

871901	255 COLDBROOK	KIN	8/5/87	P13C5K15	150.0	140.0	6.0	6.0A	0.0A1 1	145.0	150.0
871906	255 COLDBROOK	KIN	9/4/87	P13C5K15	215.0	140.0	6.0	4.0A	0.0A1 1	200.0	215.0
871912	255 COLDBROOK	KIN	10/2/87	P13C5K15	105.0	70.0	6.0	5.0A	0.0A1 1	85.0	105.0
871913	255 COLDBROOK	KIN	10/8/87	P13C5K15	140.0	90.0	6.0	3.0A	0.0A1 1	100.0	140.0
871914	255 COLDBROOK	KIN	10/10/87	P13C5K15	105.0	80.0	6.0	5.0A	0.0A1 1	90.0	105.0
871915	255 COLDBROOK	KIN	10/16/87	P13C5K15	140.0	112.0	6.0	5.0A	0.0A1 1	135.0	140.0
871918	255 COLDBROOK	KIN	11/9/87	P13C5L15	125.0	112.0	6.0	8.0A	0.0A1 1	115.0	125.0
871919	255 COLDBROOK	KIN	11/11/87	P13C5K15	140.0	50.0	6.0	5.0A	0.0A1 1	100.0	140.0
871921	255 COLDBROOK	KIN	11/21/87	P13C5L15	140.0	120.0	6.0	5.0A	0.0A1 1	125.0	140.0
871922	255 COLDBROOK	KIN	11/24/87	P13C5L16	145.0	131.0	6.0	5.0A	0.0A1 1	135.0	145.0
871823	255 COLDBROOK	KIN	2/18/87	P13C5L15	140.0	130.0	6.0	8.0A	0.0A1 1	130.0	140.0
871828	256 COLDBROOK	KIN	5/6/87	P13C5L15	105.0	80.0	6.0	6.0A	0.0A1 1	90.0	105.0
871829	256 COLDBROOK	KIN	5/11/87	P13C5L15	160.0	139.0	6.0	6.0A	0.0A1 1	150.0	160.0
871830	256 COLDBROOK	KIN	5/15/87	P13C5L15	140.0	126.0	6.0	10.0A	0.0A1 1	130.0	140.0
871831	256 COLDBROOK	KIN	5/20/87	P13C5L15	115.0	74.0	6.0	8.0A	0.0A1 1	100.0	115.0
871843	256 COLDBROOK	KIN	7/9/87	P13C5K15	105.0	87.0	6.0	4.0A	0.0A1 1	90.0	105.0
871844	256 COLDBROOK	KIN	7/15/87	P13C5K15	130.0	120.0	6.0	6.0A	0.0A1 1	120.0	130.0
871845	256 COLDBROOK	KIN	7/17/87	P13C5K15	150.0	140.0	6.0	6.0A	0.0A1 1	145.0	150.0
871854	256 COLDBROOK	KIN	9/1/87	P13C5K15	150.0	140.0	6.0	4.0A	0.0A1 1	140.0	150.0
871855	256 COLDBROOK	KIN	9/8/87	P13C5K15	120.0	114.0	6.0	6.0A	0.0A1 1	115.0	120.0
871858	256 COLDBROOK	KIN	9/23/87	P13C5K15	90.0	88.0	6.0	6.0A	0.0A1 1	0.0	0.0
871859	256 COLDBROOK	KIN	10/1/87	P13C5K15	150.0	140.0	6.0	5.0A	0.0A1 1	140.0	150.0
871860	256 COLDBROOK	KIN	10/6/87	P13C5K15	150.0	127.0	6.0	6.0A	0.0A1 1	140.0	150.0
871861	256 COLDBROOK	KIN	10/12/87	P13C5K15	110.0	80.0	6.0	5.0A	0.0A1 1	85.0	110.0
871863	256 COLDBROOK	KIN	11/6/87	P13C5K15	165.0	140.0	6.0	5.0A	0.0A1 1	145.0	165.0
871864	256 COLDBROOK	KIN	11/7/87	P13C5L15	140.0	135.0	6.0	8.0A	0.0A1 1	0.0	0.0
871866	256 COLDBROOK	KIN	11/15/87	P13C5L15	150.0	140.0	6.0	7.0A	0.0A1 1	140.0	150.0
871867	256 COLDBROOK	KIN	11/17/87	P13C5K15	140.0	120.0	6.0	5.0A	0.0A1 1	125.0	140.0
871869	256 COLDBROOK	KIN	11/26/87	P13C5G16	215.0	100.0	6.0	6.0A	0.0A1 1	165.0	170.0
871870	256 COLDBROOK	KIN	11/27/87	P13C5K15	65.0	56.0	6.0	10.0A	0.0A1 1	60.0	65.0
852117	256 COLDBROOK	KIN	3/19/85	P13C5K15	65.0	35.0	6.0	10.0B	12.0A1 1	35.0	65.0
852118	256 COLDBROOK	KIN	7/10/85	P13C5K15	187.0	32.0	6.0	2.0 1	0.0 1	150.0	187.0
852119	256 COLDBROOK	KIN	6/5/85	P13C5K15	150.0	120.0	6.0	10.0	17.0A1 1	125.0	150.0
852120	256 COLDBROOK	KIN	5/14/85	P13C5K15	60.0	56.0	6.0	6.0B	6.0A1 1	57.0	60.0
852121	256 COLDBROOK	KIN	5/8/85	P13C5K15	90.0	50.0	6.0	10.0B	7.0A1 1	70.0	90.0
852122	256 COLDBROOK	KIN	5/2/85	P13C5K15	90.0	50.0	6.0	10.0B	7.0A1 1	70.0	90.0
852123	256 COLDBROOK	KIN	9/10/85	P13C5K15	215.0	32.0	6.0	5.0	3.0A1 1	180.0	215.0
852124	256 COLDBROOK	KIN	7/30/85	P13C5K15	104.0	74.0	4.0	6.0	32.0A1 1	85.0	104.0
852125	256 COLDBROOK	KIN	10/2/85	P13C5K15	120.0	45.0	6.0	6.0	25.0A1 1	100.0	120.0
852126	256 COLDBROOK	KIN	8/14/85	P13C5K15	115.0	36.0	6.0	5.0	-0.1A1 1	90.0	115.0
852127	256 COLDBROOK	KIN	9/17/85	P13C5K15	240.0	41.0	6.0	0.0	0.0A1 1	190.0	240.0
852128	256 COLDBROOK	KIN	12/11/85	P13C5K15	115.0	63.0	6.0	10.0	16.0A1 1	85.0	115.0
830371	18 CAMBRIDGE	KIN	7/20/83	21H2A54	101.0	98.0	4.0	30.0	48.0A1 1	48.0	101.0
830379	18 CAMBRIDGE	KIN	5/16/83	21H2A57	127.0	124.0	4.0	20.0	48.0A1 1	48.0	127.0
830380	18 CAMBRIDGE	KIN	8/10/83	21H2A42	60.0	57.0	4.0	50.0	14.0A1 1	14.0	60.0
830381	18 COLDBROOK	KIN	10/26/83	21H2A52	80.0	50.0	4.0	20.0	16.0A1 1	16.0	80.0
830382	18 CAMBRIDGE ST	KIN	11/26/83	21H2A69	75.0	44.0	4.0	25.0	8.0A1 1	8.0	75.0

830385	18	CAMBRIDGE	KIN	7/20/83	21H2A54	104.0	101.0	4.0	15.0	48.0	A1 1	48.0	104.0
790816	18	COLDBROOK	KIN	8/22/79	21H2A53	118.0	70.0	4.0	8.0	A	69.0	A1 1	0.0 79.0
790830	18	CAMBRIDGE	KIN	12/14/79	21H2A42	88.0	54.0	4.0	12.0	A	17.0	A1 1	17.0 88.0
790831	18	CAMBRIDGE	KIN	8/1/79	21H2A54	102.0	98.0	4.0	25.0	A	44.0	A1 1	44.0 102.0
790833	18	COLDBROOK	KIN	2/24/79	21H2A53	135.0	92.0	4.0	10.0	A	36.0	A1 1	36.0 135.0
790834	18	COLDBROOK	KIN	3/15/79	21H2A53	118.0	61.0	4.0	12.0	A	50.0	A1 1	50.0 118.0
790840	18	CAMBRIDGE	KIN	8/25/79	21H2A42	103.0	47.5	4.0	6.0	A	12.0	A1 1	12.0 103.0
790844	18	COLDBROOK	KIN	3/7/79	21H2A53	120.0	74.0	4.0	10.0	A	65.0	A1 1	65.0 120.0
800730	18	CAMBRIDGE	KIN	6/26/80	21H2A31	109.0	106.0	4.0	20.0		32.0	A1 1	32.0 109.0
800733	18	COLDBROOK	KIN	7/10/80	21H2A52	105.0	63.0	4.0	12.0	A	28.0	A1 1	28.0 105.0
800737	18	CAMBRIDGE	KIN	6/17/80	21H2A32	59.0	56.0	4.0	20.0	A	31.0	A1 1	31.0 60.0
800738	18	CAMBRIDGE	KIN	6/24/80	21H2A42	60.0	27.0	4.0	10.0	A	16.0	A1 1	16.0 60.0
800739	18	CAMBRIDGE	KIN	3/8/80	21H2A55	193.0	645.0	4.0	10.0	A	43.0	A1 1	50.0 193.0
800743	18	COLDBROOK	KIN	8/23/80	21H2A69	97.0	94.0	4.0	20.0	A	45.0	A1 1	45.0 97.0
800746	18	CAMBRIDGE	KIN	7/25/80	21H2A41	150.0	26.0	4.0	6.0	A	15.0	A1 1	15.0 150.0
800749	18	CAMBRIDGE	KIN	10/25/80	21H2A54	135.0	115.0	4.0	15.0	A	42.0	A1 1	42.0 135.0
800750	18	CAMBRIDGE	KIN	7/14/80	21H2A42	120.0	40.0	5.0	25.0	A	19.0	A1 1	19.0 120.0
840802	58	COLDBROOK	KIN	10/30/84	21H2A54	130.0	106.0	6.0	45.0		10.0	A7 1	106.0 130.0
840807	59	COLDBROOK	KIN	7/11/84	21H2A52	154.0	65.0	4.0	6.0	B	30.0	A1 1	80.0 154.0
840808	59	COLDBROOK	KIN	9/4/84	21H2A52	175.0	155.0	6.0	7.0	P	52.0	A1 1	160.0 187.5
840810	59	COLDBROOK	KIN	10/26/84	21H2A52	80.0	61.0	5.0	6.0		24.0	A1 1	70.0 80.0
840814	59	COLDBROOK	KIN	10/26/84	21H2A52	110.0	105.0	4.0	6.0	P	16.0	A1 1	0.0 110.0
840816	59	COLDBROOK	KIN	5/17/84	21H2A52	126.0	107.0	4.0	6.0		18.0	A1 1	110.0 126.0
840819	59	COLDBROOK	KIN	10/11/84	21H2A52	65.0	35.0	4.0	4.0		16.0	A1 1	40.0 65.0
840820	59	COLDBROOK	KIN	12/30/84	21H2A52	90.0	30.0	6.0	3.0	P	16.0	A1 1	65.0 90.0
840821	59	COLDBROOK	KIN	5/10/84	21H2A52	150.0	115.0	6.0	10.0	B	42.0	A1 1	120.0 150.0
840823	59	COLDBROOK	KIN	6/6/84	21H2A52	98.0	65.0	4.0	5.0		29.0	A1 1	70.0 98.0
840824	59	COLDBROOK	KIN	12/12/84	21H2A52	80.0	65.0	6.0	7.0		18.0	A1 1	70.0 80.0
840826	59	COLDBROOK	KIN	12/3/84	21H2A52	150.0	134.0	6.0	10.0		21.0	A1 1	140.1 50.0
820984	110	CAMBRIDGE	KIN	8/11/82	21H2A55	185.0	84.0	6.0	4.0		0.0	A1 1	130.0 185.0
820988	110	COLDBROOK	KIN	7/5/82	21H2A51	95.0	57.0	6.0	8.0		0.0	A1 1	60.0 95.0
820989	110	COLDBROOK	KIN	7/6/82	21H2A52	110.0	78.0	6.0	8.0		0.0	A1 1	80.0 110.0
821002	110	CAMBRIDGE	KIN	10/15/82	21H2A42	80.0	45.0	6.0	8.0		0.0	A1 1	50.0 80.0
821016	110	CAMBRIDGE	KIN	8/12/82	21H2A42	95.0	58.0	6.0	5.0		0.0	A1 1	65.0 95.0
821025	110	CAMBRIDGE	KIN	6/8/82	21H2A52	85.0	58.0	6.0	9.0		25.0	A1 1	60.0 85.0
821026	110	COLDBROOK	KIN	12/8/82	21H2A76	80.0	60.0	6.0	30.0		10.0	A1 1	50.0 80.0
821034	110	CAMBRIDGE	KIN	8/12/82	21H2A55	50.0	56.0	6.0	5.0		30.0	A1 1	30.0 50.0
821037	110	COLDBROOK	KIN	6/7/82	21H2A52	90.0	64.0	6.0	7.0		0.0	A1 1	64.0 90.0
952296	256	COLDBROOK	KIN	7/1/95	P13C5K16	90.0	59.0	6.0	4.0	A	40.0	A1 1	75.0 0.0
952297	256	COLDBROOK	KIN	7/5/95	P13C5K16	105.0	88.0	6.0	4.0	A	60.0	A1 1	90.0 0.0
952303	255	COLDBROOK	KIN	8/8/95	P14A1P8	140.0	45.0	6.0	8.0	A	20.0	A1 1	75.0 130.0
952304	255	COLDBROOK	KIN	4/14/95	P13C5L14	100.0	66.0	6.0	3.0	A	35.0	A1 1	70.0 85.0
952305	255	COLDBROOK	KIN	5/25/95	P14C1K10	190.0	22.0	6.0	1.0	A	16.0	A1 1	45.0 0.0
992525	110	COLDBROOK	KIN	6/1/99	P13C5K13	240.0	209.0	6.0	25.0	A	75.0	A1 1	209.0 240.0
992526	110	CAMBRIDGE	KIN	6/3/99	P13E4H8	400.0	70.0	6.0	45.0	A	46.0	A1 1	100.0 320.0
992536	110	COLDBROOK	KIN	6/25/99	P14B2O11	320.0	20.0	6.0	3.5	A	0.0	A1 1	90.0 320.0
991692	255	COLDBROOK	KIN	12/30/99	P14C1L10	90.0	20.0	6.0	4.0	A	6.0	A1 1	70.0 0.0

991694	255	COLDBROOK	KIN	6/15/99	P14B1C15	165.0	20.0	6.0	3.0	A	31.0	A1	1	35.0	90.0
991695	255	CAMBRIDGE	KIN	7/5/99	P13D4F10	290.0	20.0	6.0	6.0	A	160.0	A1	1	165.0	280.0
991702	255	COLDBROOK	KIN	7/12/99	P14D2F10	215.0	25.0	6.0	10.0	A	35.0	A1	1	165.0	205.0
991703	255	CAMBRIDGE	KIN	3/25/99	P13C5K16	76.0	59.0	6.0	5.0	A	16.0	A1	1	60.0	0.0
001561	307	COLDBROOK	KIN	12/13/00	P14B1M7	125.0	75.0	6.0	20.0	A	0.0	A1	1	116.0	125.0
001562	307	COLDBROOK	KIN	12/14/00	P14A1N9	155.0	63.0	6.0	15.0	A	0.0	A1	1	130.0	155.0
001849	256	CAMBRIDGE	KIN	6/7/00	P13C5K15	70.0	59.0	6.0	10.0	A	11.0	A1	1	65.0	0.0
001851	256	CAMBRIDGE	KIN	7/25/00	P13C5K15	100.0	20.0	6.0	2.0	A	12.0	A1	1	75.0	0.0
AVG.							129.9	91.0							

Source: Well Log Database (1975-2000). Nova Scotia Department of Environment, Bedford, NS

5.5 Fish and Fish Habitat

5.5.1 Description of Existing Environment

Fish and Fish Habitat Assessment of Tupper Lake and Condon Brooks, and Tupper Lake pond for a Proposed Pit Expansion, Cambridge, Kings County, NS – 01 August 2003

Summary

A survey for the presence of fish and fish habitat in waters and streams draining on or near the site of the current and proposed sand and gravel pit expansion operated by Lawson Bennett Trucking , was requested by Hendricus Van Wilgenburg acting on behalf of Lawson Bennett) (the proponent).

A fish sampling program was designed and carried out on July 11, 2003 and sampled waters in lower, upper and in the irrigation pond of the Tupper Lake Brook section running through the area of interest. Six species of fish were found at the five sites sampled on the Tupper Lake Brook. In the irrigation pond and in the upper part of the brook from the irrigation pond southward, a population of Brook Trout (*Salvelinus foninalis*) is well established. Throughout the pond and the entire length of the Tupper Lake Brook, the presence of Banded Killifish (*Fundulus spp.*) and Three Spined Stickleback ("minnows" to most people) was recorded. Creek Chubs (another type of

minnow) was the other species seen, mainly in the section of the brook below the irrigation pond.

Two other strong presences in the Tupper Lake Brook are the American Eel (*Anguilla rostrata*), and White Sucker fish (*Catostomus commersoni*). Most of the fish collected are historically found in most of the Cornwallis Watershed as well as all the Valley watersheds. Based on a visual examination of fish collected, all fish species seemed to be in very good condition and appearance as well as abundance.

Most of the fish habitat of the Tupper Lake brook seemed to be suitable for all species listed above to thrive. Although a 0.5km section of Tupper Lake Brook that runs through a pasture on the east side about half way up stream between the road in to the property and the pond may be in violation of Sections 36 (3), 22 (1), 20 (1) and 35 (1) of the Fisheries Act; namely, there are motorized vehicles traveling in and through the brook as well as evidence of cattle entering the stream. This area (site #2) has poor riparian zones and there is little indication of the presence of fish. Based on water samples taken and tested (refer to locations on map, Figure 1), dissolved oxygen, temp, and Ph were acceptable. There is evidence of high e'coli over 250 colonies per 100ml sample down stream from the pasture, which is likely due to the livestock activity. The upper end of the brook including the irrigation pond has very low (expectable) e'coli counts.

With the exception of the pasture area, the Tupper Lake Brook has very good riparian growth and canopy cover. The substrate in the brook, for the most part, is dominated by silt, pebbles, and cobblestone, with the exception of the site below the pond. This area is dominated by sedimentary rock and fed by spring water seeping up through the area below the pond (Figure #1), possibly from the pond itself. Although Condon Brook is located on the Lawson Bennett site, the brook is seasonal and is currently dried up.

Introduction:

As part of the environmental assessment of the Lawson Bennett Trucking site, a fish survey was undertaken within the Tupper Lake Brook, and Condon Brook. The purpose of the survey was to determine if fish species were found within these brooks. The aim of

this study was to evaluate the quality of the fish habitat (i.e., good or poor) and find evidence of fish populations in the waters on the property where the proposed pit expansion is to take place.

Methodology:

The survey consisted of a walk through of the entire area on June 27 followed by a day of actual water sampling and electrofishing. Dissolved oxygen (DO) levels and temperature were recorded using a YSI Model 95 handheld DO and temp system. The ph was recorded with a Lamont ph titration kit. The electrofishing was carried out with a Smith-Root model electrofisher: a presents/absence method was utilized.

June 27, 2003

The walk-through was made by Derick Fritz, Aq.t/Biol (Ocean Valley Aquatics). Beginning at Sharps Brook that leads into Tupper Lake Brook, the general watercourse was "walked" from the 50 meters west of the coverts at the north end of the site up Tupper Lake Brook to the pond then up stream to the end of the property and through the area of Condon brook that is adjacent to the property. Visual observations were made as to the general quality of the habitat and any fish seen were noted.

July 11, 2003

Fish sampling was carried out by Derick Fritz, Aq.t/Biol and Mike Parker, B.Sc Senior Biologist (Ocean Valley Aquatics). Fish were sampled by use of dipping nets and a Smith Root back-pak 24-volt electrofisher. Sampling was carried out at 5 sites on the Tupper Lake Brook (fig.1). Electrofishing was done without barrier nets and sampled at variable areas along the brooks. Seconds fished was generally between 150 and 560 seconds per site.

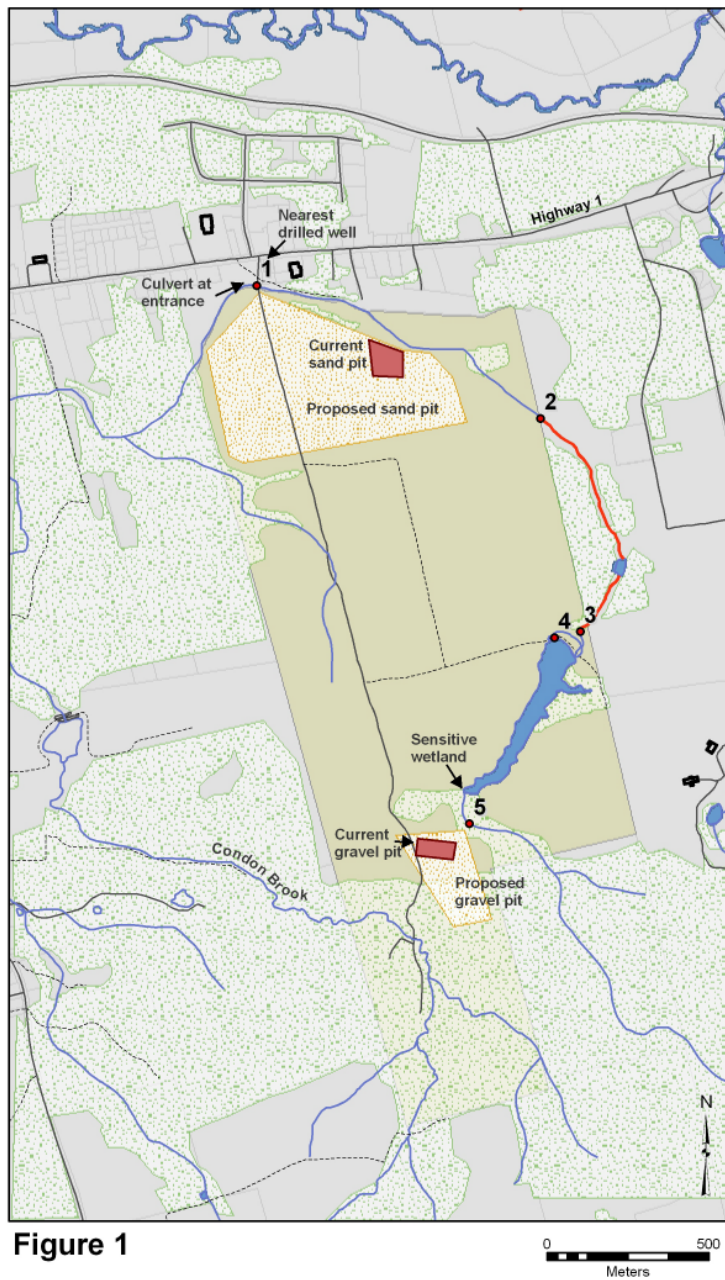


Figure 1

*Numbers 1 through 5 on the map refer to sampling locations. The red section of Tupper Lake Brook lies outside of the proposed project property.

Results:

This study has shown the presence of at least six different species of fish in the brooks running through the site. Table.1 summarizes the observations made at each sampling site, including the number and species of fish found at each location.

Table # 1 Observations from fish sampling at 5 sites within the Tupper Lake Brook (numbered 1 through 5 in Figure 1).

Site	Location	Sucke	Creek Chu	Eel	Stickle Ba	Brook Tro	length/sec EF
1	entrance to property	6	3	0	0	0	60meters/350sec.
2	east side of property	0	8	3	2	0	250meters/750sec
3	bottom end of dam	3	10	3	2	0	40meters/150sec
4	irrigation pond	0	4	6	2	0	20meters/75sec
5	beside aggregate pit	0	0	0	0	18	60meters/400sec

Site	Canopy cover	Substrate dominant/sec dom	Riparian growth	comments
1	97 %	Silt/Cobble	100%	dense growth high e'coli
2	10 %	Silt/Pebble	60%	animals and tractor in/st
3	40 %	Boulders/Sandstone	10%	only source of water is sp
4	5%	Boulders/pebbles	2%	fish passage culvert prese
5	95%	Cobble/pebble	70%	good salmonid habitat

Site	Dissolved Oxygen m	Water Ten	PH	Observations
1	8.81mg/l/85%	15°C	6.6	other minnows seen/poor flow
2	8.8mg/l/90%	16.6°C	6.8	evidence of animals and motorized vehicles in st
3	6.8mg/l/70%	14°C	6.4	All flow blocked/ only water is from spring in sa
4	6.9mg/l/75%	22.8°C	6.3	only sampled along northern end along edge
5	7.76mg/l/77%	16°C	6.6	upper end of pond beside aggregate pit

Brook Trout (*Salvelinus fontinalis*) were found mainly in the upper end of Tupper Lake Brook above the pond, and some were seen in the pond. But dry weather and lower water levels have dropped water level below fish passage culvert.

Eels (*Anguilla rostrata*) were found abundantly along most of the Tupper Lake Brook. The dam at the pond seems to be a clear border between any salmonids that may have been stalked in Tupper Lake, and the Minnows and Eels at the lower end of the brook.

The physical habitat of the Tupper Lake Brook is healthy for the most part, excepting the section of brook that flows off the property, on which the proposed undertaking is located, before returning to the property. This area runs through a pasture (coloured red in Figure 1), which is stocked with cattle that roam freely in stream area, as well as motorized vehicles operating in and through the brook in several spots. This activity has severely degraded the fish habitat and water quality in the section of brook east of property on which the proposed expansion is located (refer to Figure 1).

Conclusion:

This study has confirmed that fish are present in the Tupper Lake Brook. All fish species appeared in good visual health, and in abundance. The general fish habitat and water quality parameters are suitable for the species present to thrive.

The condition of the fish in the Tupper Lake Brook sites is very good. In particular, the Brook Trout and the Eel are abundant, the Eel dominating from the pond north, and the Brook Trout dominating from the upper part of the pond to the southern reaches of the brook.

The Brook Trout was found in a variety of sizes (ages) and were very easy to see and capture in the brook. The health of the fish captured appeared to be good, at least from a visual examination. The Brook Trout are known to populate most brooks and rivers in Nova Scotia and are one of the hardier species of salmonids. What is not known is what other fish species are present in deeper waters of the pond, since sampling was done along the outer edges of the pond.

Sources cited:

Fisheries Acts and Regulations

20. (1) 22. (1) 34. (1) 35. (1)

5.5.3 Potential Effects and Proposed Mitigation

There is potential that the fish and fish habitat may be affected by activity associated with this project. Acid rock drainage and sedimentation of watercourses can have a negative impact on both the fish and the fish habitat. It is anticipated that the runoff, erosion and sedimentation control measures outlined elsewhere in this document will limit that potential. Visual inspection of the water courses and monitoring of surface water quality will help reduce the potential for disaster. If evidence suggests that acid rock drainage and/or sedimentation of surface water is occurring, excavation of aggregate will come to a halt and the source of the contamination identified.

5.6 Air Quality

5.6.1 Description of Existing Environment

The Nova Scotia Department of Environment (NSDOE) monitors air quality at ten locations in NS. Generally, air quality in Nova Scotia meets or exceeds national standards in most communities. The common air pollutants monitored regularly are sulphur dioxide, suspended particulate, carbon monoxide, ground level ozone, nitrogen dioxide and hydrogen sulphide. Exceedances for these contaminants are generally small and infrequent in Nova Scotia. The nearest NSDOE monitoring site is located at Alyesford, located approximately 15 km from the project site (NSDOE 1998).

5.7 Socio-economic Environment

5.7.1 Description of Existing Environment

The Site for the proposed Undertaking is bordered on the east and west by two growth centers. Along a 1 1/2 kilometre stretch of Highway #1, in which the Site is centered, there are roughly fifty homes. While the property in question is classed as agriculture land, the area in which the property is located has experienced significant housing construction. From 1991 to 1996, the Cambridge area (Subdivision A, County of Kings, NS) experienced a 6.8% increase in its population, from 21,245 in 1991 to 22,700 in

1996 (Canada 1996).⁶ The subsequent five years saw a 1.2% reduction in the number of persons living in the Cambridge area, from 22,700 in 1996 to 22,430 in 2001. In 2001, the population density in the Cambridge area is 18.2 persons per square kilometre compared with 17.2 persons per square kilometre in Nova Scotia (Canada 2001). The average age of the population in Cambridge is 37.2 years compared with 38.8 in Nova Scotia. The percentage of the population who are ages 15 and over is 78.5% compared with 81.8% in Nova Scotia. Of those persons reporting income in Cambridge, the average total income is \$20,511 compared with \$21,552 in Nova Scotia. In 1996, the unemployment rate in Cambridge was 9.9 % compared with 13.3 % in Nova Scotia. In 1996, of the 10,440 persons employed in the Cambridge area, 1,625 were employed in secondary manufacturing and construction industries, whereas 7,575 were employed in tertiary service industries.

In the Cambridge area, the highest level of schooling for persons aged 25 years and over with less than grade nine is 11.7% compared with 12.6 % in Nova Scotia. For those 25 years of age and over, the percentage of the population with a high school certificate or higher is 63.3% compared with 62.9 % in Nova Scotia. For those 25 years of age and over holding a trade or non-university certificate or diploma or higher the percentage is 44.7% compared with 46.0 % in Nova Scotia. The percentage of the population, 25 years of age and over who have completed university, is 10.2 compared with 15.8 % in Nova Scotia.

5.7.2 Other Undertakings in the Area

There are approximately 9 other pit and quarries operating or licensed to operate in a 10 mile radius of the proposed Site. Although these Undertakings add to the traffic flow through Valley corridor, this project will not increase that flow as it has been operating on the Site for the past year.

⁶ The source for the socio-economic data was Statistics Canada. Accessed from, <http://www.statcan.ca>. Accessed on, 2003-04-18

5.7.3 Potential Effects and Proposed Mitigation

LBT does not intend to significantly increase its yearly aggregate production. Hence, it is unlikely that the pit expansion will add to the socio-economic impact beyond what the current project now contributes (i.e., activities associated with the current pits). Trucks and truck drivers will continue to benefit those employed and the tertiary service industries in Cambridge and area.

5.8 Archaeological and Heritage Resources

5.8.1 Description of Existing Environment

On September 11, 2002, a discussion was held with Stephen Powell of the Nova Scotia Museum of Natural History (NAMNH). Mr. Powell advised that NAMNH is not aware of any existing or potential archaeological and heritage resources on or in the vicinity of the proposed pit expansion. Consultation was also held with Jonathan Fowler - Archaeologist (Halifax, NS). He is also not aware of any archaeological and heritage sites in the Cambridge area.

Conversations with a former landowner of the proposed expansion site revealed that a horse-racing track was active on the site circa the early 1900s. A visual survey was carried out by walking over the area in question. No artefacts or physical evidence were found. Such is not surprising, considering that the area has been actively farmed for more than thirty years. The nearest site of archaeological significance is an aboriginal burial grounds unearthed in Kentville, NS (see Appendices V & VI).

5.8.2 Potential Effects and Proposed Mitigation

Although no existing or potential archaeological and heritage resources were identified or found on or in the vicinity of the proposed pit expansion, if artefacts or physical evidence are found during extraction activities, Lawson Bennett Trucking Ltd. will contact the Nova Scotia Museum of Natural History immediately to preserve, protect, or recover any features of socio-economic, cultural, or archaeological value.

5.9 Public Involvement

5.9.1 Description of Existing Environment

For the Lawson Bennett Trucking aggregate pit expansion, local interest in the existing and proposed expansion is high. To understand the concerns and values of the residents in the community, meetings were held individually with the development officer for the County of Kings and the municipal councilor for Cambridge and area. The purpose of the meetings was to gather background information on other similar development in the area; identify active groups and individuals, as well as the best means and methods of involving the public in the process.

A letter explaining the project and inviting comment was sent to the Annapolis Valley First Nations band chief; a telephone call was received from Mr. B.Toney upon the receipt of that letter at which time he offered his support for the project expansion.

To further generate community interest and involve public in the LBT expansion and assessment process, a community meeting, billed as a “Public Awareness Meeting,” was held on November 21st 2002 in the Cambridge Community Hall, from 7:00 p.m. – 9:00 p.m. The purpose of the meeting was as follows: to inform the residents of Cambridge as to the details of the proposed expansion; second, to note the residents’ concerns; and lastly, to answer questions, all in a collective and transparent method.

Initial action steps

To heighten publicity, 75 notices were hand-delivered to most homes within a half-kilometer of the site entrance (see Appendix VIII). One week before the meeting, an identical notice promoting the event and its purpose was published in a local newspaper with good distribution in the community (see Appendix VIII). Additionally, six radio spots announcing the details of the meeting and encouraging everyone to attend were purchased and broadcast by the local radio station.

The Event

Twenty-two people attended the meeting (see Appendix J). The first half of the meeting was devoted to introducing the project, a description of the site, and biophysical assessments conducted; whereas, the second half of the meeting was devoted specifically to addressing the participants' concerns and recording their comments and ideas (see Table 1). Of the ten comment forms returned by participants, 100% responded that the meeting was "worthwhile."

Table 1 Participant concerns regarding the proposed aggregate expansion

<i>Biophysical Environment</i>	<i>Social Environment</i>
Environmental stability	Site aesthetics
Reclamation	Traffic safety—accessing Highway #1
Productivity	Truck traffic
Site and soil degradation	Nuisance dust & noise
Mitigation	Property values
Standing water	Potential health risks

5.9.2 Potential Effects and Proposed Mitigation

The prime community concern with respect to the current pit and proposed expansion is truck traffic, regardless if the expansion goes forward. The residents are mindful of the truck traffic, after having experienced its affects for the past year. This issue may jeopardise the quality, cost, or schedule of the project, if these issues cannot be mitigated to the satisfaction of the community. Changes to trucking schedule shifts, community respect from the truck drivers, and a more effective means of keeping the dust to a minimum are currently being resolved.

Residents have acknowledged the proponent's efforts to control nuisance dust. A number of suggestions were made by the residents: spraying calcium chloride farther along the roadway into the site; maintaining road quality; planting trees as a buffer; building an alternate roadway to the site off Spital road, and paving roadway up to the brook, which would also reduce the potential of mud being tracked onto Highway 1.

There are a number of problems with using Spital road as an alternative to get to and from the site: first, dust is still a problem because Spital road is sand-based; second, constructing an alternate route to the site will be expensive and have an impact on undistributed biophysical environment, and lastly, Spital road as a access route was unconditionally rejected by some residents.

The proponent will encourage truck drivers travelling to and from the site to respect the concerns and interests of the residents of Cambridge and area, by reducing speed, not employing noisy engine brakes, and stopping before accessing Highway 1. In the event of a concern, the proponent will speak directly to the respective driver(s) regarding driving behaviour.

To address traffic safety concerns, the proponent has widened the entrance to the site affording the trucks more turning room when accessing Highway 1. As well, the proponent placed a “Stop” sign at the site entrance/exit. Community residents have since acknowledged the improvements. The proponent will make “self-policing” of truck traffic an on-going feature of the proposed expansion and make himself accessible to the members of the community to maintain communication.

6.0 Regulatory Compliance & Approvals

Approval for this project will be sought in accordance with the requirements of the following provincial legislation and the regulations made pursuant to them:

- Nova Scotia *Environment Act*; and;
- Industrial Approval for Pit and Quarry Development under the *Activities Designation Regulations*.

The expansion of the Cambridge Aggregate Pit expansion will adhere to the most recent versions of the relevant NSDEL guidelines and specifications including: Pit and Quarry Guidelines; Erosion and Sedimentation Control Handbook for Construction Sites, and Guideline for Environmental Noise Measurement and Assessment. In addition, the following joint provincial guidelines and specifications may apply: Guidelines for Development on Slates in Nova Scotia. All work at the Site will be carried out in

accordance with the Nova Scotia Occupational Safety General Regulations, or the relevant legislation in force at the time of construction.

Approvals for this project may not be required in accordance with the following federal and provincial legislation and the regulations made pursuant to them; nonetheless, the activities associated with this project must comply with following:

- Canadian Environmental Protection Act;
- Canadian Fisheries Act;
- Canadian Migratory Birds Conservation Act;
- Nova Scotia Dangerous Goods Transportation Act;
- Nova Scotia Environment Act;
- Nova Scotia Special Places Act; and
- Nova Scotia Wildlife Act.

7.0 Effects of the Undertaking on the Environment

As with most projects, there are advantages and disadvantages connected to this project. Potential disadvantages that may arise from this project are nuisance dust and noise arising from activities connected with this Undertaking (e.g. trucks on and off Site). Trucks traveling to and from the Site also pose a safety concern as with most increased vehicular traffic. Although not expected to be significant, there is some loss of agricultural production as land is temporarily taken out of production. Moreover, there is the loss of terrestrial habitat within the footprint of the expanded pit. Lastly, there is the potential for sedimentation and acid rock drainage arising from pit activities that may afterward spoil the aquatic habitat of the watercourses on and off the Site.

The advantages of the project to the environment are mostly socio-economic rewards. The project will provide continued employment opportunities for those individual employed in activities closely related with the project (e.g., individuals who work for Lawson Bennett Trucking and others, such as truckers). There are also those who work in tertiary industries that service individuals and organization associated with the project. The sand excavated from this Site is a component in the construction of water treatment systems, which also plays an important role in safeguarding the environment beyond the Site. As one specialist stated during the development of this document, removing a layer

of sand from the Site may well benefit agricultural production. The gravel too is a necessary component in maintaining roadways and building construction. It is expected that the benefits from this project will far outweigh its disadvantages. The aim here is to service the needs of society without adversely effecting the environment in a significant way.

8.0 Effects of the Environment on the Undertaking

The environment may effect this Undertaking primarily by way of climatic conditions. Precipitation or runoff may hold up the timely preparation, excavation, and reclamation of land within the active area of the pits. Further, wet weather or snow may limit when aggregate can be hauled from the Site. If the environmental conditions are not conducive to the relevant activity, the activity may have to postponed until conditions are more amenable.

9.0 Conclusions

The proposed Cambridge Aggregate Pit expansion is viewed as an important and necessary contribution to the future economic stability of Lawson Bennett Trucking Ltd. and to service the needs and well being of the owner, the employees and Nova Scotians. Although some adverse environmental effects are anticipated, it is assumed that with careful attention to the mitigative measures as outlined in this document that the adverse effects identified in this document can be avoided, lessened or mitigated. It is anticipated that Cambridge Aggregate Pit expansion will result in some loss of terrestrial habitat within the expanded pit footprint, but that loss is not expected to be significant. On the other hand, it is expected that there will not be a loss in the productive potential of the agricultural land within the footprint of the expanded pit area. The sand pit expansion may in fact offset the degradation of water quality by agricultural practices at the Site. Further, the active area of the proposed pit expansion does not appear to be a unique habitat for rare or sensitive species. Three rare species of birds have been identified at the Site, but it anticipated that the proposed project will have no more impact on these birds than do current pit and farming activities. Hence, it is anticipated that the impact

associated with the expansion of this project on fauna and flora are not expected to be significant. The removal of surface aggregate in the quantities indicated in this study is expected to have no or little effect on both the quality and the quantity of the surface water and groundwater on or adjacent to the Site. Assuming that the mitigative measures outlined in this report are implemented, and the pit is operated according to existing provincial guidelines and approvals, no significant adverse residual environmental effects are apparent.

10.0 References

IAP2. 2000. Public Participation Toolbox: Passive Public Information Techniques. *in*. International Association of Public Participation.

NSDOE. 1998. The State of The Nova Scotia Environment. The Nova Scotia Department of Environment. Accessed from: <http://www.gov.ns.ca/enla/pubs/envdoc.pdf>. Accessed on: 2003-04-19.

Statistics Canada. 1996. Community Profiles. *in*. Statistics Canada. Accessed from: <http://www.statcan.ca>. Accessed on:

11.0 Appendices

Appendix I—Property Deed

KINGS COUNTY REGISTRY OF DEEDS	3982	1326	6336/43
I certify that this document was registered as shown here.	Document #	Book	Page
Kevin Deville Registrar	JUN 11 2002		9:32am
	MM DD YYYY		Time

633

THIS INDENTURE made this 30th day of April, 2002.

BETWEEN:

PEPSI-COLA CANADA LTD., carrying on business under
the name and style of HOSTESS FRITO-LAY COMPANY,
a division of Pepsi-Cola Canada Ltd.

hereinafter called the "GRANTOR",

JUN 11 2002

OF THE ONE PART

003987

- and -

3051719 NOVA SCOTIA LIMITED, a body corporate
incorporated pursuant to the laws of the Province of Nova
Scotia,

hereinafter called the "GRANTEE",

OF THE OTHER PART

WITNESSETH that in consideration of One Dollar (\$1.00) the Grantor hereby
conveys to the Grantee the lands described in the Schedule marked "A" hereto annexed.

THE GRANTOR covenants with the Grantee that the Grantee shall have quiet
enjoyment of the lands, that the said Grantor has a good title in fee simple to the lands and the right
to convey them as hereby conveyed, that they are free from encumbrances and that the said Grantor
will procure such further assurances as may be reasonably required.

IN WITNESS WHEREOF the proper signing officers of the Grantor have
hereunto set their hands and affixed the corporate seal the day and year first above written.

SIGNED, SEALED AND DELIVERED

) PEPSI-COLA CANADA LTD.

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And

By: 

Appendix II—Current Pit Approval

NOVA SCOTIA

Department of Environment and Labour

APPROVAL

Province of Nova Scotia
Environment Act, S.N.S. 1994-95, c.1

APPROVAL HOLDER: Lawson L. Bennett Trucking Limited

APPROVAL NO: 2002-026026

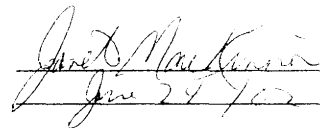
EFFECTIVE DATE: June 24, 2002

EXPIRY DATE: June 24, 2012

Pursuant to Part V of the *Environment Act*, S.N.S. 1994-95, c.1 as amended from time to time, approval is granted to the Approval Holder subject to the Terms and Conditions attached to and forming part of this Approval, for the following activity:

Construction and operation of a sand pit, and associated works, at or near Cambridge, Kings County in the Province of Nova Scotia.

Administrator
Date Signed


June 24, 2002

Appendix III—Terms & Conditions

TERMS AND CONDITIONS OF APPROVAL

Nova Scotia Department of Environment and Labour

Project: Lawson L. Bennett Trucking Limited
Sand Pit

Cambridge, Kings County

Approval No: 2002-026026

File No: 92100-30

Map Series: 0

Grid Reference: E372835 N4988673 (GPS measurement)

Reference Documents:

- Application dated March 28, 2002 and attachments.
- Survey plan dated April 8, 2002 by Derik DeWolfe

1. Definitions

- a) "Abandonment" means cessation of production of aggregate for a period of twelve (12) months.
- b) "Act" means the *Environment Act* S.N.S. 1994-1995, c.1 and includes all regulations made pursuant to the Act.
- c) "Active Area" means the area required to operate a pit and includes the working face and associated works.
- d) "Associated works" means any building, structure, processing facility, pollution abatement system or stockpiles of aggregate.
- e) "Department" means the Western Region, Kentville Office, of the Nova Scotia Department of Environment and Labour located at the following address:

Nova Scotia Department of Environment and Labour
Environmental Monitoring and Compliance Division
Western Region, Kentville Office
136 Exhibition St.
Kentville, NS B4N 4E5

Phone: (902) 679-6086

Fax: (902) 679-6186

- f) "Disturbed Area" means any area on a pit site that has been stripped of vegetation and is susceptible to erosion.
- g) "Facility" means the sand pit and associated works.
- h) "Minister" means the Minister of the Nova Scotia Department of Environment and Labour.
- i) "Rehabilitation" means restorative work performed or to be performed in accordance with the rehabilitation plan.
- j) "Structure" includes but is not limited to a private home, a cottage, an apartment building, a school, a church, a commercial building or a treatment facility associated with the treatment of municipal sewage, industrial or landfill effluent, an industrial building, infrastructure or construction, a hospital, and a nursing home, etc.

2. **Scope of Approval**

- a) This Approval (the "Approval") relates to the Approval Holder and their application and supporting documentation, as listed in the reference documents above, to construct and operate the Facility, situated at or near Cambridge, Kings County (the "Site").
- b) The Facility shall be constructed and operated as outlined in the application for industrial approval dated March 28, 2002 and supporting documentation.
- c) The Site shall not exceed the area as outlined in the application and supporting documentation.
- d) Should the work authorized by this Approval not be commenced within a year, this Approval shall automatically be null and void, unless extended in writing by an Administrator.

3. **General Terms and Conditions**

- a) The Approval Holder shall construct, operate and reclaim its Facility in accordance with provisions of the:
 - i) *Environment Act* S.N.S. 1994-1995, c.1;
 - ii) Regulations pursuant to the above Act;
 - iii) Any future amendments to the Act and regulations
- b) No authority is granted by this Approval to enable the Approval Holder to construct the Facility on lands which are not in the control or ownership of the Approval Holder. It is the responsibility of the Approval Holder to ensure that such a contravention does not occur. The Approval Holder shall provide, to the Department, proof of such control or ownership upon expiry of any relevant lease or agreement. Failure to retain said authorization will result in this Approval being null and void.
- c) If there is a discrepancy between the reference documents and the terms and conditions of this Approval, the terms and conditions of this Approval shall apply.
- d) The Minister or Administrator may modify, amend or add conditions to this Approval at anytime pursuant to Section 58 of the Act.
- e) This Approval is not transferable without the consent of the Minister or Administrator.
- f)
 - (i) If the Minister or Administrator determines that there has been non-compliance with any or all of the terms and conditions contained in this Approval, the Minister or Administrator may cancel or suspend the Approval pursuant to subsections 58(2)(b) and 58(4) of the Act, until such time as the Minister or Administrator is satisfied that all terms and conditions have been met.
 - (ii) Despite a cancellation or suspension of this Approval, the Approval Holder remains subject to the penalty provisions of the Act and regulations.
- g) The Approval Holder shall notify the Department prior to any proposed extensions or modifications of the Facility, including the active area, process changes or waste disposal practices which are not granted under this Approval. An amendment to this Approval will be required before implementing any

change. Extensions or modifications to the Facility may be subject to the Environmental Assessment Regulations.

- h) Pursuant to Section 60 of the *Act*, the Approval Holder shall submit to the Administrator any new and relevant information respecting any adverse effect that actually results, or may potentially result, from any activity to which the Approval relates and that comes to the attention of the Approval Holder after the issuance of the Approval.
- i) The Approval Holder shall immediately notify the Department of any incidents of non-compliance with this Approval.
- j) The Approval Holder shall bear all expenses incurred in carrying out the environmental monitoring required under the terms and conditions of this Approval.
- k) Unless specified otherwise in this Approval, all samples required to be collected by this Approval shall be collected, preserved and analysed, by qualified personnel, in accordance with recognized industry standards and procedures.
- l) All samples required by this Approval shall be analysed by a laboratory that is:
 - i) Accredited by the Standards Council of Canada; or
 - ii) Accredited by another agency recognized by the Nova Scotia Department of Environment and Labour to be equivalent to the Standards Council of Canada; or
 - iii) Maintaining an acceptable standard in a proficiency testing program conducted by the Canadian Association for Environmental Analytical Laboratories for all parameters being reported; or
 - iv) Maintaining an acceptable standard in a proficiency or performance testing in another program considered acceptable to the Nova Scotia Department of Environment and Labour for all parameters being reported
- m) The Approval Holder shall submit any monitoring results or reports required by this Approval to the Department. Unless specified otherwise in this Approval, All monitoring results shall be submitted within 30 days following the month of monitoring.

- n) The Approval Holder shall ensure that this Approval, or a copy, is kept on Site at all times and that personnel directly involved in the Facility operation are made fully aware of the terms and conditions which pertain to this Approval.
- o) The Approval Holder will be required to register their project under Part IV of the *Environment Act* should the Facility and associated works including access roads exceed an area of four (4) hectares.

4. Construction of Facility

- a. All erosion and sedimentation controls are to be in place prior to construction at this Facility. The Nova Scotia Department of the Environment "Erosion and Sedimentation Control Handbook For Construction Sites" shall serve as the reference document for all erosion control measures. These measures are minimum requirements and additional controls shall be implemented if Site runoff exceeds the discharge limits contained herein.
- b. All erosion and sedimentation controls are to be maintained and remain in place until the disturbed areas are stabilized.
- c. All water leaving the Site during the construction phase shall be in compliance with total suspended solids limits of 50 mg/l grab or 25 mg/l monthly arithmetic mean.
- d. Appropriate signage including the hours of operation, emergency telephone numbers and contacts are to be posted at the entrance to the Facility.
- e. The generation of dust from the Site shall be suppressed by the application of water sprays, or the application of other suitable approved dust suppressants as required.

5. Particulate Emissions (Dust)

- a) Particulate emissions shall not exceed the following limits at or beyond the Site property boundaries:

Annual Geometric Mean	70 $\mu\text{g}/\text{m}^3$
Daily Average (24 hr.)	120 $\mu\text{g}/\text{m}^3$

- b) The generation of fugitive dust from the Site will be suppressed by the application of water sprays, or the application of other suitable dust suppressants approved by the Department.
- c) Site access road(s) shall be maintained to minimize dust generation. The use of used oil is not permitted.
- d) Monitoring of particulate emissions shall be conducted at the request of the Department. The location of the monitoring station(s) for particulate will be established by the Administrator and may include point(s) beyond the property boundary of the pit.
- e) When requested, suspended particulate matter shall be measured by the high volume method as described in report No. E.P.S. 1-AP-73-2.

6. **Sound Levels**

- a) Sound levels measured at the Site property boundaries shall not exceed the following equivalent sound levels (Leq):

Leq 65 dBA 0700-1900 hours (Days)
60 dBA 1900-2300 hours (Evenings)
55 dBA 2300-0700 hours (Nights)
- b) Monitoring of sound levels shall be conducted at the request of the Department. The location of the monitoring station(s) for sound will be established by the Administrator and may include point(s) beyond the property boundary of the pit.

7. **Surface Water**

- a) The Site shall be developed and maintained to prevent siltation of the surface water which is discharged from the property boundaries into the nearest watercourse or beyond the property boundary. The Nova Scotia Department of the Environment "Erosion and Sedimentation Control Handbook For Construction Sites" shall serve as the reference document for all erosion control measures. These measures are minimum requirements and additional controls shall be implemented if Site runoff exceeds the discharge limits contained herein.
- b) No authority is granted by this Approval to enable the Approval Holder to discharge surface water beyond the property boundary and onto adjoining lands without the authorization of the affected landowner(s). It is the responsibility of

the Approval Holder to ensure that the authorization of said landowner(s) is current and valid. Failure to maintain said authorization will result in this Approval being null and void. The Approval Holder shall provide, to the Department, proof of the continued authorization of the adjoining landowner(s) when the current agreement has expired.

- c) All erosion and sedimentation control devices shall be installed prior to any excavation of material.
- d) The Approval Holder shall ensure the liquid effluent levels in Table 1 are met and that the effluent is monitoring at the frequency and locations indicated.

Table 1				
Final Effluent Discharge Limits				
Parameters	Maximum in a Grab Sample	Monthly Arithmetic Mean	Monitoring Frequency	Monitoring Station
Total Suspended Solids	50 mg/l	25 mg/l	N/A	Tupper Lake brook
pH	5 - 9	6 - 9	N/A	Tupper Lake brook

- e) If it becomes necessary to drain the Site, the wastewater shall be drained to settling ponds for appropriate treatment to meet the suspended solids limits outlined in Table 1.
- f) All wash water systems shall be arranged in closed circuit.
- g) Additional monitoring stations for liquid effluent may be specified as required by the Department.
- h) A monthly summary of results of monitoring shall be submitted to the Department, if requested.

8. Groundwater

- a) The Approval Holder shall replace at their expense any water supply which has been lost or damaged as a result of extracting aggregate.
- b) The Approval Holder shall secure from the Administrator an approval amendment prior to excavating below the watertable.

9. Separation Distances

- a) The Approval Holder shall 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) The Approval Holder shall 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.

10. Blasting

- a) The Approval Holder shall secure an approval amendment from the Administrator prior to any blasting on this Site.

11. Rehabilitation

- a) The Approval Holder shall post an interim security in a form acceptable to the Department in the amount of \$2,500.00 an acre of disturbed area -Prior To Removing Material From Site.

- b) The interim security shall not exceed one (1) year unless otherwise agreed in writing by the Administrator.
- c) The Approval Holder shall submit a rehabilitation plan to the Department for review by June 30, 2002. The rehabilitation plan shall be revised and updated every three year thereafter and submitted for review. The rehabilitation plan shall include the estimated total cost for labour, equipment, supplies and services of a third party contractor to undertake the following activities:
 - i) surface contouring
 - ii) establishing proper drainage
 - iii) revegetation work
 - iv) any work necessary to reclaim the pit
- d) Before the expiry of the interim security, the Approval Holder shall post a final security which shall be calculated using the rehabilitation plan and factors in item c) above. The value of the final security shall be revised every three years in accordance with the revised rehabilitation plan.
- e) The Approval Holder shall rehabilitate the Site within twelve (12) months of abandonment and in accordance with the latest rehabilitation plan submitted by the Approval Holder in 11 (c) or other terms as specified by the Department.
- f) The Nova Scotia Department of Environment and Labour shall release the security to the Approval Holder after final rehabilitation of the Site has been completed to the satisfaction of the Minister or Administrator. The Approval Holder shall notify the Department when rehabilitation has been completed.
- g) The Approval Holder shall ensure that any security posted for rehabilitation be kept valid for the term of the Approval.

12. Site Specific Conditions

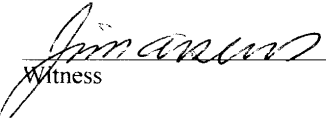
- a) The boundaries of the Site will be cut out and kept reasonably clear of new growth and the corner boundaries shall be clearly marked with permanent markers no less than four feet high.
- b) No topsoil shall be removed from the site. It shall be stockpiled for use in rehabilitating the site.

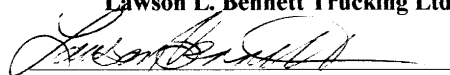
Appendix IV—Proponent & Owner Agreement

This agreement is made this June 6, 2002, between 3051719 Nova Scotia Limited (the "Company") and Lawson L. Bennett Trucking Limited ("Bennett"), and witnesses that, the parties hereto do covenant and agree as follows:

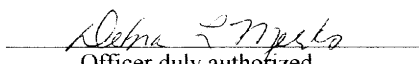
Bennett and the Company have agreed that Bennett may extract sand and gravel (the "materials") from two locations on the property. The locations are identified on a "Topographical Plan Showing Proposed Sand and Gravel Pits" prepared by Derik R. DeWolfe, NSLS dated April 8, 2002. Bennett shall have reasonable access to the Lands for this purpose and shall maintain all roads in a practical location and condition given the respective interests of the parties to the Lands. The location of the roads shall be determined in consultation with the Company. Bennett may extract materials from other locations on the property provided the choice of those other locations (and the roads leading to them) is made in consultation with the Company and is consistent with the Company's use of the property for agricultural purposes.

IN WITNESS WHEREOF the Parties have hereunto set their hands and seals:


Witness

Lawson L. Bennett Trucking Ltd.:

Officer duly authorized


Witness

3051719 Nova Scotia Limited:

Officer duly authorized

Appendix V—Archaeological Resource Inventory

MARITIME ARCHAEOLOGICAL RESOURCE INVENTORY INVENTAIRE DES RESSOURCES ARCHÉOLOGIQUES DES MARITIMES

SITE SURVEY FORM FORMULE DE RELEVÉ DE SITE

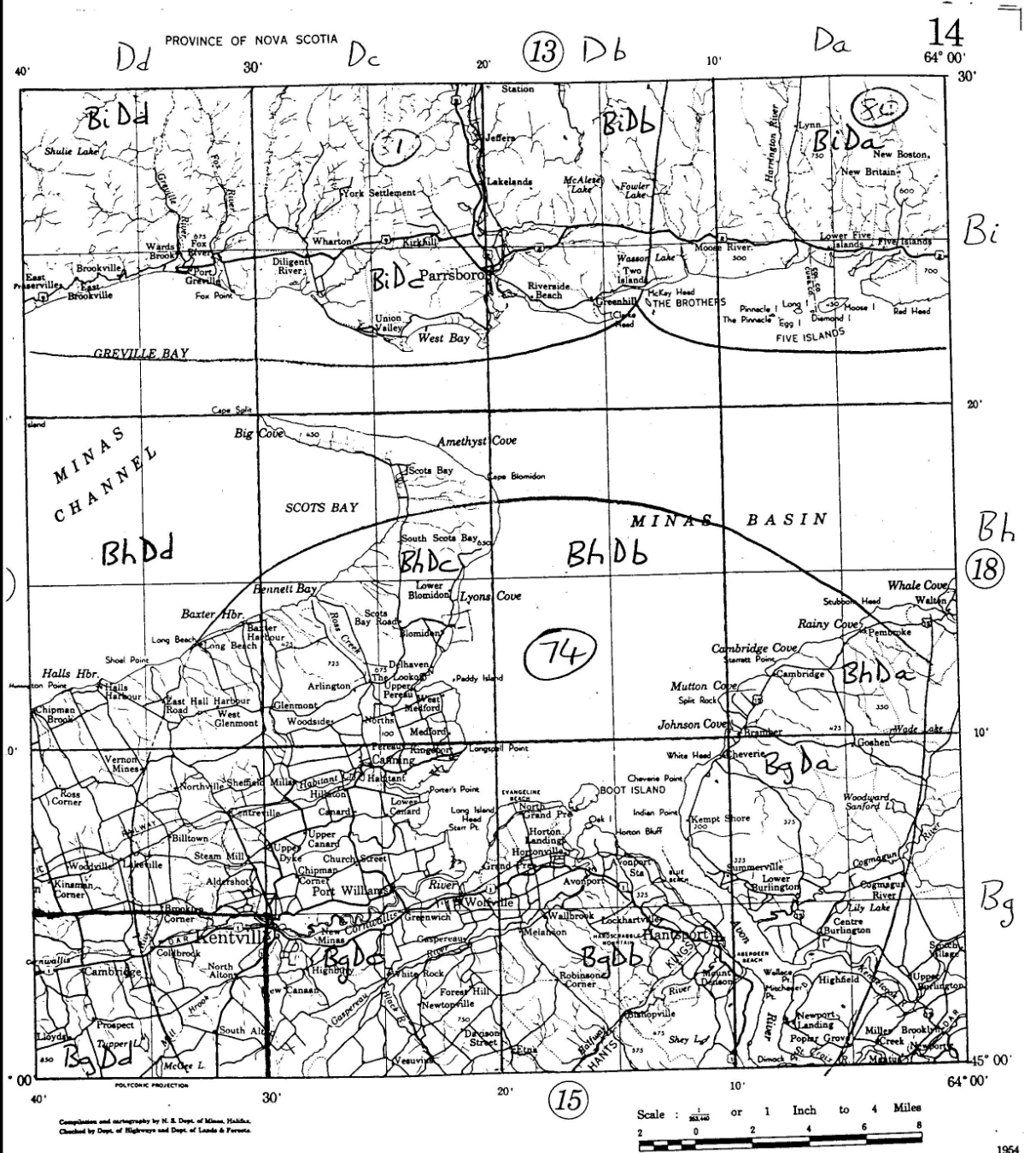
1. Site No. T
Site N° T _____
2. Suggested Site Name
Nom du site (suggéré) _____
3. Site Type (a)
Type de site (a) (ZCY) Burials (ZMR) - 21 H/2
(ZTX) Prehistoric?; Indigenous (ZUTM) - 8192
(ZCU) Micmac?
4. Relative Age
Âge relatif
☒ unknown inconnu ☐ 10,000 + ☐ 3,000 + ☐ 500 + ☐ 500 -
5. Method of Age Determination
Méthode de calcul de l'âge _____
6. Descriptive Location
Description de l'emplacement (ZLO) Kentville
7. Access Location
Lieu d'accès au site _____
8. General Site Description
Description globale du site (ZDE) Erskine stated that, "In the excavation of the ground in front of the Cornwallis Inn to make a shopping centre, an Indian graveyard was unearthed. The date is uncertain."
9. Site Geology
Géologie du site _____
10. Site Vegetation
Végétation du site _____
11. Shoreline Type
Type de littoral _____
12. Man-made Shoreline Structures
Ouvrages du littoral faits de main d'homme _____
13. Site Dimensions
Dimensions du site

(a) observed:	L.	_____	w.	_____
observées:	Long.	_____	Larg.	_____
(b) estimated:	L.	_____	w.	_____
estimatives:	Long.	_____	Larg.	_____
(c) total hectares:	observed	_____	estimated	_____
nombre d'hectares:	observé	_____	estimatif	_____

CH 111

(ZEN)
Site No.
BgDd-1

Appendix VI— Archaeological Resource Map



Appendix VII—Fish Survey Permit

FROM : FCPS

PHONE NO. :

Aug. 05 2003 10:22AM P1



Fisheries and Oceans
Canada

Pêches et Océans
Canada

ATT:
Hendricus Van Wilgenburg

LICENCE

2003-539

Pursuant to Section 52 of the *Fishery (General) Regulations*, this Licence is issued to **Mr. Derick Fritz**, President, Ocean Valley Aquatics, PO Box 754, Middleton, NS, B0S 1P0, telephone (902) 690-7538, fax (902) 678-8351, and persons working under his direct supervision to conduct electrofishing for scientific purposes, subject to the following conditions:

1. That the electrofishing be limited to the following 14 tributaries on the Cornwallis River watershed:

- Rand Brook	- Tupper Lake Brook	- Tupper Brook
- Thomas Brook	- Spital Brook	- Mill Brook
- Morris Brook	- Sharps Brook	- Elderkin Brook
- Fishwick Brook	- Coleman Brook	- Condon Brook
- Rockford Brook	- Beandywine Brook	
2. That electrofishing is to occur only when water temperatures are below 22° Celsius;
3. That all fish captured be returned alive, immediately, to the waters from which they were taken in a manner that causes the least amount of harm and that no fish be retained for any purpose other than the time required to record measurements and observations;
4. That no fish are to be bartered, sold or retained for human consumption;
5. That the Area Director's Office, Fisheries and Oceans Canada, 215 Main Street, Yarmouth, NS, B5A 1C6, (902) 742-0871, be advised 24 hours in advance of the time and locations of all operations;
6. That a copy of this Licence be on site and available for inspection upon request of a fishery officer;
7. That within 30 days of completion of operations an annual summary, including a list of rivers sampled with site descriptors including locations, dates of fishing activity, water temperatures, method of capture, species caught and numbers caught, be made to Fisheries and Oceans Canada, to the attention of Dr. Larry Marshall, PO Box 1006, Dartmouth, NS, B2Y 4A2;
8. That this Licence is valid from date of issue until September 30, 2003;

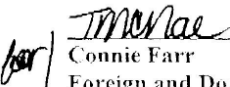
FROM : FCPS

PHONE NO. :

Aug. 06 2003 10:22AM P2

9. That issuance of this Licence implies no commitment by the Minister or Fisheries and Oceans Canada to reissue the Licence in subsequent years.

ISSUED AT DARTMOUTH, NS THIS 4th DAY OF July, 2003.



for | Connie Farr
Foreign and Domestic Licensing Officer
Scotia-Fundy Sector
Maritimes Region

Notice

Proponent: *Lawson Bennett Trucking Ltd.*

R.R.2 Kentville, NS
B0P 3J5

What: Public Awareness Meeting

Where: Cambridge Community Center

When: 7:00 p.m. Thursday, November 21 2002

Why: To explain the details of a proposed ***Sand & Gravel Quarry Expansion*** and to take comments from interested individuals, community members and groups.

Proposed location of the expansion: Cambridge, Kings County, NS
Bordering the south side of Highway 1, extending toward the South Mountain

Purpose of the expansion: The purpose of the quarry expansion is to extract sand primarily for sewage systems and gravel primarily for roadwork.

For further information, contact: Hendricus Van Wilgenburg
1396 Sherman Belcher Rd., R R 2 Centreville, Kings Co., NS. B0P 1J0, or email:
huddy@ns.sympatico.ca, (902) 6787-3844

Appendix IX—Meeting Comment Sheet (Sample)

COMMENT SHEET for RESIDENTS OF CAMBRIDGE & AREA Developer: Lawson Bennett Trucking Ltd. (R.R.1 Kentville, NS)

How did you find out about the meeting? (please check one the following):

Radio ☐ Newspaper ad ☐ Notice ☒ Word of mouth ☒

Other _____

Would you like to **hear more details in the future** regarding this project?

Yes ☒ No ☐

Would you like to **attend another public meeting** to hear more details regarding this project? Yes ☒ No ☐

Would you like a **site-visit** to hear & see more details regarding this project?

Yes ☐ No ☐ *not necessary*

Was this meeting **worthwhile**? Yes ☒ No ☐

Please comment:

I live on south side of Hwy #1 just north of the quarry site.

Do you have any concerns regarding this project not addressed by the above?

Please comment:

Concern about real estate values declining.

Please leave at the meeting, send to, or contact: Hendricus Van Wilgenburg
1396 Sherman Belcher Rd., R R 2 Centreville,
Kings Co., NS. B0P 1J0, or email:
huddy@ns.sympatico.ca,
(902) 678-3844

Appendix X—Meeting Registration

Registration: Sand & Gravel Quarry Expansion
Cambridge Community Center
7:00 p.m. Thursday, November 21 2002

Developer: Lawson Bennett Trucking Ltd.

R.R.1 Kentville, NS

Name	Telephone	Address
Susan L Brown	678-8951	Coldbrook NS
Sheila Spinning	679-3338	Coldbrook NS.
Rehinda Manning	679-0644	Coldbrook
Peter Jolly	638-3823	Cambridge
WILLIAM SAYLOR	679-0561	Cambridge, NS
WILLIAM L. LICK	679-4483	Cambridge NS
BOB MCLEOD	678-1994	CAMBRIDGE, N.S.
Bud LAUZE	679-1151	"
Calvin Sampson	679-0118	"
Letia Longman	679-7174	"
Bob Rapier	679-0799	"
John Williams	678-8980	KENTVILLE
Donna Smith	679-5202	Cambridge
Edna Mills	679-3244	Cambridge
Kevin Mills	580-6477	Cambridge
Howard Smith	538-3275	Cambridge -
Greg Webster	538-9492	Cambridge
Gloria Duino	678-0382	Coldbrook.
Walter Peterson	679-4594	Cambridge
Leona Bergeson	679-4594	Cambridge

