



Region of Waterloo

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File: C14-60/7/08012

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 12/2008- UPDATED COMMENTS  
Harvey Martin  
777 Sandy Hills Drive  
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 777 Sandy Hills Drive within the Township of Woolwich. It is our understanding that NJ Excavating has submitted an application for a Class 'A' License for a 26.9 ha licensed area operation limited to 1.5 m above the water table. An extraction rate of up to 75,000 tonnes per year is proposed. The following documents were reviewed by WESA:

- ARL Groundwater Resources Ltd. (ARL) letter dated December 19, 2006 on water table conditions.
- ARL letter dated August 3, 2007 which provides clarification on the March 4, 2008 letter.
- ARL letters dated July 7 and December 3, 2008 that address agency concerns.
- ARL letter dated May 8, 2010 that provides further information on private wells and proposed monitoring.
- Site plans (Existing Features, Operational Plan, Progressive & Final Rehabilitation Plan and Cross Sections) prepared by Gibson Consulting Services for NJ Excavating dated July 17, 2008 and revised site plan dated January 26, 2010.
- Grand River Conservation Authority (GRCA) comments in letters dated January 28 and September, 2008.
- Ministry of Natural Resources (MNR) comments in letters dated January 17, 2008, September 19, 2008 and April 9, 2009.
- Gibson Consulting Services (GCS) letter dated July 15, 2008 that addresses agency concerns and a letter dated May 14, 2010 that discusses excavation elevations.
- Dance Environmental Inc. letter dated June 25, 2008 that addresses agency concerns.
- 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 and subsequent base extraction elevations. The elevations are based on one set of water levels obtained from 18 test pits excavated on the property in March 2006. It appears the water level data was collected by Gibson Consulting Services and interpreted by ARL.

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

Water levels have been obtained on one occasion from test pits. There is a perched water table as well as a permanent water table. It is not clear from the ARL letters if the recommended base elevation for excavation is based on the perched or permanent water table or a combination of both. 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.

ARL has conducted a private well survey in the immediate vicinity of the property. The survey is adequate and meets the minimum requirements of the Guidelines. It is recommended that as many of these domestic wells as possible be incorporated into the groundwater level monitoring program.

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.

There appears to be a discrepancy between the Operational Plan and the Progressive & Final Rehabilitation Plan for the middle of the site. The Operational Plan indicates a pit elevation of 388 masl while the rehabilitation plan indicates a final elevation of 386 – 387 masl. GSC has indicated that the Operational Plan has not been updated with the most recent information for the middle of site. GSC has also indicated that this update will be completed and included with the final site plans. The plans should be reviewed with the updated information but the final rehabilitation contours utilize the most recent data and do not required updating.

### **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,

A handwritten signature in black ink, appearing to read "L. Gibson".

Laurel Gibson, M.PL  
Planner

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