Claimants have received around 42 cents for every dollar spent in the asbestos litigation. Defence cost was estimated around 31 cents per dollar and 27 cents to the coffers of lawyers' (and other costs). This sorry situation called the Great Scandal, was covered again in Fortune magazine' article, and also authored by Mr. Parloff (June 13<sup>th</sup>, 2005). Recently, a British newspaper, Daily Mail (June 28<sup>th</sup>, 2005), reported on a legal investigation now in process alleging that some employers, labour people, employees of law firms and enterprises may have supported suspicious requests for compensation. These suspicious requests might represent more than 7.5 billion pounds. It is quite interesting to note that none of the anti-asbestos activists, global union people or Mr. Takala ever publicly commented on this worrisome situation.

We must finally conclude that some people can easily misuse data and produce a rotten situation. This dossier is a clear example proving one should never trust incomplete or biased information which does not quote up-to-date available scientific data. Accuracy and rigorous approaches are necessary when making public declarations. It is our right to demand that everyone should take cognizance of all scientific data, especially recent studies, pertaining to chrysotile.



## Among the best in Brazil

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For the second time, SAMA and MB Ingenieria have been named among Brazil's top 150 companies. According to SAMA's administrators, this excellence is due to the pride of the 582 employees being part of an important group, great camaraderie throughout the company, good benefits, remuneration, ethics, professional development, good communication with the directors and to good policies and human resources practices.

SAMA was recognized among the best even if the enterprise handles a very polemic product, such as chrysotile asbestos. The managers are convinced that SAMA respects all security measures using this mineral. "This is the result of our intensive training courses, 65% of which are subsidized, including courses designated to improve our professional performance," says human resources manager, Americo Ventura.

In order to guarantee such good results in Brazil and abroad, Director, Rubens Rela, mentioned that the formula is to continuously invest quality research. SAMA is one of the first mines in the world to obtain the ISO 9000 (quality) and ISO 14000 (environment) certificates. "One cannot participate in the international market without having quality, efficiency and high productivity," declared Mr. Rela. He also mentioned that they have enough reserves to produce for the next 60 years.

Last year, SAMA exported some 160 thousand tonnes of chrysotile; the company recorded a 15% growth. This was a defining moment in the history of the enterprise. But production and sales are not exclusively bound to the international market; Brazil's home consumption is increasing, regardless of the conflict the mineral encounters in the market-place up against synthetic substitute products. "We know, by experience, how asbestos chrysotile has been used in Brazil and, therefore, we know that it does not represent any problem for people's health," says Rubens Rela.

The SAMA group works with an open-door policy, in order to show to the public the truth regarding chrysotile. "The truth relies on the fact that Brazil has 60% of its roof covered with chrysotile cement tiles, which for more than 50 years have been used without a single case of a health problem. If it would affect health, Brazil would have a phenomenal number of sick people due to asbestos use in tiles," director Rela said.

The fact remains that the international scientific community has demonstrated that the asbestos investigations and research should be dealt with in an isolated form, in other words, separating asbestos amphiboles from chrysotile. This fact supports the results of the study done by Universidad de Campinas (UNICAMP) in Sao Paulo demonstrating that "from 1980 and up to now, there has not been a single case of workers contracting an occupational disease having been involved with chrysotile."

SOURCES: O Popular, September 1<sup>st</sup> 2005, Exame elhores e aiores, July 2005 and Brasil Mineral, March 2005.



## THERE IS NO REAL RISK

### Handling chrysotile-containing gaskets and packing materials is safe.

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In a recently published study on asbestos exposure during disassembly of diesel engines, it is shown that, when following shop-standard procedures, an employee will not experience undue risk from exposure to chrysotile asbestos. The authors of the study, LR Liukonen and FW Weir (Texas, USA), found that all, but one, air monitoring sample reported results below detection limits – even though most of the gaskets contained from 5 to 70% chrysotile.

Below is the abstract of the study entitled: Asbestos exposure from gaskets during disassembly of a medium duty diesel engine:

“Diesel engines have historically used asbestos-containing gaskets leading to concerns of fibre release and mechanic exposure. Other published studies regarding asbestos fibre simulated work conditions; or had other limitations. There are no comprehensive studies relating fibre release from gaskets under conditions similar to those reported herein, evaluating asbestos fibre release from gaskets during all facets of a complete disassembly and cleaning of a medium duty diesel engine in a busy repair and service shop by a journeyman mechanic.

“Asbestos content of all gaskets was identified; all disassembly tasks were described and timed; and personal and area air monitoring was conducted for each task. Twenty-seven of thirty-three gaskets contained chrysotile asbestos in concentrations that ranged from 5 to 70%. All but one air monitoring sample reported results below the limit of reliable detection even though plumes of visible dust were evident during various removal, cleaning and buffing procedures.

“The detection limit for airborne asbestos fibres in this investigation was influenced by the presence of other shop dust in the air. Our investigation demonstrates that using shop-standard procedures in an established repair facility, a journeyman mechanic has very little potential for exposure to airborne asbestos fibres during disassembly of an engine,

approximately 10% or less than that currently considered to be acceptable by Occupational Safety and Health Administration.”

This study is right in line with two others conducted on chrysotile gaskets and packing material. During wet removal from equipment in chemical plants (SK Spence and PS Rocchi – 1996, *Annals of Occupational Hygiene* 40: 583-588), fibre counts were below detection limits. As for the other study (FW Boelter and GN Crawford – American Industrial Hygiene Conference, May 13<sup>th</sup>, 1998, Atlanta), on removal and installation from industrial and maritime fittings, dry methods resulted in counts between 0.05 and 0.1 fibre per millilitres of air; wet methods gave counts below 0.06 f/ml.

SOURCE: *Regulatory Toxicology and Pharmacology*, 2005, Vol. 41, Issue 2, pp 113-121.



## SNAPSHOTS

### \* Black-listed doctors?

On September 12, 2005, Claims Resolution Management Corporation (CRMC) sent a message as follows: The reliability of reports prepared by the doctors and screening facilities listed below has been challenged and is the subject of federal grand jury and congressional investigations into alleged fraud. Effective immediately, CRMC will not accept reports from the following doctors and screening facilities:

- Dr James Ballard, Birmingham, AL ;
- Dr Kevin Cooper, Pascagoula, MS ;
- Dr Todd Coulter, Ocean Springs, MS ;
- Dr Andrew Harron, Kenosha, WS ;
- Dr Ray Harron, Bridgeport, WV ;
- Dr Glynn Hilbun, Moss Point, MS ;
- Dr Barry Levy, Sherborn, MA ;
- Dr George Martindale, Mobile, AL ;
- Dr W.Allen Oaks, Mobile, AL ;
- Healthscreen Inc, Jackson, MS ;
- Occupational Diagnostics, Ocean Springs, MS ;
- N&M Inc, all locations ;
- RTS Inc, Mobile, AL

In the two months since Judge Janis Graham Jack issued her June 30, 2005 order in the silica Multidistrict Litigation, CRMC has received no information or evidence to support continued acceptance of reports prepared by these doctors and facilities.

### FRAUD

July 14, 2005, Wall Street Journal. Texas Federal Judge Janis Graham Jack put the brakes on the silicosis machine with a 249-page decision. In front of her court, she blasted every one of the 10,000 silicosis claims.

She also declared the fraudulent means by which lawyers, doctors and screening companies had manufactured the claims – for money. This former nurse couldn't understand how silicosis, usually causing less than 200 deaths a year in USA, was now causing more than 20,000 in a few states. So she dug deeper.

She later found that more than 65% of the plaintiffs had previously filled an asbestos suit; even if it is clinically almost impossible to have both asbestosis and silicosis. A Manhattan grand jury in New York City is now investigating at least one of the screening companies and subpoenas have gone out to at least two of the doctors.

### \* Juridical inquiry in UK

A miners' union is at the center of a police fraud inquiry into a compensation scheme that is on course to cost taxpayers £7.5 billion. The investigation is focusing on senior officials and employees of the union and the manner of handling claims by examiners. Since then more than 770 000 claims have been registered; so far, 312,000 cases have been settled and £2.5 billions paid in compensation. Solicitors have earned 530 millions pounds. Officers will also look at the relationship between the union and solicitor's firms.

Source: Daily Mail, June 28, 2005, Mr. Chris Brooke

### \* Chrysotile is back

New Delhi. Chrysotile cement products industry is coming out of the darkness. Indeed, and this, by respecting government environmental regulations.

In 2003, a plant at Kondepally received the government approbation to increase its production from 30,000 tons a year to 45,000. Last November, it was Ventakeshwara Pipes turn. Everest Industries, Ramco Industries, GB Asbestos Pipes and Mahadev Asbestos Private also received environmental approvals. This approval means, notably, that the manufacturer will respect a presence of 0.5 fibre per cubic centimeter into the air. Note that all these companies use chrysotile, a naturally occurring mineral with no real harmful effect under controlled use.



**\* Water, a certain poison...!**

Every year, around 8 million people die simply because of the bad quality of drinking water. And, of all these people, 50% are children. The major pathologies related to the consumption of undrinkable water are diarrhoea, cholera, malaria, typhoid, acariasis and trachoma. Chrysotile cement pipe is an answer to this problem, being efficient and cost effective. What are we waiting for?

**\* Chrysotile and amphiboles: A clear distinction**

The Conseil de presse du Québec, an organism in charge of the respect of journalistic norms, following a complaint by Danie Blais, Mouvement ProChrysotile Québécois and the City of Thetford Mines against TV show Zone Libre (Radio-Canada) entitled "L'amiante au banc des accusés" ruled as follows (free translation):

"A clear distinction between the two types of asbestos at the beginning of the story of Zone Libre would certainly have facilitated the comprehension of the viewers who were not familiar with the vocabulary and then would have put an end to the confused aspects of the report. According to the Conseil de presse, the omission constitutes an error."

Reporters Jean-François Lépine, Guy Gendron, producer Christine Gautrin and first director of Content, Public Affairs, Reports and Documentaries from Société Radio-Canada, Jean Pelletier have been blamed for incomplete information given.

The message is, once again, quite clear: there is a real difference between chrysotile and amphiboles, the latter were banned in most countries in the 70s, and this should not be forgotten.



## Considerations on chrysotile industry

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Here are some excerpts from Mr. Jean Garant's article published in CIM Bulletin, Vol 98, No. 1087.

Even in the absence of public health problems related to chrysotile in this country, international lobbies, Europeans in particular, are stronger than need be. Well, it is quite lucrative to sell cellulose fibres doctored with fungicides and fire-screens (composites) of which the long-term effects on health and the environment could very well be disastrous.

People are afraid of asbestos like they are of the Black Death. Many people do not even know how to differentiate between danger and risk. For example, let's mention mercury used in dentistry. The silver-mercury amalgam is still the most durable and firmly adhesive of all dental fillings. Mercury, which counts for 50% of the amalgam, is simply not bio-available anymore, even with the oral enzymes and the aggressive PH. Nevertheless, these amalgams are banned in some Scandinavian countries.

Most of occidental countries directly ban chrysotile use with unrealistic and discriminatory norms or, indirectly, by outrageous insurance premiums and this for all uses of chrysotile. These same countries usually allow the use of carcinogenic products without disturbing anyone's sleep. One has just to think about benzene in gasoline (up to 1.5% depending the time of year).

One should not confuse professional exposure experienced in today's chrysotile extraction and transformation industries. Nowadays' mine workers are exposed to breathable dust concentrations 100 to 1,000 times lower than before 1975. Moreover, friable products containing chrysotile have not been produced for some 25 years.

Recent studies concerning biopersistence have demonstrated that chrysotile is one of the industrial breathable fibres most quickly "digested" by the lungs natural self-defence system. Today, if workers were exposed to very high concentrations of

substitute fibres, equivalent to concentrations known before 1975, cancers would surely appear. We do not see this nowadays due to improved hygiene and health/safety practices. In parallel, even with the still important numbers of deaths caused by car accidents, automobiles are not banned; ABS brakes were installed, inflated cushions, three-point security belts, etc.

According to Jean Garant, in Canada, like elsewhere, there is room for chryso-asphalt, for water and rain chryso-cement pipes and nice roof tiles or high quality chryso-cement decorative products, which would be installed to last. There are a lot of feelings and misperceptions to address for a product, misused in the past. With today's threshold levels, risks, if present, are equivalent or inferior for a multitude of other products and activities.

### Latest important research

The toxicological response of Brazilian chrysotile asbestos : A multi-dose sub-chronic 90-day inhalation toxicology study with 92 day recovery to assess cellular and pathological response.

By: David M. Bernstein, Consultant in Toxicology, Geneva, Switzerland; Rick Rogers, Rogers Imaging Corporation, Needham, Massachusetts, USA; Paul Smith, Research & Consulting Company, Ltd., Füllinsdorf, Switzerland; Jörg Chevalier, EPS Experimental Pathology Services, AG, Muttenz, Switzerland.

Available on our web site: [www.chrysotile.com](http://www.chrysotile.com).

## Let's trap some CO<sub>2</sub>, naturally

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It seems that over the last one hundred years, mining dumps have served, inadvertently, to confine almost 1.8 millions tonnes of carbon dioxide\*. And, this number represents only a small fraction of what may actually be sequestered, estimates Rémi Fiola, of the Laval Université Department of Geology and Geological Engineering. Mr. Rémi Fiola led this study project under the supervision of Professors Georges Beaudoin and Donna Kirkwood.

The magnesium contained in the mining residues naturally reacts with atmospheric carbon dioxide and together they form a mineral called hydromagnesite. It is in this mineral that carbon dioxide is immobilized into perpetuity. .

Author Jean Hamann writes that over the past few years, Prof. Georges Beaudoin has militated in favour of the sequestration of carbon as a complement to the reduction of CO<sub>2</sub> emissions and energy consumption an objective of the Kyoto Agreement. In Quebec, Hamann continues, this third alternative could be using chrysotile mining residue.

"This demonstrates that CO<sub>2</sub> sequestration is produced naturally in chrysotile mines tailings even if the conditions are far from perfect," underlines Georges Beaudoin. "These tailings offer an interesting alternative to proceed to a massive sequestration of CO<sub>2</sub> which is emitted by unpunctual sources, such as automotive pollution." According to researcher Jean Hamann, one will have to identify the physical and biological conditions. And, the professor believes that the reaction might be caused by a bacterium which optimizes the process. After this stage, we will have to expose residues to atmospheric gas to support CO<sub>2</sub> collection. The residues will then be returned into abandoned pits, thus solving visual pollution encountered by mountains of residues and pits.

\*Rémi Fiola evaluated the quantity of sequestered gas with aerial photographs, notably. The mountains of tailings are reckoned to occupy an area of 22.5 square km. By estimating the thickness of the tailings of where a reaction between magnesium and CO<sub>2</sub> and the concentration of inorganic carbon could be possible. R. Fiola estimates that since the opening of the first mine at the end of the 19th century, there is an accumulation of 1.78 million tons of sequestered CO<sub>2</sub>.

SOURCE : Au fil des événements, 28 avril 2005, Pièges à CO<sub>2</sub>. Author: Jean Hamann.



## United Kingdom

### Possible revision of asbestos regulations

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The Health and Safety Executive, U.K., has published a consultative document, "Proposals for Revised Asbestos Regulations and Approved Code of Practice," and is open for comments until the close of the consultation period, February 2006.

In particular, the Health and Safety Executive (HSE) propose (Item 37):

"The only major exception to this is the case of work with decorative textured coatings. New research undertaken by the Health and Safety Laboratory (HSL) indicates that work with most textured decorative coatings containing asbestos gives rise to only very sporadic and low intensity exposure to asbestos fibres. Work with these types of material is currently specifically within the scope of licensing. We propose that, due to the much lower level of risk than previously indicated, most work with textured decorative coatings will no longer require a license contractor, to be notified or the maintenance of medical records."

The HSE are inviting interested persons to answer a number of questions, including:

Which of the following most closely resembles your view of the proposal to remove work with textured decorative coatings from the scope of licensing?

- a. Work with textured decorative coatings should be removed from the scope of the licensing regime and the controls proposed in this consultation document should be required;
- b. Work with textured decorative coatings should remain licensable and the current level of controls required to do the work should be maintained;
- c. Neither the above, another option should be considered (please give details).

