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Xpresspost and Electronic Mail

Mr. Robert P. Stovel, RPP, P.Ag.
Consulting Planner
Township of East Garafraxa
374028 6th Line
Amaranth, Ontario L9W 0M6

**RE: TRI-COUNTY AGGREGATES LTD. GRAVEL PIT APPLICATIONS
RESPONSES TO STOVEL ASSOCIATES' LEVEL 1/2 NER REVIEW**

Dear Mr. Stovel

We are responding to the comments set out in your December 9th letter to the Township, using the following excerpt from the Word version you provided. Our responses are shown in **red**.

1. PURPOSE OF REPORT

Beacon Environmental ("Beacon") completed a Level 1 and Level 2 Natural Environment Assessment and Natural Heritage Evaluation of the proposed Tri-County Pit. The Beacon report includes a Natural Heritage Evaluation as required under the Greenbelt Plan.

Beacon completed field surveys in 2013 and 2014 to document vegetation, wildlife (including amphibian habitat) and fisheries/aquatic habitat. The subject property plus an additional 120 m around the site were investigated by Beacon.

2. FINDINGS

Beacon summarized the Natural Heritage Features found on the site or on adjacent lands:

Wetlands

There are no significant wetlands on or adjacent to the site. The nearest provincially significant wetland is approximately 560 m to the east of the site.

There is a wetland community mapped offsite, within 120 m of the proposed licence boundary.

Significant Habitat of Endangered and Threatened Species

The following endangered or threatened species were observed on the subject property:

- Bobolink, Bank Swallow and Barn Swallow – Threatened.

Several Bobolink were observed nesting in hay fields on and adjacent to the site on the Kamphuis farm. The Bank Swallow was observed in the southwest portion of the proposed pit, however, Beacon concluded that there is no suitable habitat for this species within the site or adjacent lands. The Barn Swallow was observed in the eastern portion of the site (in an abandoned homestead).

The following endangered or threatened species were observed on offsite and/or adjacent lands:

- Butternut – Endangered.

Fish Habitat

There is one watercourse that provides direct, seasonal fish habitat. This watercourse is located within 120 m of the proposed licence area. There are two on-line ponds located downstream along 18th Line that could potentially support fish habitat.

Significant Woodlands

Beacon states that “...it is possible to consider the woodland within (and on adjacent lands to the north) as a significant forest as the area is greater than 4.0 ha in size and supports a forest community (Sugar Maple – Beech) over 60 years old” (p. 39).

In addition, the northern part of the site and lands within 120 m are within the Natural Heritage System with only a small section of the lands within 120 m overlapping with the woodland. Beacon concludes that the “woodland would meet the definition of significant woodlands based on the Technical Paper 2.” (p. 39).

Significant Valleylands

Beacon states that no significant valley lands occur on or within 120 m of the site.

Provincially Significant Areas of Natural or Scientific Interest (ANSI)

There are no ANSI’s found on or within 120 m of the site.

Significant Wildlife Habitat

Beacon concludes that there are significant wildlife habitats on or within 120 m of the site.

Response: It should be noted that based on the report it was not concluded that there is significant wildlife habitat on or within 120 m of the site. Section 5.8 detailed the assessment of the four principal components of SWH and in the Table 7 – Summary of Level 1 Screening (ARA), there was no SWH identified and no action required for the Level 2 assessment. At the request of the MNRF, subsequent assessment of SWH was completed using the *SWH Ecoregion 6E Criterion Schedule*, which is discussed further below.

3. ASSESSMENT OF IMPACTS

Beacon sets out several mitigation methods to ensure that there will be no net loss of feature or function from the proposed gravel pit. These measures include the following:

- i. Bobolink: a Permit under the Endangered Species Act (“ESA”) from the Ministry of Natural Resources and Forestry (“MNRF”) will be pursued. As part of the Permit process, a mitigation plan will be prepared to ensure a net benefit to the species. A monitoring component will be implemented.
- ii. Barn Swallow: a Permit under the ESA from the MNRF will be pursued.



- iii. Fish Habitat: Beacon states that the *“proposed dewatering activity and associated drawdown of the shallow aquifer system will be a graduated effect (i.e. an increasing drawdown) over the 26 week period from June to November. This corresponds to the period under current conditions when fish are moving downstream out of the reach as surface water flows decrease and the intermittent watercourse flow becomes very low to dry”* (p. 50).
- iv. Significant Woodlands: the woodland is approximately 90 m from the licensed boundary. No direct or indirect impacts on the woodland are anticipated. A 30 m vegetation protection zone will be implemented.

Beacon notes that a monitoring program will be implemented through 2015 and that this program will build upon the data collected during the 2013-14 seasons. The program will include follow-up surveys for Bobolink and Barn Swallow, breeding amphibian surveys, seasonal surveys of stream flow and fish migration, temperature monitoring of surface flows of the tributary of Shaw's Creek, and monitoring of the surface and groundwater interaction and indicator features of adjacent wetland areas.

Beacon provided a response to the MNRF (August 10, 2015). This letter report was copied to the Township November 23, 2015.

The August report from Beacon provides an update of survey activities during the 2015 field season. The results of these investigations are summarized below:

- Bobolink: during the 2015 field season, the subject property was cultivated for common field crops. There were no Bobolink observed from the field during the 2015 breeding bird surveys. Beacon reports that *“any necessary authorizations under the Endangered Species act will be obtained prior to removal of any habitat in this area to facilitate extraction.”*
- Bats: a bat survey was completed in 2015. *“No bats were observed exiting the old farmhouse or from around the shed. The results have determined that the old farmhouse and shed do not provide habitat for bats and there are no requirement under the ESA for the removal of these structures”.*
- Chimney Swift: as part of the 2014 and 2015 breeding bird surveys, as well as during other site surveys, ecologists inspected the farmhouse for aerial observations of the Chimney Swift. No Chimney Swifts were observed. It was determined that the farmhouse did not provide habitat for this species. No requirements under the ESA for removal of this building are required.
- Eastern Wood-pewee (Special Concern): this species was recorded from both the 2014 and 2015 field surveys. Beacon concludes that the Eastern Wood-pewee may qualify as candidate Significant Wildlife Habitat.
- Amphibians: based on the 2014 and 2015 breeding amphibian surveys, three species have been recorded from the wetland/pool in the woodland including Wood Frog, Spring Peeper and Western Chorus Frog. Beacon concludes that the breeding amphibian habitat would qualify as Significant Wildlife Habitat.



At the request of the MNRF, an assessment of SWH under the *SWH Ecoregion 6E Criterion Schedule* was completed. This document provides specific direction to identifying SWH based on given thresholds. This resulted in the identification of SWH for Eastern Wood-pewee and amphibians.

The MNRF provided correspondence to the applicant (October 21, 2015 and December 01, 2015) that indicates that they agree with the findings of the Beacon reporting and the MNRF has no objections to the proposed licence application.

4. SITE PLANS

The plans filed in support of the proposed application (collectively referred to as the “Site Plans”) include the following:

- I. Existing Features Plan
- II. Operational Plan
- III. Progressive and Final Rehabilitation Plan.

On December 2nd, 2015, the applicant circulated revised Site Plans to the Township. These revised Site Plans (and associated documents) remain under review by the Township Peer Review Team at the time of writing this report.

General Comments Related to the Site Plan

Beacon states the key natural environment recommendations are to be incorporated into the Site Plans, including:

- *Topsoil shall be stripped and stored separately and may be stored in berms as outlined on the site plan; used during progressive rehabilitation; and/or stored in temporary berms at the perimeter of the area to be extracted until needed for rehabilitation;*
Please refer to Drawing 2, Note 2.
- *Surface drainage from any disturbed areas shall be directed into the pit. Silt fencing and/or straw bales shall be used as required to prevent sedimentation from leaving the site until vegetation is established;*
The drainage comment has been added to Note 6. For erosion control please refer to Note 7.
- *All berms shall be graded to a maximum of 2:1 slopes. Berms and all areas progressively rehabilitated shall be vegetated with perennial native grass mixture planted in the fall or spring season and shall be maintained and reseed until self-sustaining cover is established; and*
Please refer to Drawing 2, Note 9 for seeding and Note 14 for the conventional, legume-grass interim seed mix. Beacon will issue an addendum, deleting the “perennial native grass” recommendation. Rehabilitation is for agriculture.
- *The 30 m VPZ adjacent to all KNHF and KHF shall be delineated and staked onsite for protection and allowed to regenerate with natural, self-sustaining vegetation.*
Any VPZs are located offsite and accordingly are not delineated.

Beacon should address whether these recommendations need to be incorporated on the Site Plans.



5. AGENCY COMMENTS

The Township received comments from Credit Valley Conservation (“CVC”) on October 9, 2015. CVC indicates the following:

- No concerns with the proposed pit from a Source Water Protection perspective;
- The groundwater monitoring to continue on the site until excavation is complete and that the pit floor will remain 1.5 m above the identified high groundwater level;
- Questions/concerns regarding the runoff calculation;
- CVC requests an opportunity to review and comment on the reports submitted in support of the PTTW application, in order to confirm that the water taking will not result in negative impacts to the watercourse and wetlands;
- CVC recommends that confirmation be received by the Municipality from the Department of Fisheries and Oceans (“DFO”) that the proposal meets all federal requirements with respect to fish habitat;
- CVC recommends that confirmation be received by the Municipality that the proposal meets the requirements of the Province and that there are no implications to the Planning Act applications;
- CVC notes that although there may not be suitable breeding habitat for Bank Swallow on the subject property, all life stages should be considered;
- CVC recommends that the Significant Wildlife Habitat Eco-region Criteria Schedules for Eco-region 6E (2015) be used;
- Two areas of potential concern are: habitat of Eastern Wood Pewee (Species of Concern) and potential that the wetland (unit 6) is significant due to amphibian breeding. The report should identify all significant wildlife habitat, buffers and potential impacts and mitigation measures;
- CVC recommends that the significant woodland, significant wildlife habitat and associated buffers be zoned appropriately; and
- CVC is supportive of working with the proponent and the MNRF for the development of the Restoration Plan as identified on Drawing 3 of 3.

The MNRF provided an objection letter to licence application (correspondence dated June 15, 2015). The MNRF notes the following:

- The need for bat surveys,
- The need for appropriate surveys for the chimney swift,
- The need for a re-assessment of Significant Wildlife Habitat, including targeted bat surveys for cavity trees in the woodlot and in the abandoned house/shed at the old farmstead, assessment of “seasonal concentration of animals” and “specialized wildlife habitat” (including area sensitive forest breeding birds and amphibian breeding habitat) and “species of special concern” (i.e. Eastern Wood-Pewee) criteria.

As previously noted, the MNRF are now satisfied with the proposed pit licence application and have removed their objection.



6. PEER REVIEW ASSESSMENT

The Beacon report represents a substantial undertaking in support of a gravel pit application. Field investigations – vegetation, breeding birds, fisheries, amphibians – were completed at different times of the year over a two-year study timeframe. The report integrates assessment and findings from the Water Resources Assessment (Groundwater Science Corp. 2014). The report acknowledges the need to deal with species covered under the Endangered Species Act.

Additional field surveys were completed in 2015. The Township should be copied with the species inventory data for these surveys.

A summary of the methods and results of the additional 2015 surveys will be attached to Beacon's 2016 addendum.

The applicant should be encouraged to copy the Township with submissions to government agencies (including the MNRF and the CVC). This will ensure that a comprehensive assessment has been completed.

General Comments

Three threatened species were documented on the subject lands, yet only two of these were discussed in the main body of the Beacon report. The threatened Bank Swallow was observed perched in trees on the site and it was assumed that the birds were nesting in an adjacent pit. The species was then dismissed and not discussed any further in the report. Similar to the Barn Swallow, foraging areas are an important feature of Bank Swallow habitat. Draft general habitat descriptions for this species suggest that areas within 500 m of the nesting colony constitute habitat for it. Consequently, portions of the site are probably habitat for the Bank Swallow. Discussion should be provided on the impact that aggregate extraction will have on this species foraging habitat. The proportion of good foraging habitat (hayfields, meadows, marshes, ponds, 16etc.) that the site represents should be determined to see if temporary loss due to aggregate extraction will have an adverse effect on its overall foraging habitat. In this regard, Beacon should address the maximum disturbed area of 40 ha, as set out in the Site Planning Report (Long Environmental, p. 44). There is a possibility that this species will have to be dealt with under the ESA in a similar manner as the Barn Swallow.

The observations of Bank Swallow are described in Section 4.2.1 and 5.3.2 of the report. Nesting habitat for this species consists of lakeshore bluffs, riparian nesting banks and aggregate pits and quarries, where they nest communally. The vertical bank requires suitable habitat (silt-sand layers) for successful burrowing and therefore the nest sites are critical for this species. As discussed in the report there is no nesting habitat on site. Aquatic and wetland habitats are identified as important for foraging as they are a source of aerial insects. These habitat types within the study area, in the north sector of the property will be retained.

Beacon reviewed the MNRF and Ontario Environmental Registry website and a document relating to general habitat descriptions for this species was not found.



The MNRF is the agency responsible for administering the *Endangered Species Act*. The MNRF has reviewed the report and Beacon's ecologists have had discussions with MNRF biologists regarding SAR within the study area. In the agencies commenting letters of June 15, 2015 and October 21, 2015 and during conversations with MNRF staff, the issue of Bank Swallow was not raised. We have, therefore, concluded that the MNRF is satisfied with how this species has been addressed.

The treatment of the Bobolink was inconsistent within the original Beacon report. However, with the completion of the 2015 field surveys, it was confirmed that Bobolink were not present on the subject properties (due to the fact that the onsite fields were cultivated and potential Bobolink habitat was removed). Beacon confirmed that any necessary authorizations under the ESA will be obtained prior to removal of any habitat in this area to facilitate extraction.

The approach for obtaining any necessary authorizations under the ESA relating to Bobolink prior to the removal of habitat was confirmed with the MNRF.

The analysis of potential effects on the Barn Swallow lacks discussion on whether replacement of agricultural land with a pit will affect its foraging habitat significantly. What percentage of the good foraging habitat does the site represent and what will be the quality of the foraging habitat within 200 m of the nest once extraction takes place? Also, the report indicates that habitat for this species can easily be replicated by means of artificial nesting structures and this is typically approved under the ESA by registering the site. It would be useful to demonstrate that there is a location within 1 km where a nesting structure within or adjacent to suitable foraging habitat can be established.

The MNRF comments of June 15, 2015 relating to Barn Swallow reference the Beacon report and state, "*one nest was found and the report acknowledges the need to register any future nest removal activity*". No other questions or concerns regarding this species have been raised by the MNRF. We therefore conclude that the MNRF is satisfied with how this species has been addressed.

While the exact location for construction of the nesting structure has not been confirmed, placement of the structure in close proximity to the watercourse and meadow marsh at the north end of the property would provide for good access to suitable foraging habitat.

Specific Comments Requiring Clarification

In the discussion about birds, there appears to be confusion as to whether Beacon observed a Brown Creeper or a Brown Thrasher. It is initially stated that in the woodland, area-sensitive Brown Creeper was found but later in the same discussion, it is called the Brown Thrasher. Later, Beacon reports that the Brown Creeper is more commonly associated with more open communities with occasional shrubs or trees or agricultural hedgerows surrounded by agricultural lands. This is incorrect as the Brown Creeper inhabits large forested areas, but the habitat description provided is relatively accurate for the Brown Thrasher. It appears most likely that the observers saw a Brown Thrasher as opposed to a Brown Creeper, as it is highly unlikely that one would find a Brown Creeper in a hedgerow in June. Further observations from 2015 by Beacon may clarify this point.



After reviewing the report and field data Beacon has determined that the inclusion of both Brown Creeper and Brown Thrasher in the report was the result of a data entry and reporting error. Brown Creeper, Brown Thrasher and Grasshopper Sparrow (which was also included in the report text) were not observed on, or adjacent, the subject property during the 2014 breeding bird surveys.

Brown Thrasher was observed during the 2015 breeding bird surveys on the morning of May 27th in a hedgerow on the western half of the property. Neither Brown Creeper nor Grasshopper Sparrow were observed.

These comments will be addressed in the Beacon addendum.

The discussion about migratory waterfowl is not definitive: “*unlikely that they meet the Significant Wildlife Habitat guidelines for significance*”. It would have been more useful to present the numbers of waterfowl observed in the fields and relate these to the guidelines and then reach a defensible conclusion.

The *SWH Ecoregion 6E Criterion Schedule* describes waterfowl stopover and staging areas (terrestrial) habitat as Cultural Meadow and Cultural Thickets that have evidence of annual spring flooding from melt water or run-off. It also states that agricultural fields with waste grains (as exist in the study area) are not considered SWH.

As discussed in the Beacon report under Section 4.4, the site is located in the Hillsburgh Sandhills which is composed primarily of coarse-grained sandy material. While the topography of the area is very undulating with several bowl-like depressions, these areas were documented to be dry in the spring of 2014 following a year of heavy snow load conditions. Given the well-drained soils typically associated with aggregate pits, areas with spring flooding in the fields within the site that provide functional habitat for migratory waterfowl is very unlikely.

Table 5, the list of mammals observed, fails to include the snowshoe hare that was recorded during the winter wildlife survey. This list may need to be updated based on the findings of the 2015 field surveys.

Noted. As above, a summary of the methods and results of the additional 2015 surveys will be attached to Beacon’s 2016 addendum.

In the discussion on Significant Wildlife Habitat (“SWH”), Beacon has confirmed that SWH exists adjacent to the subject property. Beacon should confirm if Significant Woodland exists on adjacent lands. These significant natural heritage features, if present, may need to be designated and zoned to ensure protection.

As discussed in Section 5.5 the woodland to the north of the site does qualify as significant. Under the ARA, study requirements are for “potential” features on and within 120 m of the site.



Comments Related to the Site Plan and Planning Applications

The Site Plans indicate that clean, inert fill may be imported to facilitate the establishment of 3:1 slopes along the pit face. Beacon makes no reference to the use of inert fill for rehabilitation purposes. Beacon should address whether the importation of fill will increase the potential for the invasive species, especially in areas next to the sensitive offsite features. In addition, Beacon should address whether the use of inert fill will affect the types of natural species that are to be planted on the site? Are additional specifications for inert fill required to ensure that no net loss/net gain of environmental features and functions occur? Beacon should consider this matter and provide a conclusion as to the appropriateness of fill to be applied to the lands in question.

There are no internal fill slopes adjacent to sensitive offsite features or species. Silt, generated by aggregate washing and imported, inert fill, if applicable, will be used for slope backfill. It is intended that all rehabilitation surfaces will be completed with onsite soils. Also, rehabilitation is for agricultural use rather than natural species, except for a small area around the proposed "wetland pond".

It is noted that the Kamphuis agricultural parcel is an active, livestock farm and has a Nutrient Management Plan ("NMP"). The Tri-County parcel is also an active agricultural parcel that is cultivated for common field crops. Beacon makes no reference to the NMP or to the effect that the active livestock farm and cash crop operation will have on adjacent natural heritage features and/or created features, such as the "wetland pond", "infiltration area" and the created pond on the adjacent Greenwood Pit (Licence No. 10606). Beacon should comment on how normal farming practices (i.e. the spreading of manure, the use of non-native plants, the use of sprays and commercial fertilizers, cropping and cultivation practices) will be compatible with these proposed "naturalized" features.

The current agricultural practices on the lands surrounding the site have been in place for many years. The existing conditions of the natural features immediately north of the site have been surveyed and assessed in detail and there is no evidence of negative effects (i.e., invasive species, grazing pressure, nutrient input) related to agricultural practices. We do not see any relationship for potential impacts of the proposed pit and adjacent ongoing agricultural practices. The wash pond that will be enhanced to a wetland in the north end of the site should only receive surface water input as runoff from frozen ground in winter. Nutrient input, from the adjacent livestock farmland **should not occur**.

The Surficial Soil Report provides tables related to the intended cropping sequence (Table 3; p. 23) and suggested crop types (Table 4; p. 24). Beacon has stated that: "...Berms and all areas progressively rehabilitated shall be vegetated with perennial native grass mixture planted in the fall or spring season" (p. 51). Beacon should comment on the species recommended in the Surficial Soil Report and ensure that there isn't a conflict with respect to the recommended vegetation to be planted.

As advised on page 4, soil surfaces will be seeded with a legume-grass mixture until areas have been rehabilitated for agricultural rehabilitation. The "perennial native grass" reference will be deleted via Beacon's addendum.



Beacon stated that: “...The 30 m VPZ adjacent to all KNHF and KHF shall be delineated and staked onsite for protection and allowed to regenerate with natural, self-sustaining vegetation” (p. 52). These areas appear to be located beyond the limits of the proposed licence limits and the area associated with the OPA and ZBA. Beacon should comment on how this recommendation will be implemented.

Although the 30 m VPZ is outside of the limits of the site, the purpose of the staking and delineation is simply intended to identify the boundary so that natural regeneration can occur. No planting or cultural practices are proposed.

Beacon should provide a list of species, stocking density, sizing requirements and monitoring measures (including the need for watering) to ensure that these plantings are successful. The Township needs to be circulated and provided the opportunity to comment on the re-vegetation and re-forestation plans.

Please refer to Drawing 3, Note E1 which specifies that the restoration plan will be prepared, in consultation with the MNR and CVC prior to final rehabilitation.

Beacon states that the “rehabilitation of the disturbed area of the site will be to a state of equal or greater ecological value with the long-term ecological integrity of the entire site maintained or restored with improvements where possible” (p. 52). Beacon should provide a list of ecological improvements that will occur on the subject property, considering that the site is to be returned to an active farm, and verify that this statement is accurate.

The application of this statement is for the north end of the site only, specific to the 0.6 ha area of the site that is within the Greenbelt NHS and the 0.21 ha of reforestation required under the Greenbelt Plan as described in Section 8.2. The enhancements will include the wash pond(s) being enhanced to wetland and the small, offsite reforestation area. As set out in Note E1, this is consistent with the requirements of the Greenbelt Plan and has received MNR sign - off.

Beacon states that “...upon completion, the wash pond will be enhanced to provide a wetland function” (p. 52). Beacon should provide a detailed planting design and conceptual sketch of this wash pond feature, including detailed contouring and soil treatments. Beacon should also address how the silt from the wash pond will be maintained and stored as part of the aggregate operation. Beacon should determine what wetland functions are intended to be created and assess how the farming operation, including the use of pesticides and fertilizers, will affect these functions.

It is premature to design the concept for creation of a wetland area to be created in 20-30 years. The wash pond(s) will be designed within 2-3 years, as part of the PTTW application. Detailed restoration plans will be prepared, for MNR approval, prior to final rehabilitation.

The Site Plans indicate “refueling will take place with the current stage” (Note 12; Page 2 – Operational Plan). Beacon should ensure that this activity was assessed, especially as it relates to the protection of fish habitat/amphibian habitat and habitat creation.



Beacon should review the revised Site Plans and provide a letter indicating that the Site Plans have been prepared in accordance with the technical recommendations set out in their reporting.

Beacon's proposed addendum will address its review of the site plans including review of the refueling locations. The ARA Prescribe Licence Conditions provide for a Spills Contingency Plan and fuel management in accordance with the Gasoline Handling Act. This is beyond the scope of Beacon's expertise.

Yours very truly,

LONG ENVIRONMENTAL CONSULTANTS INC.



R. J. Long, P. Eng, MCIP, RPP

e.c. Tri-County Aggregates Ltd.
Tri-Kamp Holsteins Inc.
Beacon Environmental

