

Rockfort Quarry Peer Reviews Coalition of Concerned Citizens

**Town of Caledon
Public Information Evening
December 10, 2008**



Good evening Mayor Morrison, members of Council and Town of Caledon Staff.

COALITION PEER REVIEWS

PLANNING AND JUSTIFICATION

ADAPTIVE MANAGEMENT PLAN

HYDROGEOLOGY

GROUT CURTAIN

available at:

www.coalitioncaledon.com

My name is Lillie Ann Morris and on behalf of The Coalition of Concerned Citizens I am providing a brief summary of the four peer reviews conducted by consultants engaged by the Coalition. These reviews are available on the Coalition's website.

All four Coalition consultants express serious concerns about the mitigation measures recommend by JDCL's consultants. These measures are supposed to reassure us about the safety of our water – both the quality and the quantity. These measures are supposed to protect the environment and natural heritage. And, these measures are supposed to reassure us that increased truck traffic does not create increased risk for other road users.

COALITION PEER REVIEW

PLANNING AND JUSTIFICATION

**Warren Sorensen
P.Eng, MCIP, RPP
Principal**

**Sorensen Gravely Lowes Planning
Associates Inc.**

Warren Sorensen, principal of Sorensen Gravely Lowes Planning Associates Inc., reviewed the Planning and Justification Report submitted by MHBC Planning on behalf of JDCL.

Sorensen notes that although the MHBC report identifies the applicability of the 1997 Provincial Policy Statement, it does not refer to the definitions of 'adverse effects' and 'sensitive land uses'. Sorensen's opinion is that there should be a more comprehensive evaluation of the adverse effects and compatibility implications due to the degree of change that the quarry operation will cause.

The Impacts Are Too Harmful To Dismiss.



CCC is concerned about threats from the Rockfort Quarry to:

- **Ground & Surface Water**
- **Niagara Escarpment, Paris Moraine & Credit River**
- **Roads/Impacts of Truck Traffic**
- **Wetlands, Fisheries & Wildlife**
- **Recreational Areas for GTA**
- **Cultural Heritage & Rugged Scenic Beauty**

This slide highlights some significant areas of concern.

Sorensen provides the following comment from the MHBC Planning report: “The stated focus of the Planning Justification is potential impacts on the broader community. Impacts on the local community (i.e. residences closer to the site) are addressed through the various site specific studies...”

Although required by OPA 161, Sorensen notes that a Social Impact Study is not among the studies undertaken by JDCL for this proposal. He further states that, “Even if a full complement of individual studies had been undertaken, it is my opinion from a planning and policy perspective that a fully comprehensive, cumulative planning evaluation is required to justify the proposed quarry at this location and satisfy the requirements of the PPS and good planning practice.”

Is this why JDCL didn't bother doing a social impact study?

COALITION PEER REVIEW

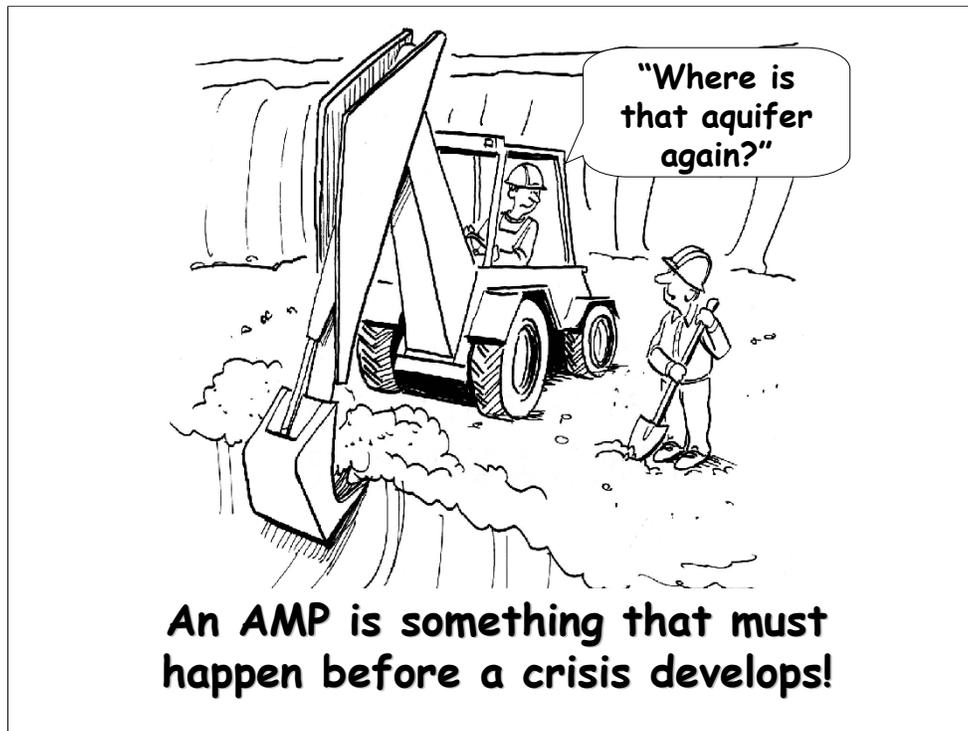
ADAPTIVE MANAGEMENT PLAN (AMP)

**Lorne Greig & Carol Murray
Senior Systems Ecologists and Principals**

ESSA Technologies Ltd.

A peer review of the Rockfort Quarry Adaptive Management Plan (or AMP) has been prepared by Lorne Greig and Carol Murray, Senior Systems Ecologists and principals of ESSA Technologies Ltd. Greig and Murray are both recognized experts in Adaptive Management Plan development and their task was to assess whether the AMP is consistent with current practices of adaptive management and whether an AMP is appropriate for the Rockfort Quarry case.

Greig & Murray provide this definition of AM in their review: “Adaptive Management is a systematic and rigorous approach for learning through deliberately designing and applying management actions as experiments.”



Conestoga-Rovers & Associates, a JDCL consultant, state in their report that “The purpose of the adaptive management approach is to recognize the inherent variability in the hydrologic, hydrogeologic and ecologic conditions.”

Greig & Murray cite this comment and then go on to say that “This is incorrect. Good practice of AM does recognize the inherent variability in ecological systems, and more importantly, explicitly recognizes the uncertainty inherent in the ecosystem response to management. However, recognizing natural variability is not the purpose of AM, which is to learn through careful experimentation how to make management policy and practice more effective in achieving desired objectives (i.e. by reducing uncertainty).”

They conclude that “The adaptive management approach [as proposed] cannot ensure achievement of desired outcomes” and “adaptive management approaches are not advisable when the consequences of failure are irreversible.”

COALITION PEER REVIEWS

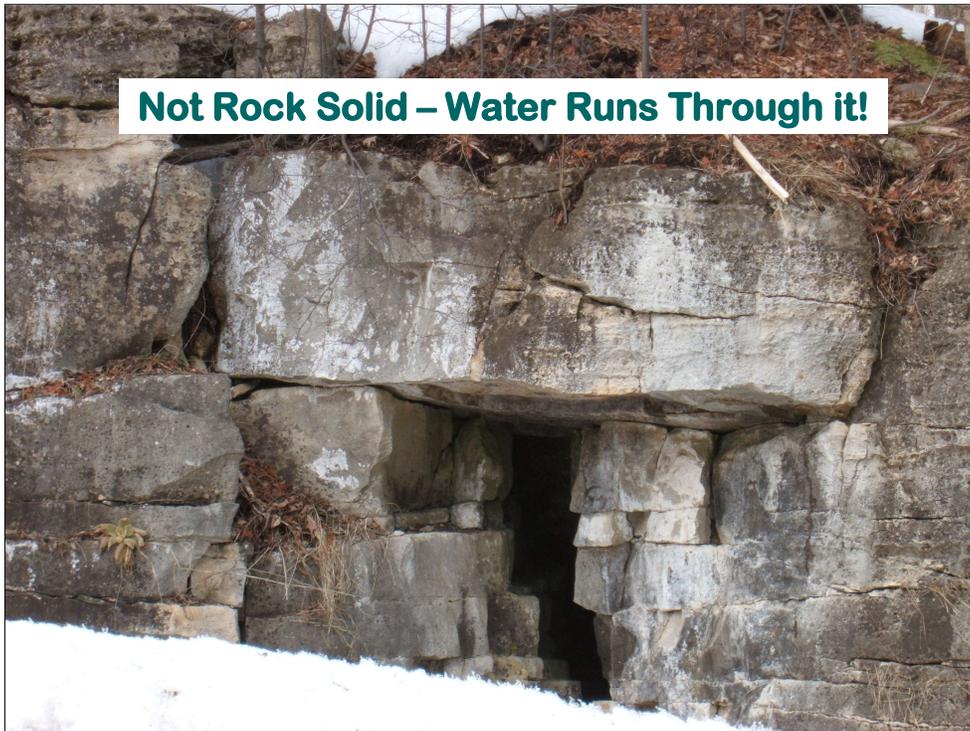
HYDROGEOLOGY

**Dr. Ken Howard
MSc, PhD, PHG, PGeo, CGeol FGS**

**Professor of Hydrogeology,
Dept. of Physical & Environmental Sciences
University of Toronto
&
Groundwater Consultant**

Dr. Ken Howard, is a Professor of Hydrogeology, Dept. of Physical & Environmental Sciences, at the University of Toronto and a world renowned groundwater consultant. Dr. Howard peer reviewed the JDCL Hydrogeological studies conducted in support of the proposed dolostone quarry.

Dr. Howard assessed assumptions made by the proponent and the validity of the interpretations that follow, as well as the models developed by the proponent.



Dr. Howard states that the hydrogeological investigation has been deficient in a number of key areas, notably as they relate to the fractured nature of the bedrock aquifer system and the short-lived response of the aquifer during de-watering and re-watering. He cites the lack of tracer studies that would determine the rapidity with which any groundwater that becomes contaminated will move through the aquifer to a well or spring.

Howard points out that the quantity of data collected does not matter if the interpretation is incorrect. He also says that JDCL's model is fundamentally flawed in that it assumes the bedrock is of a similar consistency all the way through, rather than having fractures throughout as is the case. The proponent's own data and field observations do not support his model, and yet he persists with this fallacious notion.

Howard states that during the study, three groundwater models were developed but none performed adequately. He highlights the strong possibility that remote wells and springs will be just as seriously affected as those in close proximity to the proposed quarry.



Regarding the AMP, Dr. Howard says that the proponent's models are overly simplistic and therefore cannot make the predictions needed. He also states that, "As adopted for the Rockfort Quarry Proposal, the AMP is simply an admission of failure...The AMP is tantamount to saying 'we can't predict what will happen, but when problems occur, we'll find some way of dealing with them.'" His conclusion is that the AMP lacks a sound scientific foundation and is destined to fail.

COALITION PEER REVIEWS

GROUT CURTAIN

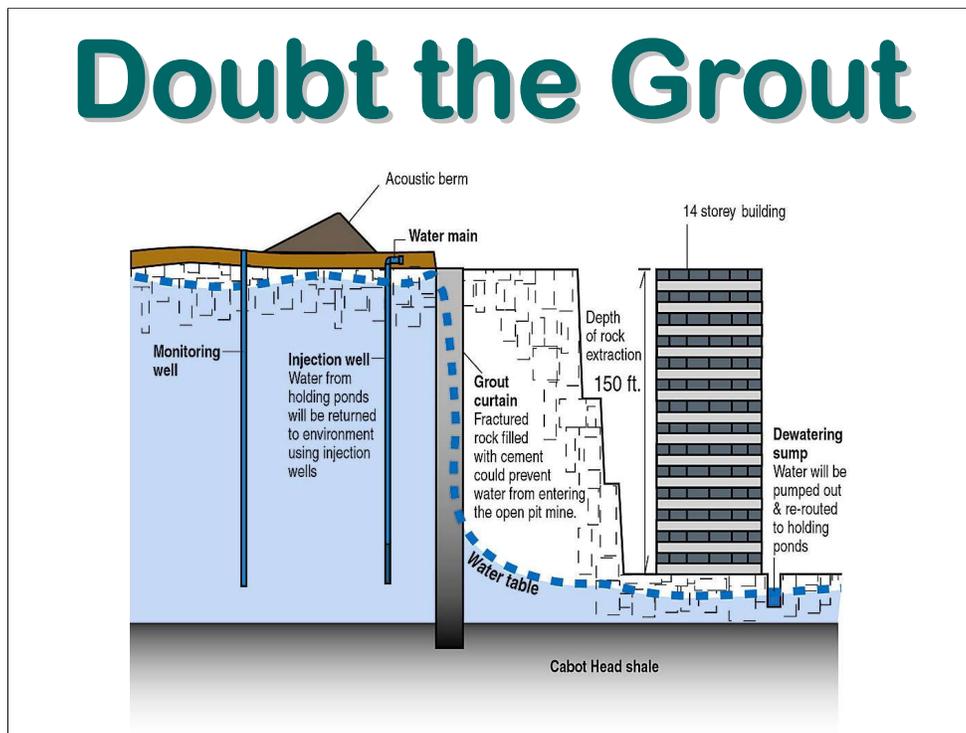
**Alex Naudts
M.A.Sc., P.Eng.
Principal**

ECO Grouting Specialists, Ltd.

Alex Naudts of ECO Grouting Specialists Ltd., a world expert on Grout Curtains, has evaluated the proposed mitigation measures for economic viability and the protection of water resources around the proposed Rockfort Quarry. Naudts has a career of actually building grout curtains in a wide range of conditions around the world, which gives him a unique sense of their costs and physical limitations.

Naudts concludes that, “In order for a technically viable mitigation measure to be considered a credible solution, it [must also] be economically feasible. I have come to the conclusion that no economically viable barrier technologies exist to protect the water resources in the area adjacent to the proposed quarry.” Based on his evaluation, Naudts states that “JDCL stands to lose in excess of \$150 million if he is serious about protecting the water resources while mining the Rockfort quarry.”

Doubt the Grout



A grout curtain involves boring holes into the rock and pumping grout down these holes to fill fissures and cracks in the rock to form a barrier around the proposed quarry site.

Among the issues raised by Naudts in his peer review are:

1. The AMP fails to mention necessary treatment for the water that is to be recharged into the aquifer – and the associated cost thereof, which would be, according to Naudts, at least \$4 million per year for the life of the pit.
2. Only a very preliminary approach to the problems is being considered.
3. The fact that pieces of the grout will inevitably wash out of the curtain and pollute the water system.
4. The cost of pumping the water after treatment into the recharge system will cost JDCL more than \$1450 per hour or \$12.7 million per year.

Economic Assessment For Rockfort Quarry Mitigation Measures To Protect the Aquifer

SCENARIO	Gross revenue from sale of aggregate (not considering the cost of mitigation measures)	Cost of implementing mitigation measure	Net operating profit / loss
Scenario 1	\$96.6 million	\$285.5 million	(\$188.9 million)
Scenario 2	\$96.6 million	\$287 million	(\$190.4 million)
Scenario 3	\$96.6 million	\$259 million	(\$162.4 million)

This chart assumes a profit of \$2.50 per tonne on the aggregate mined to generate \$96.6 million over the duration of the quarry. After taking into account the cost of implementing the mitigation measures to protect the aquifer, the net operating loss would be substantial.

So, based on this information, do we assume that JDCL plans to lose money or do they intend to sacrifice safety?

PEER REVIEW QUOTES

- “destined to fail” (*Howard*)
- “our questions remain unanswered” (*Jagger Hims*)
- “no economically viable barrier technologies exist to protect the water resources” (*Naudts*)
- “our concerns....still remain” (*Golder*)
- “has not been completed” (*Hardy*)
- “does not appear to be realistic” (*MMMGroup*)
- “have not been adequately addressed” (*CVC*)
- “AM approaches are not advisable when the consequences of failure are irreversible” (*Greig*)
- “the area will be less attractive” (*DPRA*)

Included with a copy of my presentation is an overview of what the peer reviewers and consultants have said about the JDCL reports and I'd like to share this brief excerpt from the summary:

What is evident as you read all the reviews and reports is an enduring theme of skepticism and doubt – and time and updates have only raised more questions and cynicism rather than answers and assurances. Following are some comments used by the reviewers to describe the JDCL proposal: (refer to quotes on slide)

This phraseology gives no assurance to the residents and should raise red flags to you, the stewards of our community.

Clear answers to the effects on the ecosystem and the community are owed by this proponent to residents and Council before you should be asked to take a position on such an application. Sadly, this has not occurred. Instead, you are asked to put your faith in a flawed Adaptive Management Plan that cannot ensure achievement of desired outcomes and they will only work out the answers as the development proceeds without any chance for you to review or comment on critical target levels and the final degree of mitigation to be undertaken.

The reviewers submit that this proposal represents a risk of failure that is real, a cost of failure that will be too great and the results of failure that will be unacceptable. Caledon is a beautiful place to live, work and play – let's keep it that way.

If ever there was an application that cried out for rejection – this is it!!

**CCC Peer Reviews
available at**

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THANK YOU

Considering the significant deficiencies cited in the JDCL reports by these expert peer reviewers and the potential risk to the water and the environment, The Coalition of Concerned Citizens respectfully request that Council votes “NO” on the Rockfort Quarry proposal.

THANK YOU!