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File: C14-60/7/08013

July 12, 2010

Jeremy Vink
Senior Planner
Township of Woolwich
24 Church St. West, P.O. Box 158
Elmira, ON N3B 2Z6

Dear Mr. Vink:

**Re: Zone Change Application 13/2008- UPDATED COMMENTS
Ivan Martin and Grant Bauman
6225 and 6329 Middlebrook Road
TOWNSHIP OF WOOLWICH**

Hydrogeology

WESA Inc. (WESA) was retained by the Regional Municipality of Waterloo (RMOW) to conduct a technical review of the hydrogeological aspects of the proposed Martin Pit Expansion on the sand and gravel pit located at 6226 Middlebrook Road within the Township of Woolwich. It is our understanding that D & J Lockhart Excavators Ltd. has submitted an application for a Class 'A' License for a 9.73 ha licensed area operation limited to 1.5 m above the water table. An extraction rate of up to 150,000 tonnes per year is proposed. The following documents were reviewed by WESA:

- ARL Groundwater Resources Ltd. (ARL) letter dated March 4, 2008 on water table conditions.
- ARL Ltd. letter dated June 17, 2008 which provides clarification on the March 4, 2008 letter.
- ARL letter dated December 3, 2008 on surface water drainage and wetlands.
- ARL letter dated May 8, 2010 that provides further information on private wells and proposed monitoring.
- Dance Environmental Inc. letter dated December 1, 2008 on plant species in the wetland.
- Ministry of Natural Resources (MNR) comments in letters dated October 20, 2008 and April 9, 2009.
- Grand River Conservation Authority (GRCA) comments in a letter dated October 2, 2009 and an email dated February 26, 2009.
- Gibson Consulting Services (GCS) letter dated November 20, 2008 to address the GRCA's comments.

- Site plans (Existing Features, Operational Plan, Progressive & Final Rehabilitation Plan) prepared by GCS for D & J Lockhart Excavators Ltd. dated September 5, 2008. An updated Operational Plan (May 25, 2009) was also provided.
- Regional Municipality of Waterloo draft Guidelines for Hydrogeological Studies for Mineral Aggregate Resource Extraction Projects (i.e. the Guidelines).
- Regional Municipality of Waterloo Official Policies Plan.

INFORMATION REVIEW

The information provided includes a preliminary background review of the area geology, proposed water table elevations, subsequent base extraction elevations and a proposed monitoring program. In addition GCS and ARL met with WESA to provide some of the review material that was not previously sent to WESA, to discuss the hydrogeological aspects of the application and to summarize the additional material required for WESA to complete our review.

A review of the information has lead to the following comments:

Information has been provided on the domestic water well for the home and farm where the proposed pit expansion is planned. ARL has agreed to collect information on other wells that may exist in the vicinity of the proposed pit. This information has not been provided to date and should be reviewed when available.

ARL does not believe that monitoring wells for long term groundwater monitoring and sampling are unnecessary. WESA is not in agreement with this conclusion. ARL has indicated that the proponent would agree to install monitoring wells as a condition of the site plan. Wording provided by ARL suggests that wells be installed ...“at up to three locations”... “prior to initiating substantial aggregate extraction”. WESA feels that three locations is a minimum and that the wells be installed as soon as possible. Well installation as soon as approval is obtained is recommended to avoid any confusion on the definition of “substantial” extraction.

ARL has suggested that groundwater levels be obtained in the monitoring wells on a monthly basis for two years and then reviewed by a hydrogeologist to determine if the frequency requires adjustment. The data must be reviewed on a continual basis, along with observations from proposed test pits, in order to confirm the water table elevation and subsequent base extraction elevation. A reduction in monitoring frequency is possible but must be taken at least on a quarterly basis as stipulated in the Guidelines.

ARL has suggested that the monitoring wells be sampled initially for water quality indicator parameters and then every five years for the duration of the site's license. WESA suggests that samples be collected twice the first year, as stipulated in the Guidelines, to establish background conditions and any seasonal differences. We are feel that sample collection every five years is too long and suggest that samples be collected every two years for the first five years (i.e. samples collected in years 1, 3 and 5) and then a decision made on whether reducing the frequency to every five years can be made. No permanent petroleum hydrocarbons storage is proposed for the site; however, if portable refueling activities take place on the site, then petroleum hydrocarbon analyses (benzene, toluene, ethylbenzene, xylenes, F1 and F2) would have to be added to the parameter list.

The Operational Plan indicates that sampling results for chemical analysis for any topsoil brought onto the site would be provided to the MNR if requested. All testing results should be sent to the Region and the Township of Woolwich. The Plan indicates that some topsoil may be

brought onto the site for resale purposes. No detrimental environmental impacts are likely to occur from this activity, however, it is not known if there is sufficient space at the site for this activity and the stockpiling of material while still allowing for progressive rehabilitation. Given the size of the site, we do not foresee there being much in the way of progressive rehabilitation but this should be conducted as much as possible.

The 2009 Operational Plan indicates that no operations will take place in the hatched area of the southeast property corner until the water table elevation has been established. One of the monitoring wells may have to be located in this area for this determination. If the water table is high enough to prevent excavation in this area then it should be excluded from the limit of excavation.

General Comments

The applicant should also be advised that any issuance of a building permit for future development on the subject lands will be subject to provisions of Regional Development Charge By-Law 09-024 or any successor thereof.

Please accept this letter as our request for a copy of the decisions and minutes pertaining to the zoning application noted above. Should you require Regional Staff to be in attendance at the meeting or have any questions, please do not hesitate to contact the undersigned.

Sincerely,



Laurel Gibson, M.PL
Planner

cc: Diane Schwier, MNR
cc: Bob Gibson, Gibson Consulting Services