

September 8, 2008

BEL 208093

The Sarjeant CO. LTD.  
15 Sarjeant Dr.  
Barrie, Ontario L4M 4T2

**Re: Assessment of Vascular Plants Associated with Woodlands – Sarjeant Waverley Pit # 2 Application, Concession 1, Lots 78 and 79, Tiny Township**

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At the request of Sarjeant CO. LTD, Beacon Environmental has undertaken an assessment of the vascular plants in woodlands associated with the lands for which the Sarjeant Waverley Pit # 2 application is currently being reviewed by the Ministry of Natural Resources (MNR) and the Township of Tiny. Specifically, through the natural heritage review process the consultant for the Township has identified that the floristic assessment of the woodlands may not have identified Species at Risk that may potentially occur with respect to vascular plants in the woodlands and that a summer season floristic inventory of the woodlands was needed.

To address this concern, a field survey of the woodlands was undertaken on August 13, 2008 by Mr. Ron Huizer. Two woodlands were surveyed: one located to the west of the French Road Right of Way and one to the east. These woodlands have previously been mapped and identified as Dry-Fresh Sugar Maple Deciduous Forest Type (FOD5-1) following the Ecological Land Classification System for Southern Ontario (Lee et al. 1998). The inventory was conducted by walking the periphery of each unit and crisscrossing back and forth through each unit.

The inventory concentrated on plants (trees, shrubs, grasses, sedges and forbs) that occurred within the forest stands. Inventory of adjacent cultural meadows (CUW1-1) and cultural woodlands (CUW1) was not undertaken. However, invasive field species that occurred inside the forest edge and along logging haul roads found through the forests were recorded. Given the homogeneous nature each forest unit, and the small area to be inventoried, a full day survey effort allowed for a detailed inventory of the vascular plants and it was determined that a one-day survey was sufficient.

The following details Beacon's assessment of the vascular plant community within the two forest units.

A total of 145 species of vascular plants were recorded during the survey and are presented in the attached Appendix. Of these, 115 are native to Ontario, with 30 species being non-native. Twenty three species of tree and 18 species of shrubs were found to occur. Though 20 species of trees were recorded, most species were represented by only a few individual specimens, with much of the forest tree canopy being represented by young Sugar Maple (*Acer saccharum*). This uneven distribution of individual trees for forest tree species indicates that selective harvesting has a long history in the forest stands. Similarly, the number of native interior forest shrubs species was very low, with only six species being represented, including Mountain Honeysuckle (*Lonicera dioica*), Alternate-leaf Dogwood (*Cornus alternifolia*), Smooth Gooseberry (*Ribes hirtellum*), Prickly Gooseberry (*Ribes cynosbati*) and Wild Black Current (*Ribes americanum*). The majority of the shrubs species were represented by species that inhabit forest edge or were found in forest openings associated with timber harvesting.

A total of 104 herbaceous species were recorded. Of the species documented for the forest, many are those that typically inhabit field communities (both native and non-native). This high proportion of invasive field species can be directly attributed to the highly disturbed nature of the forest stands as a result of timber harvesting and the extent of forest edge associated with the forest units. This is particularly true for the western forest unit which has been recently harvested (within the last 2 to 3 years) resulting in haul roads, slash and large openings in the forest canopy. Only 32 species (ferns, sedges, grasses and forbs) were identified that can be considered to represent true interior forest floor flora (for example *Dryopteris carthusiana*, *Oryzopsis asperifolia*, *Carex blanda*, *Carex plantaginea*, *Allium tricoccum*, *Polygonatum pubescens*, *Trillium grandiflorum*, *Uvularia grandiflora*, *Caulophyllum thalictroides*, *Viola canadensis*). For the majority of these species, presences were based on only a few scattered individuals, or one or two small local colonies (i.e. *Anemone acutiloba*).

With respect to species rarity, assessment for the occurrence of Species at Risk was based on a review of species listed under Schedules 1 through 5 of the Endangered Species Act (ESA 2007). Based on this review, one species listed as Endangered, Butternut (*Juglans cinerea*), was found to occur. Two mature trees of this species were found along the eastern most edge of the east forest unit. In addition, three young sapling trees were found in field/forest edge habitat the forest eastern edge. The mature trees are associated with a straight-line row of a mix of species of mature trees, including a number of mature Black Walnut (*Juglans nigra*). This species association and stand pattern strongly suggest that the Butternut were planted on the site along with the Black Walnut to delineate either a property boundary line or for the establishment of hedge rows. No other Species at Risk were found to occur.

With respect to provincial or regional rarity, with exception of Butternut, no provincially rare plant species (Provincially Ranked S1, S2 or S3 - NHIC 2008) were found to occur. In addition, based on

review of Riley *et al.* (1989) no species that are considered to be rare for south central Ontario or Simcoe County were found.

In summary, for the two forest units the occurrence of natural assemblages of native interior forest flora is limited. Though two mature specimens of Butternut were found, the forests do not support local stands of the species. Based on the species present, no significant or unique plant communities were identified. With the exception of Butternut, a common tree species that is considered Endangered as a result of large die-off due to fungal disease, no other Species at Risk was identified to occur. Based on a criterion of floristic composition or plant species rarity, the forest units would not represent significant woodlands in a natural heritage system, however, other criteria for identifying significant woodlands may apply.

I trust this letter meets your present requirements. Should you have any questions or points for discussion, please do not hesitate to contact the undersigned at (905) 201-7622, ext. 224.

Yours Truly,



Ron Huizer  
Principal  
Beacon Environmental

## References

- Endangered Species Act, 2007. Ontario Endangered Species Act, S.O. 2007, Chapter 6, Listed species Schedules 1 through 5.
- Lee, H. T., W. D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998. Ecological Land Classification for Southern Ontario: First Approximation and Its Application. Ontario Ministry of Natural Resources. SCSS Field Guide FG-02. 225 pp.
- NHIC, 2008. Ontario Natural Heritage Information Centre (NHIC), Species lists and provincial rankings.  
Website: [www.mnr.gov.on.ca/MNR/nhic/queries/nhic.mwf](http://www.mnr.gov.on.ca/MNR/nhic/queries/nhic.mwf). Referenced, August 2008.
- Riley, J.L., W.D.Brakowsky, P.W. Ball, C.A. Campbell, W.J. Crins, K.L. McIntosh, S.W. Mckay-Kuja, M.J. Oldham, A.A. Reznicek, D.A. Sutherland, S. Varga, 1989. Distribution of the Vascular Plants of Central Region, Ontario Ministry of Natural Resources, Parks and Recreational Areas Section, Central Region, Richmond Hill.

# Appendix A

## Vascular Plant Species

English Name	Scientific Name	Grank	Srank	Regional Status
<b>HORSETAIL</b>	<b>EQUISETACEAE</b>			
Field Horsetail	<i>Equisetum arvense</i>	G5	S5	-
Dwarf Scouring Rush	<i>Equisetum scirpoides</i>	G5	S5	-
<b>FERN FAMILY</b>	<b>DRYOPTERIDACEAE</b>			
Lady Fern	<i>Athyrium filix-femina var. angustum</i>	G5T5	S5	-
Spinulose Shield Fern	<i>Dryopteris carthusiana</i>	G5	S5	-
Crested Shield-fern	<i>Dryopteris cristata</i>	G5	S5	-
Evergreen Woodfern	<i>Dryopteris intermedia</i>	G5	S5	-
Marginal Wood-fern	<i>Dryopteris marginalis</i>	G5	S5	-
Ostrich Fern	<i>Matteuccia struthiopteris</i>	G5	S5	-
Sensitive Fern	<i>Onoclea sensibilis</i>	G5	S5	-
<b>PINE FAMILY</b>	<b>PINACEAE</b>			
Norway Spruce	<i>Picea abies</i>	G?	SE3	-
Eastern White Pine	<i>Pinus strobus</i>	G5	S5	-
Eastern Hemlock	<i>Tsuga canadensis</i>	G5	S5	-
<b>CEDAR FAMILY</b>	<b>CUPRESSACEAE</b>			
Eastern White Cedar	<i>Thuja occidentalis</i>	G5	S5	-
<b>GRASS FAMILY</b>	<b>POACEAE</b>			
Bearded Shorthusk Grass	<i>Brachyelytrum erectum var. glabratum</i>	G5T?	S4S5	-
Slender Wood Reedgrass	<i>Cinna latifolia</i>	G5	S5	-
Bottlebrush Grass	<i>Elymus hystrix</i>	G5	S5	-
Quackgrass	<i>Elymus repens</i>	G5	SE5	-
Fowl Mana Grass	<i>Glyceria striata var. striata</i>	G5T?	S4S5	-
Tall Millet-grass	<i>Milium effusum</i>	G5	S4S5	-
White-grained Mountain-ricegrass	<i>Oryzopsis asperifolia</i>	G5	S5	-
Meadow Timothy	<i>Phleum pratense</i>	G?	SE5	-
Canada Bluegrass	<i>Poa compressa</i>	G?	S5	-
Purple Oat	<i>Schizachne purpurascens</i>	G5	S5	-
<b>SEDGE FAMILY</b>	<b>CYPERACEAE</b>			
Black Sedge	<i>Carex arctata</i>	G5?	S5	-
Bebb's Sedge	<i>Carex bebbii</i>	G5	S5	-
Woodland Sedge	<i>Carex blanda</i>	G5?	S5	-
Fibrous-root Sedge	<i>Carex communis</i>	G5	S5	-
Fringed Sedge	<i>Carex crinita</i>	G5	S5	-
Graceful Sedge	<i>Carex gracillima</i>	G5	S5	-
Bladder Sedge	<i>Carex intumescens</i>	G5	S5	-

English Name	Scientific Name	Grank	Srank	Regional Status
Loose-flowered Sedge	<i>Carex laxiflora</i>	G5	S5	-
White-tinged Sedge	<i>Carex peckii</i>	G4G5	S5	-
Longstalk Sedge	<i>Carex pedunculata</i>	G5	S5	-
Pennsylvania Sedge	<i>Carex pennsylvanica</i>	G5	S5	-
Plantain-leaved Sedge	<i>Carex plantaginea</i>	G5	S5	-
Rosy Sedge	<i>Carex rosea</i>	G5	S5	-
<b>ARUM FAMILY</b>	<b>ARACEAE</b>			
Jack-in-the-pulpit	<i>Arisaema triphyllum</i>	G5	S5	-
<b>RUSH FAMILY</b>	<b>JUNCACEAE</b>			
Path Rush	<i>Juncus tenuis</i>	G5	S5	-
<b>LILY FAMILY</b>	<b>LILIACEAE</b>			
Small White Leek	<i>Allium tricoccum</i>	G5	S5	-
Yellow Trout-lily	<i>Erythronium americanum</i>	G5	S5	-
Wild-lily-of-the-valley	<i>Maianthemum canadense</i>	G5	S5	-
False Solomon's-seal	<i>Maianthemum racemosum</i>	G5	S5	-
Downy Solomon's-seal	<i>Polygonatum pubescens</i>	G5	S5	-
Ill-scent Trillium	<i>Trillium erectum</i>	G5	S5	-
Large-flower Trillium	<i>Trillium grandiflorum</i>	G5	S5	-
Large-flowered Bellwort	<i>Uvularia grandiflora</i>	G5	S5	-
<b>GREENBRIER FAMILY</b>	<b>SMILACACEAE</b>			
Smooth Herbaceous Greenbrier	<i>Smilax herbacea</i>	G5	S4	-
<b>IRIS FAMILY</b>	<b>IRIDACEAE</b>			
Strict Blue-eyed-grass	<i>Sisyrinchium montanum</i>	G5	S5	-
<b>ORCHID FAMILY</b>	<b>ORCHIDACEAE</b>			
Eastern Helleborine	<i>Epipactis helleborine</i>	G?	SE5	-
<b>WILLOW FAMILY</b>	<b>SALICACEAE</b>			
Balsam Poplar	<i>Populus balsamifera</i>	G5	S5	-
Trembling Aspen	<i>Populus tremuloides</i>	G5	S5	-
<b>WALNUT FAMILY</b>	<b>JUGLANDACEAE</b>			
Butternut	<i>Juglans cinerea</i>	G3G4	S3?	-
Black Walnut	<i>Juglans nigra</i>	G5	S4	-
<b>BIRCH FAMILY</b>	<b>BETULACEAE</b>			
Yellow Birch	<i>Betula alleghaniensis</i>	G5	S5	-
Paper Birch	<i>Betula papyrifera</i>	G5	S5	-
Eastern Hop-hornbeam	<i>Ostrya virginiana</i>	G5	S5	-
<b>BEECH FAMILY</b>	<b>FAGACEAE</b>			
American Beech	<i>Fagus grandifolia</i>	G5	S5	-
Northern Red Oak	<i>Quercus rubra</i>	G5	S5	-
<b>ELM FAMILY</b>	<b>ULMACEAE</b>			
American Elm	<i>Ulmus americana</i>	G5?	S5	-
<b>BIRTHWORT FAMILY</b>	<b>ARISTOLOCHIACEAE</b>			
Canada Wild-ginger	<i>Asarum canadense</i>	G5	S5	-
<b>BUCKWHEAT FAMILY</b>	<b>POLYGONACEAE</b>			
Dock-leaf Smartweed	<i>Polygonum lapathifolium</i>	G5	S5	-

English Name	Scientific Name	Grank	Srank	Regional Status
Bitter Dock	<i>Rumex obtusifolius</i>	G?	SE5	-
<b><u>POKEWEED FAMILY</u></b>	<b><u>PHYTOLACCACEAE</u></b>			
Common Pokeweed	<i>Phytolacca americana</i>	G5	S4	-
<b><u>PINK FAMILY</u></b>	<b><u>CARYOPHYLLACEAE</u></b>			
Common Mouse-ear Chickweed	<i>Cerastium fontanum</i>	G?	SE5	-
<b><u>CROWFOOT FAMILY</u></b>	<b><u>RANUNCULACEAE</u></b>			
White Baneberry	<i>Actaea pachypoda</i>	G5	S5	-
Red Baneberry	<i>Actaea rubra</i>	G5	S5	-
Sharp Lobed Hepatica	<i>Anemone acutiloba</i>	G5	S5	-
Long-fruited Anemone	<i>Anemone cylindrica</i>	G5	S4	-
Wild Columbine	<i>Aquilegia canadensis</i>	G5	S5	-
Kidney-leaved Buttercup	<i>Ranunculus abortivus</i>	G5	S5	-
Tall Butter-cup	<i>Ranunculus acris</i>	G5	SE5	-
Tall Meadow-rue	<i>Thalictrum pubescens</i>	G5	S5	-
<b><u>BARBERRY FAMILY</u></b>	<b><u>BERBERIDACEAE</u></b>			
Blue Cohosh	<i>Caulophyllum thalictroides</i>	G4G5	S5	-
<b><u>FUMITORY FAMILY</u></b>	<b><u>FUMARIACEAE</u></b>			
Squirrel-corn	<i>Dicentra canadensis</i>	G5	S5	-
<b><u>MUSTARD FAMILY</u></b>	<b><u>BRASSICACEAE</u></b>			
Garlic Mustard	<i>Alliaria petiolata</i>	G?	SE5	-
<b><u>SAXIFRAGE FAMILY</u></b>	<b><u>SAXIFRAGACEAE</u></b>			
Heart-leaved Foam-flower	<i>Tiarella cordifolia</i>	G5	S5	-
<b><u>GOOSEBERRY FAMILY</u></b>	<b><u>GROSSULARIACEAE</u></b>			
Wild Black Currant	<i>Ribes americanum</i>	G5	S5	-
Prickly Gooseberry	<i>Ribes cynosbati</i>	G5	S5	-
Smooth Gooseberry	<i>Ribes hirtellum</i>	G5	S5	-
Northern Red Currant	<i>Ribes rubrum</i>	G4G5	SE5	-
<b><u>ROSE FAMILY</u></b>	<b><u>ROSACEAE</u></b>			
Tall Hairy Groovebur	<i>Agrimonia gryposepala</i>	G5	S5	-
Allegheny Service-berry	<i>Amelanchier laevis</i>	G4G5Q	S5	-
Virginia Strawberry	<i>Fragaria virginiana</i>	G5	S5	-
Yellow Avens	<i>Geum aleppicum</i>	G5	S5	-
Common Apple	<i>Malus pumila</i>	G5	SE5	-
Norwegian Cinquefoil	<i>Potentilla norvegica</i>	G5	S5	-
Wild Black Cherry	<i>Prunus serotina</i>	G5	S5	-
Choke Cherry	<i>Prunus virginiana</i>	G5	S5	-
Allegheny Blackberry	<i>Rubus allegheniensis</i>	G5	S5	-
Red Raspberry	<i>Rubus idaeus ssp. melanolasius</i>	G5T5	S5	-
Black Raspberry	<i>Rubus occidentalis</i>	G5	S5	-
European Mountain-ash	<i>Sorbus aucuparia</i>	G5	SE4	-
<b><u>PEA FAMILY</u></b>	<b><u>FABACEAE</u></b>			
Large Tick-trefoil	<i>Desmodium glutinosum</i>	G5	S4	-
Birds-foot Trefoil	<i>Lotus corniculatus</i>	G?	SE5	-
Black Medic	<i>Medicago lupulina</i>	G?	SE5	-

English Name	Scientific Name	Grank	Srank	Regional Status
White Sweet Clover	<i>Melilotus alba</i>	G5	SE5	-
<b>WOOD-SORREL FAMILY</b>	<b><u>OXALIDACEAE</u></b>			
Upright Yellow Wood-sorrel	<i>Oxalis stricta</i>	G5	S5	-
<b>GERANIUM FAMILY</b>	<b><u>GERANIACEAE</u></b>			
Herb-robert	<i>Geranium robertianum</i>	G5	SE5	-
<b>CASHEW FAMILY</b>	<b><u>ANACARDIACEAE</u></b>			
Poison Ivy	<i>Rhus radicans ssp. rydbergii</i>	G5T5	S5	-
Staghorn Sumac	<i>Rhus typhina</i>	G5	S5	-
<b>MAPLE FAMILY</b>	<b><u>ACERACEAE</u></b>			
Sugar Maple	<i>Acer saccharum ssp. saccharum</i>	G5T5	S5	-
<b>IMPATIENS FAMILY</b>	<b><u>BALSAMINACEAE</u></b>			
Spotted Jewel-weed	<i>Impatiens capensis</i>	G5	S5	-
<b>GRAPE FAMILY</b>	<b><u>VITACEAE</u></b>			
Virginia Creeper	<i>Parthenocissus vitacea</i>	G5	S5	-
Riverbank Grape	<i>Vitis riparia</i>	G5	S5	-
<b>LINDEN FAMILY</b>	<b><u>TILIACEAE</u></b>			
American Basswood	<i>Tilia americana</i>	G5	S5	-
<b>CLUSIA FAMILY</b>	<b><u>CLUSIACEAE</u></b>			
A St. John's-wort	<i>Hypericum perforatum</i>	G?	SE5	-
Canada Violet	<i>Viola canadensis</i>	G5	S5	-
<b>VIOLET FAMILY</b>	<b><u>VIOLACEAE</u></b>			
Downy Yellow Violet	<i>Viola pubescens var. pubescens</i>	G5T5	S5	-
<b>EVENING PRIMROSE FAMILY</b>	<b><u>ONAGRACEAE</u></b>			
Southern Broadleaf Enchanter's Nightshade	<i>Circaea lutetiana</i>	G5	S5	-
<b>GINSENG FAMILY</b>	<b><u>ARALIACEAE</u></b>			
Wild Sarsaparilla	<i>Aralia nudicaulis</i>	G5	S5	-
<b>CARROT FAMILY</b>	<b><u>APIACEAE</u></b>			
Hairy Sweet-cicely	<i>Osmorhiza claytonii</i>	G5	S5	-
<b>DOGWOOD FAMILY</b>	<b><u>CORNACEAE</u></b>			
Alternate-leaf Dogwood	<i>Cornus alternifolia</i>	G5	S5	-
<b>OLIVE FAMILY</b>	<b><u>OLEACEAE</u></b>			
White Ash	<i>Fraxinus americana</i>	G5	S5	-
<b>DOGBANE FAMILY</b>	<b><u>APOCYNACEAE</u></b>			
Spreading Dogbane	<i>Apocynum androsaemifolium</i>	G5	S5	-
<b>MILKWEED FAMILY</b>	<b><u>ASCLEPIADACEAE</u></b>			
Kansas Milkweed	<i>Asclepias syriaca</i>	G5	S5	-
<b>WATERLEAF FAMILY</b>	<b><u>HYDROPHYLLACEAE</u></b>			
John's Cabbage	<i>Hydrophyllum virginianum</i>	G5	S5	-
<b>VERVAIN FAMILY</b>	<b><u>VERBENACEAE</u></b>			
White Vervain	<i>Verbena urticifolia</i>	G5	S5	-
<b>MINT FAMILY</b>	<b><u>LAMIACEAE</u></b>			
Common Mother-wort	<i>Leonurus cardiaca</i>	G?	SE5	-
Peppermint	<i>Mentha x piperita</i>	HYB	SE4	-

English Name	Scientific Name	Grank	Srank	Regional Status
Catnip	<i>Nepeta cataria</i>	G?	SE5	-
Self-heal	<i>Prunella vulgaris ssp. lanceolata</i>	G5T?	S5	-
<b><u>NIGHTSHADE FAMILY</u></b>	<b><u>SOLANACEAE</u></b>			
Climbing Nightshade	<i>Solanum dulcamara</i>	G?	SE5	-
<b><u>FIGWORTH FAMILY</u></b>	<b><u>SCROPHULARIACEAE</u></b>			
Great Mullein	<i>Verbascum thapsus</i>	G?	SE5	-
Gypsy-weed	<i>Veronica officinalis</i>	G5	SE5	-
<b><u>BROOM-RAPE FAMILY</u></b>	<b><u>OROBANCHACEAE</u></b>			
Beechdrops	<i>Epifagus virginiana</i>	G5	S5	-
<b><u>PLANTAIN FAMILY</u></b>	<b><u>PLANTAGINACEAE</u></b>			
English Plantain	<i>Plantago lanceolata</i>	G5	SE5	-
Nipple-seed Plantain	<i>Plantago major</i>	G5	SE5	-
<b><u>MADDER FAMILY</u></b>	<b><u>RUBIACEAE</u></b>			
Catchweed Bedstraw	<i>Galium aparine</i>	G5	S5	-
Sweet-scent Bedstraw	<i>Galium triflorum</i>	G5	S5	-
<b><u>HONEYSUCKLE FAMILY</u></b>	<b><u>CAPRIFOLIACEAE</u></b>			
Mountain Honeysuckle	<i>Lonicera dioica</i>	G5	S5	-
Common Elderberry	<i>Sambucus canadensis</i>	G5	S5	-
<b><u>BLUEBELL FAMILY</u></b>	<b><u>CAMPANULACEAE</u></b>			
Indian-tobacco	<i>Lobelia inflata</i>	G5	S5	-
<b><u>ASTER FAMILY</u></b>	<b><u>ASTERACEAE</u></b>			
Seaside Yarrow	<i>Achillea millefolium ssp. lanulosa</i>	G5T5	S5	-
Common Burdock	<i>Arctium minus ssp. minus</i>	G?T?	SE5	-
Creeping Thistle	<i>Cirsium arvense</i>	G?	SE5	-
Bull Thistle	<i>Cirsium vulgare</i>	G5	SE5	-
Philadelphia Fleabane	<i>Erigeron philadelphicus</i>	G5	S5	-
Spotted Joe-pye Weed	<i>Eupatorium maculatum ssp. maculatum</i>	G5T?	S5	-
Orange Hawkweed	<i>Hieracium aurantiacum</i>	G?	SE5	-
Canada Lettuce	<i>Lactuca canadensis</i>	G5	S5	-
Common Nipplewort	<i>Lapsana communis</i>	G?	SE5	-
Canada Goldenrod	<i>Solidago canadensis var. canadensis</i>	G5T?	S5	-
Broad-leaved Goldenrod	<i>Solidago flexicaulis</i>	G5	S5	-
Brown-seed Dandelion	<i>Taraxacum officinale</i>	G5	SE5	-
Colt's Foot	<i>Tussilago farfara</i>	G?	SE5	-