



May 20, 2009

DELIVERED BY E-MAIL & MAIL

Ms. Melanie Horton
St. Marys Cement Inc (Canada)
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and

Ms. Dianne Schwier
Ministry of Natural Resources
1 Stone Road West
Guelph Ontario
N1G 4Y2

E-mail: MNRFQA@ontario.ca

Dear Ms. Horton and Ms. Schwier,

SUBJECT: St. Marys Cement Inc. (Canada), Application for a Category 2 Class A Quarry License under the *Aggregate Resources Act (ARA)* , Concession 11, Parts of Lots 1, 2, and 3 in the Former Township of East Flamborough, in the City of Hamilton

The City of Hamilton Public Health Services is a member of the City of Hamilton's Combined Aggregate Review Team (CART). Through the CART review process, Public Health Services staff have reviewed and discussed the above noted application, and offer the following comments. The City of Hamilton Public Health Services objects to the quarry license application for the following reasons;

1. The development and operation of a limestone quarry as proposed in the ARA application represents a risk to the quantity and quality of the local groundwater supply that is necessary for potable water uses. Further work is needed to assess these risks in order to develop predictable, reasonable, dependable, and maintainable mitigation strategies, if possible.

A 2008 Ministry of Environment Permit To Take Water (PTTW) and the execution of the related CBM St. Marys Cement Hydrogeological Workplan were to;

- Obtain data to further assess the potential adverse effects on groundwater quantity and quality that might be related to the operation of a quarry, and,
- Determine the feasibility of a proposed Groundwater Recirculation System (GRS).

The CBM St. Marys Hydrogeological Workplan has not been completed; therefore it is possible that the hydrogeological reports necessary to support the CBM St. Marys Cement Aggregate Resources Act Application are not complete.

The City of Hamilton Public Health Services requests the Ministry of Natural Resources to consult with the Ministry of the Environment regarding the completeness of the Level 1 and Level 2 Hydrogeological reports that have accompanied the CBM St. Marys ARA application to determine if additional information is required.

2. The ARA application proposes an Adaptive Management Plan (AMP) that depends on the GRS to manage the dewatering effects on groundwater quality and quantity. Given the proposed size of the quarry, the potential risks to groundwater quality and quantity, and the close proximity of groundwater users, and the sole dependence of the GRS to manage groundwater impacts, a prudent approach would be to require the Applicant to fully ascertain and detail the feasibility of the proposed but unproven/tested GRS before granting a license under the *Aggregate Resources Act*.
3. Detail is lacking regarding the assurance of financial resources to mitigate adverse groundwater impacts or implement groundwater contingencies in the event that CBM St. Marys Cement cannot or will not resolve groundwater problems related to the quarry, or if CBM St. Marys Cement cannot continue operations. Details regarding the estimated costs of operating a GRS should be included in the application, and these costs should be used to calculate a reasonable financial reserve for GRS operation and maintenance costs. CBM St. Marys should provide reasonable financial assurances or reserves in order to ensure that groundwater impacts can be resolved without a burden to the City of Hamilton or the affected groundwater users.
4. Contingency Plans to deal with water well interference need to specify;
 - a. A response time (in hours) within which CBM St. Marys will provide and maintain a potable water supply.
 - b. The parameters and testing schedule to monitor the potability of temporary water supplies.
 - c. How much potable water CBM St. Mary's will provide and maintain during a water well interference situation.
 - d. The duration that a potable water supply will be provided, i.e. what is the definition and duration of "temporary" in Section 7.2.1.
 - e. The process that will be followed in order to deem that a remediated or repaired or deepened water well is potable before it is put back into use.
 - f. A contingency plan specific to the water quantity needs of the Stonebrook Estates Residential Development. The water well that serves this residential development is very close to the proposed quarry. The proposal to use water tanks and truck water to 30 existing homes does not appear to be feasible in the absence of details and the retained services of a water hauler. Additionally, this residential development could grow to 130 residences in the future, which should be included in a more detailed contingency plan.
 - g. Detail regarding temporary water tank construction and materials and how water temperatures will be controlled. Temporary water tanks are typically placed above grade and are exposed to temperatures that promote the growth of micro-organisms. Warm to hot temperatures will render the water unpalatable for drinking purposes. Additionally, the services to provide suitable water tanks needs to be retained in order to assure a timely response and installation.
 - h. Detail regarding retaining the services of qualified personnel that will assure a timely response and installation of a temporary water tank.

- i. The feasibility of deepening shallow or marginal wells. More detail is needed to substantiate the feasibility of this contingency for every water well that has potential to be affected in the absence of the GRS. It is known that at other limestone quarry operations water wells near the quarry have gone dry and well deepening was not feasible. Additionally, more detail is needed regarding; who will take responsibility for implementing this contingency (including costs) and the criteria and process to offer well remediation.
 - j. More detail and financial assurances to ensure the provision of a perpetually potable water supply should the deepening of an affected water well not work. In this situation, the provision of a trucked water supply is not a temporary remedy.
5. The status of the water well serving Stonebrook Estates should be assessed in the context of whether or not the GRS and/or a closely situated lake (quarry end-use) will affect the water treatment and testing requirements under Regulation 170 under the Safe Drinking Water Act. The assessment should be peer reviewed. Should the assessment find that the GRS or the lake pose a reasonable risk of affecting the water treatment and testing requirements for the Stonebrook Estates drinking water system, the Applicant should prepare a plan that will detail the water treatment equipment and processes necessary to meet the requirements of Regulation 170. The plan should be approved by the agency with jurisdiction. The plan should be implemented before granting a license under the *Aggregate Resources Act*.
6. The proposed groundwater quality monitoring plan needs to specify the parameters that will be tested. This is discussed in section 7.1 of Volume 1 the CBM St. Marys Flamborough Quarry Hydrogeological Level 2 Report. The analysis implied by the terms “general chemistry”, “oil and grease” and “BTEX” should be more explicit prior to establishing a monitoring plan. Metals analysis is not mentioned, unless that is included under “general chemistry”. Based on the lab analysis done during the 2008 pump tests, zinc, copper, and cyanide should be included in a groundwater monitoring plan. Please note that that the 2008 pump tests were the initial pump tests out of three proposed pump tests, of which two have not been completed. Therefore, the list of proposed parameters in the proposed groundwater monitoring plan may not be complete.
7. All owners/users of private water wells located within the groundwater zone of influence should be offered water quality testing by the Applicant. The groundwater zone of influence should be the area within which the groundwater levels could be theoretically drawn down by the proposed quarry without the proposed GRS. The limits of this area should be agreed upon by the MNR, the MOE, the Applicant, and the CART hydrogeological peer reviewer. The water testing should be conducted more frequently than the proposed annual sampling and testing schedule. Testing should start before any quarry operations begin. The Applicant should promptly report the lab results to the well owners, along with a clear language interpretation of the results. The monitoring plan should include trigger points that will prompt corrective action and implementation of contingency plans.
8. The proposed groundwater quality monitoring plan lacks detail regarding financial assurances that the groundwater monitoring and response plan will be a long term viable and unhindered activity.
9. The effect that blasting could have on water wells needs to be investigated.
10. The CART hydrogeological peer reviewer (Jagr Hims Limited) poses significant questions and comments in their draft technical review of the CBM St. Marys Flamborough Quarry Hydrogeological Level 2 Report, Volumes 1 and 3 (dated May 12, 2009). The peer reviewer’s comments and questions that pertain to the quality and quantity of groundwater should be resolved before granting a license under the *Aggregate Resources Act*. Additionally, the

hydrogeological peer reviewer raises concerns regarding the theoretical elevation of the surface of the end-use lake, and that the lake level could require a significant berm (or dam?) to prevent flooding of existing nearby residences. The potential for this scenario and the feasibility of a mitigation plan should be further investigated and detailed.

11. In their draft technical review dated May 15, 2009, the CART hydrogeological peer reviewer (Jagr Hims Limited) poses significant questions and comments regarding insufficiencies and inconsistencies of the CBM St. Marys Flamborough Quarry Volume 2 - Groundwater Flow Model. The peer reviewer's comments and questions need to be resolved before evaluation of the potential groundwater impacts due to the proposed quarry can be completed. The hydrogeological peer reviewer's questions and comments regarding insufficiencies and inconsistencies of the CBM St. Marys Flamborough Quarry Volume 2 - Groundwater Flow Model should be resolved before a license is granted under the *Aggregate Resources Act*.
12. The potential impact of the proposed quarry on the Carlisle Municipal Water Supply needs to be agreed upon by the Ministry of Environment, the Ministry of Natural Resources, the Applicant, and the City of Hamilton. Any potential adverse impact to the Carlisle Municipal Water Supply regarding groundwater quality, quantity, or regarding any requirement under the Safe Drinking Water Act and Regulations thereunder should be resolved or mitigated before a license is granted under the *Aggregate Resources Act*.

I trust these comments are of assistance. If you require further clarification please feel free to contact Eric Mathews, Manager of the Safe Water Program at 905-546-2424 ext 2186.

All of which is respectfully submitted.

Sincerely,

Elizabeth Richardson, MD, MHSc, FRCPC
Medical Officer of Health
City of Hamilton

cc (via email) Heather Travis, City of Hamilton
Dr. Robert Nosal, Halton Region
Members of the City of Hamilton Board of Health
Bill Bardswick, Ontario Ministry of the Environment