Lawson Bennett Trucking Ltd.
R.R.1 Kentville, NS, Canada
B4N 3V7

ON

Cambridge Aggregate Pit Expansion
Environmental Assessment Registration

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Executive Summary

Lawson Bennett Trucking Ltd. proposes to expand its existing aggregate pit operations in Cambridge, Kings County, Nova Scotia. Lawson Bennett Trucking Ltd. has an agreement with the property owner to excavate sand and gravel from the site (see Appendix I, II, and III). The proposed expansion will begin immediately after Nova Scotia Department of Environment and Labour approval. The project is expected to be sustainable for a period of ten years, with the final reclamation occurring in 2013. The operating schedule will be based on 13 hrs/days, 6 days/week, 52 weeks/year, and environmental conditions permitting.

Proposed project activities will be consistent with current pit activities approved by NSDEL (2002-026026; see Appendix II) and in accordance with Nova Scotia Pit and Quarry Guidelines (NSDEL 1999). The purpose of the aggregate pit expansion is to extract sand for wastewater treatment systems (primarily for the Halifax market) and gravel for road and building construction (primarily for the local market). The proposed aggregate pit expansion is located in Cambridge, Kings County, NS, on lands bordering the south side of Highway #1, and extending toward the South Mountain. The property on which the expansion is to take place is 201 hectares, more or less.

Inasmuch as this proposed aggregate pit is in excess of 4 hectares and as the proponent, Lawson Bennett Trucking Ltd. is required to register this project as a Class I Undertaking according to Part IV of the *Environment Act* and the *Environmental Assessment Regulations* before commencing work on the project. Provincial guidelines to be adhered include the Nova Scotia Pit and Quarry Guidelines (1999). No municipal regulations apply to this project; as an aggregate pit, the activity falls under Provincial authority.

This environment assessment registration evaluates the potential environmental impacts of the project and identifies appropriate mitigation and monitoring to minimize these effects. This document focuses on those features of the environment that have been identified as being of most concern. The following studies/investigations were carried

out to further identify and qualify possible project/environment interactions. The environmental components evaluated in this document include:

- agricultural land;
- rare and sensitive flora;
- rare and sensitive fauna;
- fish and fish habitat;
- ground water and surface water resources;
- archaeological and heritage resources;
- air quality; and,
- socio-economic environment.

The environmental impact of this project will include a loss of terrestrial habitat within the proposed pit footprint. No sensitive and rare floral species were found at the Site or within the active area of the current and proposed pit, save for a species of conservation concern found in a location adjacent to the proposed gravel pit expansion. Furthermore, no rare and sensitive amphibians, reptiles, and mammals were observed during the 2002 and 2003 surveys. However, this Site does includetwo species considered at risk by the Province of Nova Scotia authorities (Vesper Sparrow and Bobolink) and a species considered at risk by the ACCDC (Horned Lark) observed in areas adjacent to the proposed pit expansion. There is also potential for acid rock drainage resulting from this project. Yet, the impacts resulting from this project are not anticipated to be significant. That is, assuming that the mitigative and monitoring measures identified in this document are adhered to and the pit operations follow existing Provincial Regulations and Approvals, no significant adverse residual environmental and socio-economic effects are expected.

1.0 Registration information

Name of Undertaking:	Cambridge Aggregate Pit Expansion
Location:	Cambridge, Kings County, Nova Scotia
Name of Proponent: Postal Address	Lawson Bennett Trucking Ltd. R.R. 1 Kentville, NS, Canada B4N 3V7
Tel:	(902) 678-3320 (902) 679-8614
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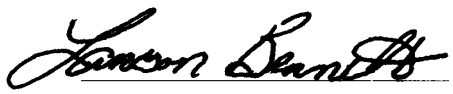
Tel:	(902) 678-3844

Signature of President 

Date: 2003-08-14

3.0 Nature of the Undertaking

3.1 Rationale for the Project

Purpose & Need for the Undertaking

The purpose for the proposed Undertaking/project is to extend the life of existing aggregate pits operated by Lawson Bennett Trucking (LBT) in Cambridge, Kings County, NS. Since 2002, the current aggregate pits have been operating under an approval from Nova Scotia Department of Environment and Labour (NSDEL) (Approval No. 2002-023026, see Appendix I). The areas regulated by the NSDEL approval are either depleted or near depletion. The proposed project expansion is within lands currently utilized by the Proponent.

The sand to be excavated from this Site is an important required component in the construction of sewage systems, and hence plays an important role in safeguarding the environment. The gravel too is a necessary, for maintaining roadways and in building construction.

Source Material

Lawson Bennett Trucking Ltd. anticipates the aggregate from the expanded areas to be of similar quality than is the material currently excavated in the existing aggregate pit areas. Test holes have been dug in the vicinity of the existing pits and throughout the proposed expansion area. The land to the north, east, west and south of the aggregate pit is underlain by sedimentary rock of the "Horton Group." As the aggregate pit expansion proceeds, the proponent may carry out additional testing within the proposed pit area to confirm the existence of suitable source material, if necessary.

3.2 Consideration of Project Alternatives

Other methods for carrying out the Undertaking may include: (1) different access routes to and from the site, and (2) purchasing aggregate from other sources. Alternate access routes are not considered feasible for the following reasons: first, road construction would be prohibitively expensive; second, it would require the

construction of a bridge across a watercourse and a roadway through a small forest, all of which are on privately-owned land; and lastly, nuisance dust and noise may remain a concern. The existing roadway is more than adequate for current and proposed pit activities. With proper road maintenance, the existing road is likely to impact the environment less than it would to construct a new access to the Site (i.e., the surrounding residents, property-owners, biophysical environment).

Sourcing aggregate at an alternative location is not a feasible alternative because the proponent would have to lease or buy property on which to open new pits. The proposed expansion is on property that has and is already exposed to considerable disturbance from farming practices. Further, the proponent has made a considerable investment in securing an agreement with the property owner for aggregate and on roadway improvements at the Site.

Aquiring aggregate of comparable quality and ease is becoming increasingly difficult in Nova Scotia. Previously, a large Nova Scotia aggregate firm rejected this property as a potential site for excavating sand. Test holes showed that the depth of usable material was insufficient for a large operation employing a wash plant. Lawson Bennett Trucking Ltd., on the other hand, is a small firm that can operate efficiently under existing conditions. The proponent will not be blasting or using a wash plant.

4.0 Description of the Undertaking

4.1 Project Location and Scope of Undertaking

Location of Proposed Undertaking

The locations of the current and proposed aggregate pits are in Cambridge, Kings County, NS (see Figure 1 & 2).[1] The proposed pit expansion will be situated in two areas of the property, which includes:

(a) The existing sand pit, which takes in 2.8 hectares (or 7 acres), is located on approximately 121 hectares of farmland in the northern portion of the property. The

[1] Source for map is NSDEL.

proposed sand pit will include and extend beyond the existing sand pit: in the northern portion of the property, the area in solid reddish brown indicates the existing sand pit and the surrounding sandy area indicates the proposed sand pit expansion (see Figure 1). The current and proposed working face or active area of the sand pit is over 100 meters from the nearest foundation or base of a structure, in the northern portion of the property. Similar to the existing pit, it is expected that the working face of the expanded pit will be 5-7 meters in depth.

(b) The existing gravel pit, which takes in 1.2 hectares (or 3 acres), is located on approximately 80 hectares of woodland in the southern portion of the property. The proposed gravel pit will include and extend beyond the existing gravel pit: in the southern portion of the property, the area in solid reddish brown indicates the existing gravel pit and the surrounding sandy area indicates the proposed gravel pit expansion (see Figure 1). The current and proposed working face or active area of the gravel pit is more than ½ kilometre from the nearest foundation or base of a structure, in the southern portion of the property. It is expected that the working face of the proposed gravel pit will as well be 5-7 meters in depth.

The property is bounded to the south by woodland and farmland; to the east by woodland and farmland; to the north by residential property and Highway # 1 and to the east by woodland and farmland. Homes that are adjacent to or in the vicinity of the property predominantly border Highway #1 (see Figure 1, gray indicates farmland and residential property, speckled green indicates woodland, and blue indicates watercourses). All watercourses that run through the property enter from the south.

This Undertaking will be 100 percent privately funded. A copy of the Deed for this property (see Appendix I), and the current operating agreement is included (see Appendix II).

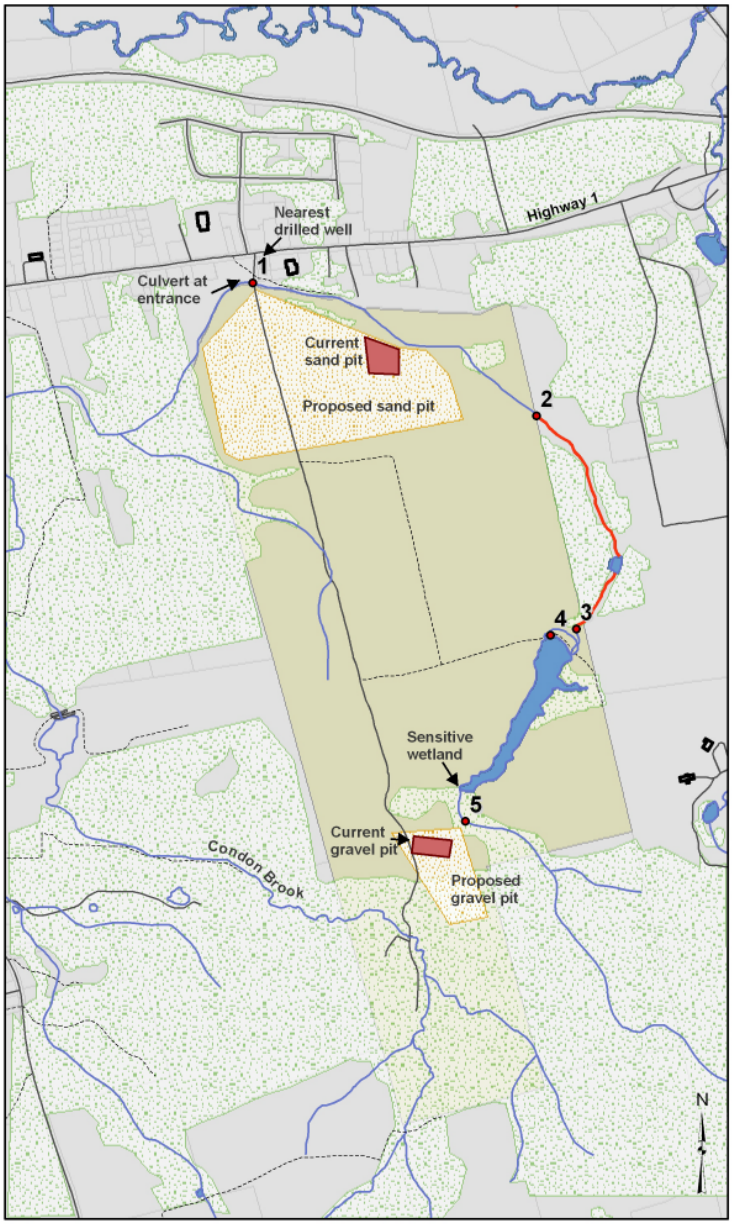

Nearest drilled well
Highway 1
Culvert at entrance
1
Current sand pit
Proposed sand pit
2
3
4
Sensitive wetland
5
Current gravel pit
Proposed gravel pit
Condon Brook
N
0
500
Meters

Figure 1

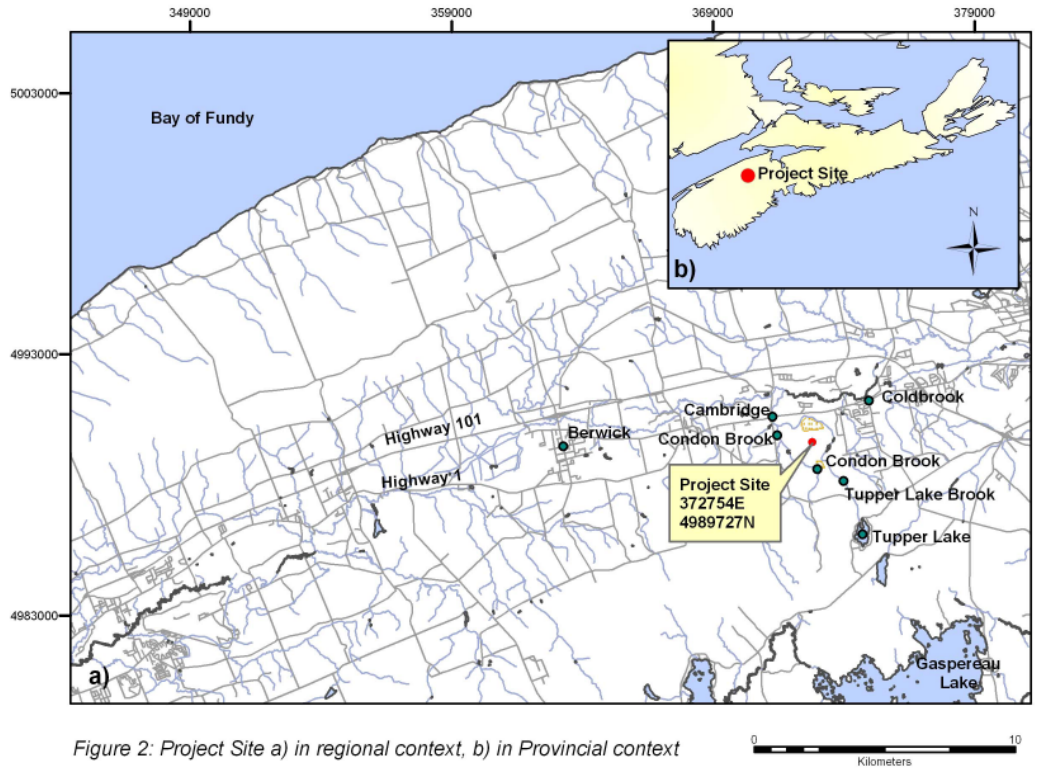


Figure 2: Project Site a) in regional context, b) in Provincial context

Scope of Proposed Undertaking

Lawson Bennett Trucking Ltd. proposes to expand the scope of the existing sand pit in stages, as required. Each stage of the expansion will take in approximately 3 hectares, more or less. As the working face moves forward and the sand pit nears depletion, another area will be prepared for excavation. The former will then be reclaimed and put back into agricultural production. At completion, the sand pit footprint will take in 30 hectares, more or less. This portion of the expansion is expected to yield 900,000 tonnes of sand.

Similarly, Lawson Bennett Trucking Ltd. proposes to expand the scope of its existing gravel in stages, as required. As the working face moves forward and the gravel pit nears depletion, another area will be prepared for excavation. The former will then be reclaimed and be allowed to regenerate into a forest once again—this area has little potential for agricultural production. At completion, the gravel pit footprint will take

in 7.5 hectares, more or less. This portion of the expansion is expected to yield 300,000 tonnes of gravel.

The estimated production of aggregate from current operations will be 60,000 and 30,000 tonnes of sand and gravel respectively (i.e., July 2002 to July 2003). The expansion is expected to realize comparable levels of production. There will be no changes in the activity associated with the proposed excavation of aggregate from the expanded area. However, amendments to the existing "Industrial Approval" for existing pit operations is are required to reflect the changes in the existing footprint (see Appendix III).

4.2 Project Schedule

The proposed expansion is scheduled to begin immediately after receiving NSDEL approval. The project is designed to proceed in stages: as each portion of land prepared and then excavated, another comparable size of land will be prepared for future excavation. Nonetheless, the area being prepared (i.e., topsoil removed or grubbed and cleared) in any given year is only warranted if the area being excavated nears resource depletion (see Table 1)

Table 1 Project Schedule

Year	Sand Pit preparation	Gravel Pit preparation	Sand Pit reclamation	Gravel Pit reclamation
2003	3.0 ha	3.5 ha		
2004	3.0 ha		Existing pit	Existing pit
2005	3.0 ha		3.0 ha	1-1.2 ha
2006	3.0 ha		3.0 ha	1-1.2 ha
2007	3.0 ha	4.0 ha	3.0 ha	1-1.2 ha
2008	3.0 ha		3.0 ha	1-1.2 ha
2009	3.0 ha		3.0 ha	1-1.2 ha
2010	3.0 ha		3.0 ha	1-1.2 ha
2011	3.0 ha		3.0 ha	1-1.2 ha
2012	3.0 ha		3.0 ha	
2013	Remaining area		Remaining area	Remaining area

The numbers in the above table columns are approximations only. At present extraction levels, operations are expected to be sustainable for 10 years. The owner does not

wish to expand the size Lawson Bennett Trucking Ltd nor radically increase the yearly tonnage of aggregate excavated on the property.

4.3 Project Operations

The operating schedule will be similar to current pit operations—13 hours/day, 6 days/week, 52 weeks/year (i.e., subject to environmental factors). It is likely that weather conditions will restrict the proposed pit operations in the fall, winter, and spring. Activity at the site is expected to begin at 6:00 a.m. and draw to a close at 7:00 p.m. An occasional truck may arrive at the Site before 6:00 a.m. or after 7:00 p.m. or haul aggregate from the Site on Sunday. Such occurrences will be rare and only the case where circumstances force construction firms to operate on weekends. The proposed project activities will be consistent with current pit operations approved by NSDEL, Approval No. 2002-023026 (for Terms and Conditions, see Appendix III) and in accordance with the Nova Scotia Pit and Quarry Guidelines (NSDEL 1999).

Processing and stockpiling areas will be kept within the active area of the pit and thus resemble current activity. No blasting or wash operations are associated with the proposed expansion.

4.4 Site Preparation & Reclamation Procedures

Gravel Pit Procedure

In preparation for the proposed gravel pit expansion, trees from the forested area will be harvested by the property owner. The proposed site will then be cleared and grubbed using a Caterpillar D6C bulldozer and a Caterpillar 320 excavator. The resulting topsoil and brush will be windrowed to the north and west of the proposed gravel pit, but within the active area of the pit. Here the material will be left to decay for reclamation and will as well serve as a buffer to safeguard against potential erosion and sedimentation of the irrigation pond and the Tupper Lake Brook. The windrows will be seeded with grass seed to stabilize the soil, to control erosion and sedimentation.

Initially, clearing and grubbing activities will take in an area that will allow for a three-year crushing season or approximately 3.5 hectares. As each new area is opened up, excavation will be limited to approximately 1-1.2 ha. In the interim, the area grubbed and cleared, but not actively excavated, will be seeded with grass seed to control erosion and sedimentation. In the following year a comparable excavated area will be reclaimed. This approach is intended to minimize the scope of pre-excavation clearing and grubbing and prevent long-term soil exposure of the soil thereby reducing the risk of wind and water erosion, and sedimentation of watercourses. The excavation will not go below the water table as the working face of the gravel pit will be approximately 5-7 meters in depth.

At the gravel pit, a Caterpillar D6C bulldozer loosens the aggregate along the pit face. The quarried material is then removed using rubber-tired loaders (i.e., Case 721B loader, 3.5-yd. bucket, Caterpillar 936 loader, 3.0-yard bucket. Rubber-tired loaders feed the excavated material into an Austin-Western jaw and roller crusher. The processed aggregate will be stockpiled within the active area of the pit using rubber-tired loaders. The large rocks, six inch or larger, will be screened out and placed in the bottom of the pit. The active area of the expanded pit will take in approximately 3.5 hectares of land, in various stages of extraction or reclamation.

Gravel Pit Reclamation

As the working face of the gravel pit moves forward, the reclamation process will follow in stages on roughly a one to one basis. Once the aggregate is excavated, the hollowed out area will be graded to a slow incline of one meter of slope for every 3 meters, to minimize potential soil erosion from precipitation and/or runoff. During reclamation, the remaining soil within the pit footprint will be mixed with the stockpiled topsoil and decayed brush. This mixture will then be spread over the excavated pit area and allowed to regenerate into a forest once again. In the interim, the area will be seeded to stabilize the area and hence minimize potential soil erosion. Past experience suggests that enough topsoil will be available to provide approximately 30 centimeters or more of productive cover within the pit footprint.

Sand Pit Procedure

In preparation for the proposed sand pit expansion, the agricultural land will be sprayed with Round Up at the label rates for plant material. Then, using a Caterpillar D6C bulldozer, all existing topsoil, crop residue or weeds will be removed from the proposed site area and placed in small piles or windrows within the active area of the pit close to the reclamation Site or used immediately to reclaim an existing excavated site (see agricultural assessment). If stockpiling occurs, the piles or windrows will be seeded with grass seed to prevent long-term soil exposure thereby reducing risk of wind and water erosion and sedimentation. Windrowing will help to minimize noise from pit operations and improve the aesthetic features of the site by obstructing the view of the pit.

At the sand pit, the quarried material is excavated using rubber-tired loaders. The quarried material is stockpiled within the pit area using a Power Screen Radial Stacker and Conveyor. During excavation, 20 centimeters or more of sand will be left to cover the clay on the pit floor to lessen the potential for standing water and muddy working conditions. The excavation will not go below the water table as the working face of the proposed sand pit is expected to be approximately 5-7 meters in depth.

Sand Pit Reclamation

As the working face of the sand pit moves forward, the reclamation process will follow on roughly a one to one basis. During reclamation, the topsoil from the new site will be used immediately to reclaim an existing excavated site. Thirty centimeters or more of subsoil materials will be left to cover the clay layer in the bottom of the excavated pit. The reclaimed area will be graded to a gradual slope of 15 cm every 30 meters, to allow for excess surface water to leave the field area. The soil within the footprint of the pit will be tested for compaction before reclamation to determine the extent of the compaction (i.e., if action should taken) and for nutrients after reclamation to determine the appropriate inputs for optimal plant growth.
The piles or windrowed topsoil will be pushed over the pit floor. Past experience suggests that enough topsoil will be available to provide approximately 60-90

centimeters of cover within the pit footprint. In all, the footprint of the sand pit will take in approximately 6-8 hectares of land in various stages reclamation or excavation.

Construction of a building/structure will not be part of this project.

Transportation of aggregate

All excavated and processed aggregate will be hauled from the Site using tandem and tri-axle trailer trucks for transport to end-users, by both the proponent and the customers. Up to 40 trucks will be traveling to and from the site each day, market and weather conditions permitting. Most of the trucks hauling from the site will travel along Highway #1 to access Highway 101 in Coldbrook (see Figure 2). The entrance/access to the project Site leads directly onto Highway #1 and is 4 kilometres from Highway 101. Highway #1 does not have seasonal weight restrictions. No additional access roads are required for the project.

Although the proposed gravel pit and sand pit are in separate locations of the property, the active area of the proposed pits will adhere to the following:

Separation Distances

a) Lawson Bennett Trucking will not locate the Active Area of the pit within:

   i) 30 m of the boundary of a public or common highway
   ii) 30 m of the bank of any watercourse or ordinary high water mark
   iii) 30 m of the boundary of the pit property

b) Lawson Bennett Trucking will not locate the excavation "Working Face" of the pit within:

   i) 30 m of the boundary of a public or common highway
   ii) 30 m of the bank of any watercourse or ordinary high water mark
   iii) 90 m of the foundation or base of a structure located off site
   iv) 15 m of the property boundary when a structure on the abutting property is not involved

Site Specific Conditions

(a) The boundaries of the Site will be cut out and kept reasonably clear of new growth and the corner boundaries shall be clearly marked with permanent markers no less than four feet high.
(b) No topsoil shall be removed from the site. It shall be stockpiled for use in rehabilitating the site.

4.4.1 Mitigation Measures and Contingency Planning

Effluents and Emissions

Air Quality Impacts

Nuisance dust is a potential concern at the Site. Dust is generated by the wind traveling across the open fields, excavation operations, and truck traffic travelling on the roadway to the aggregate pits. At the aggregate pits, dust is also generated during excavation and crushing, but this is minimal; further, crushing takes place within a wooded area more than ½ kilometres from the nearest residence. Most of the dust is generated by trucks hauling aggregate. A roadway runs the entire length of the property, connecting Highway #1 with the aggregate pits (see Figure 1).

To suppress dust on the access roadways at the Site, the proponent uses calcium chloride. Calcium chloride is widely used as a dust suppressant. When necessary, a layer of stone will as well be spread over the roadways to limit dust generation. To further mitigate potential dust transmission, the proponent proposes to plant fast-growing poplar trees at the northern edge of the property, between the proposed sand pit area and the Tupper Lake Brook (see Figure 1). Doing so will also contribute to the aesthetic quality of the Site.

Under no circumstances will used-oil be used for dust suppression. The proponent will adhere to particulate emissions as is outlined in the Terms and Conditions under Approval No. 2002-023026 for current pit activities (see Appendix III).

Noise Impacts

The potential for noise impacts on residents and wildlife in and adjacent to the Site is a real concern to Lawson Bennett Trucking Ltd. The sources of noise connected with this project are trucks traveling to and from the Site, and equipment working at the Site, especially the crusher operating at the gravel pit. To mitigate increased noise levels from pit operations the proponent will maintain road quality, plant a row of trees between the proposed sand pit expansion and the Tupper Lake Brook to serve as noise buffer. Noise from crushing operations will be minimal as cushing operation will only take place on a periodic basic—roughly two weeks per month. Moreover, noise from crushing operations is buffer by surrounding secondary forest and the gravel pit is more than ½ kilometer from the nearest home. Nonetheless, the proponent will adhere to sound levels guidelines that are outlined in the Terms and Conditions under Approval No. 2002-023026 for current pit activities (see Appendix III).

Erosion and Sediment Impacts

With the disruption of the soils and grubbing and clearing activities, the potential for soil erosion and sedimentation of watercourses is a real concern. Lawson Bennett Trucking Ltd. will rely on three basic rules for erosion and sediment control:

1. Soil stabilization;
2. Runoff control; and
3. Sediment control.

Based on two summers of experience at the Site, runoff from precipitation and surface water is not expected to be a big worry. Nonetheless, the Nova Scotia Department of the Environment "Erosion and Sedimentation Control Handbook for Construction Sites" will serve as the reference document for all erosion control measures. The following site design, management, and maintenance principles will be implemented at all pit sites. The proponent will make an effort to:

1. Preserve and protect areas of natural vegetation on the site.
2. Take special precautions to prevent damages that could result from project activity adjacent to watercourses and wetlands by maintaining a 30 m buffer between the active area of the pit and the bank of any watercourse or ordinary high water mark.
3. Minimize the extent and duration of the area exposed at one time by reclaiming the excavated Site in a timely manner.

4. Apply temporary erosion control practices as soon as possible to stabilize exposed soils and prevent on-site damage such as sediment basins or traps, filter barriers, diversions, and perimeter control practices prior to Site clearing, grubbing and grading to protect the disturbed area from off-site and onsite runoff and to prevent sedimentation damage to areas below the development site.
5. Keep runoff velocities low and retain runoff within the active area of the site, as much as possible.
6. Prevent sediment from being tracked onto public or private roadways by maintaining road quality with gravel.
7. Implement final grading and install permanent vegetation on disturbed areas as soon as possible after excavation.
8. Follow up with a thorough inspection and maintenance, if necessary of the Site upon decommissioning.[2]

Runoff at the proposed pits will be controlled within the active area of the proposed pits using the aforementioned proper erosion and sedimentation control measures. Runoff will be, for the most part, allowed to evaporate or infiltrate into the ground. The soil at the Site has low water holding capacity and hence it allows water to move rapidly. If necessary, containment areas for runoff will be constructed and properly maintained. Standing water will be controlled by leaving enough sand within the pit areas and in the containment areas to take up excess water.

Hazardous Materials and Contingency Planning

Any accidental spills of toxic materials will be dealt with expeditiously. Diesel fuel and petroleum products are not, nor will they be, stored on Site by the proponent. Diesel fuel and petroleum products used in the machinery will be delivered only as required. Should an accidental spillage occur, first the contaminants will be contained with sand and absorbent pads. Once contained, the contaminated sand and materials will be scooped up, placed in appropriate barrels, which will be placed in a truck, and then transported without delay to the Envirosoil soil recycling facility in Bedford, Nova Scotia for processing. All spills and releases will be promptly contained, cleaned up and reported to the 24-hour emergency reporting system (1-800-565-1633).

[2] Cf. Natural Resources Conservation Service. (1995) Accessed at, http://www.il.nrcs.usda.gov/engineer/urban/index.html. accessed on , August 20, 2003.

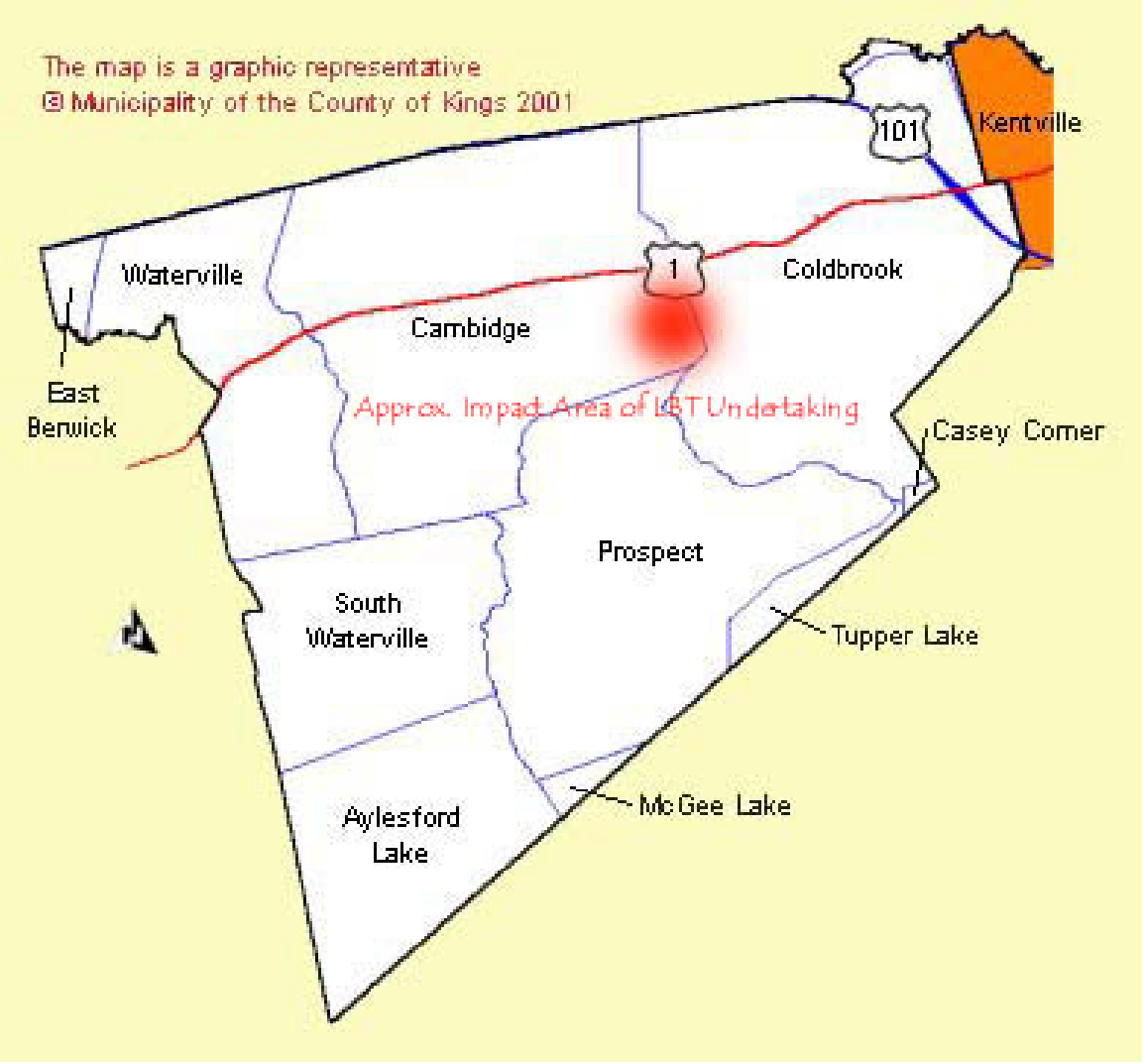
As a contingency plan, operators will have access to mobile radios or phones on Site. Shovels, absorbent materials, appropriate barrels (i.e., for holding contaminated soil before disposal), etc. will be kept at the Site. All refuse (e.g., oil containers) associated with this Undertaking will be placed in refuse containers, which are kept on the service vehicle, and removed immediately from the Site after use and disposed of properly.

The current and proposed gravel pit area is an extra concern because of its close proximity to the forested area. Recognizing this concern, Lawson Bennett Trucking Ltd. will promote safety and conscientiousness among its staff and customers. In the event of a fire, the local fire authority and the Department of Natural Resources will be contacted immediately.

4.5 Employment Opportunities

Lawson Bennett Trucking Ltd. currently employs five people. The employees work in different sectors of the operation; it is expected that they will continue to do so in the proposed expansion. Because the proposed Undertaking will continue with current production levels, the proponent will not require additional employees. Nonetheless, continued employment at Lawson Bennett Trucking Ltd. is dependent on the proponent's ability to source more aggregate.

Figure 3: Communities adjoining current & proposed pit expansion



* All further appendices, tables, and figures will restart numerically in each section.

5.0 Valued Environmental Components and Effects Mitigation

5.1 Methodology

In the fall of 2002, four environmental assessments of the Site for the proposed aggregate pit expansion were carried out. Jeff Wentzell, P. Ag., Middleton NS, was engaged to conduct an assessment of the proposed Undertaking and to predict its effects on the future productive potential of the agricultural land. Mr. Wentzell was also asked to make recommendations as to how best reclaim the excavated agricultural land. Jim Jotcham, Marbicon Inc., Somerset NS was engaged to conduct a plant survey, specifically looking for rare and sensitive flora. George Alliston, Ph.D., CWB, Wolfville NS was asked to conduct a wildlife survey, specifically looking for evidence of rare or endangered wildlife species and to identify potential impacts of the proposed expansion on wildlife at the Site. Ian Spooner, Ph.D., Wolfville NS was asked to conduct an assessment of the geology, geomorphology, and hydrogeology of the Site to identify potential impacts of the proposed project expansion on surface water and ground water. As well, a public meeting was held to explain the project to interested public and to garner public input as a means of identifying public concerns.

In the spring of 2003, follow up assessments were completed by Ruth Newell BSc.(Hons.), M.Sc. again looking for rare and sensitive flora; Dr. George Alliston once more looking for evidence of rare or endangered species, and a re-evaluation of the geology, geomorphology, hydrogeology of the proposed pit expansion by Dr. Ian Spooner. In July 2003, a fish and fish habitat assessment of Tupper Lake and Condon Brooks, and Tupper Lake pond (irrigation) was carried out by Derick Fritz. At that time, samples of water were taken from two sites on the Tupper Lake Brook and sent to the QE II Environmental Services lab for analysis.

5.1.1 Description of Existing Agricultural Environment

In September 2002, Jeff Wentzell carried out a survey of the agricultural land, site of the current and the proposed sand pit expansion. The existing and proposed expansion is located on made up of Cornwallis and Hebert soil types, which are co-dominant