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**PESTICIDES
IN
ONTARIO DRINKING WATER - 1985**

AUGUST, 1987



Ministry
of the
Environment

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Prepared by: Ontario Ministry of the Environment
Water Resources Branch
Drinking Water Section

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EXECUTIVE SUMMARY

In 1984 the herbicide alachlor was detected in several municipal and private water supplies. This prompted an extensive survey of municipal waterworks and private wells in 1985. Alachlor and eight other herbicides [atrazine (plus D-ethyl atrazine), cyanazine, dicamba, metolachlor, metribuzin, prometryne, simazine (plus D-ethyl simazine) and 2,4-DB] were detected in this survey. Health and Welfare Canada were able to provide interim maximum acceptable concentrations (IMAC) for drinking water.

In 15 municipal waterworks, most of the pesticides detected were at levels far below the guideline limits and generally occurred infrequently. Only alachlor was detected above its IMAC and that was found once in the raw water at Dresden; the addition of powdered activated carbon (PAC) during the treatment process removed the alachlor from the finished water. Three other pesticides were detected at concentrations above 1 µg/L: atrazine, metolachlor, and metribuzine: the maximum levels found were 6.4, 5.1 and 2.4 µg/L respectively. These were all found at Dresden, while atrazine was also detected above 1 µg/L at Cayuga. As raw water sources both of these locations use rivers that drain watersheds with extensive agricultural use of pesticides.

Conventional water treatment processes did not reduce the pesticide concentrations but PAC, if added in sufficiently high doses, was effective in reducing or eliminating the pesticide in the finished water.

In 351 private water supplies, selected as susceptible to contamination, pesticides were detected in half of the wells. Most of these wells contained only a few pesticides at low concentrations. A few wells occasionally had pesticide concentrations above the IMAC but these were rarely exceeded on a continuous basis. Most of the wells, positive for pesticides, contained atrazine (plus D-ethyl atrazine) while about 1/3 contained alachlor and another 1/3 contained metolachlor. Metribuzin, simazine (plus D-ethyl simazine), cyanazine and 2,4-DB were detected in from two to ten percent of the positive wells. Prometryne and dicamba were each detected in only one well.

About 60% of shallow and bored wells, including those designated as dug wells and sandpoints, were contaminated by pesticides, while about 40% of drilled wells were contaminated. Drilled wells were no guarantee of uncontaminated water. Where data was available (Alachlor Report), the probable source of much of the contamination was due to poorly sited and/or constructed wells that were frequently subject to overland run-off and pesticides spills in the vicinity of the well.

CONCLUSIONS

Municipal Waterworks

1. Pesticide residues were detected in the raw water at some municipal waterworks but in most cases the concentrations found were very low, far below the IMAC, and usually occurred infrequently.
2. Conventional water treatment processes had essentially no effect on the concentrations of pesticides found in the raw water.
3. Powdered activated carbon (PAC) if present in a sufficiently high dose (well above the dose used for taste and odour control) was effective in reducing the concentration of alachlor, atrazine, metolachlor and possibly other pesticides.
4. Pesticide residues were found in significant concentrations and frequencies in rivers draining watersheds with significant agricultural usage of those pesticides detected.
5. In the treated water no pesticide concentrations exceeded the IMAC's, although if PAC had not been used at Dresden, alachlor would likely have exceeded the IMAC on at least one occasion.
6. The highest pesticide concentrations in raw surface waters were usually found in June, July and August.

Private Wells

1. Pesticide residues were found in 50% of the private wells sampled in southern Ontario and up to six pesticides were detected in one well.
2. Most wells showing positive results contained only a few pesticides, at concentrations well below the IMAC's.
3. A few wells had pesticide concentrations over the IMAC's and a very few wells exceeded these limits on a continuous basis.

4. Ninety-five percent of the wells positive for pesticides contained atrazine, while alachlor and metolachlor were each detected in 30% of the positive wells.
5. Of the wells designated as sandpoints, shallow, dug, or bored, 39% had pesticide residues of 1 µg/L or more and the same percentage had no detectable pesticides. The rest or 22% had pesticide residues below 1 µg/L.
6. Of the drilled wells, 25% had pesticide residues of 1 µg/L or more, while 59% of these wells were free of contamination. The rest or 16% had pesticide residues below 1 µg/L.
7. Of the wells designated as sandpoints, shallow, dug, or bored, 61% were contaminated with pesticides while 41% of the drilled wells were contaminated with pesticides. The latter type was no guarantee of uncontaminated water.
8. Pesticide residues of 1 µg/L were detected in 31% of drilled wells with a depth of <100' but in only 18% of deeper wells.
9. In those wells where the soil type was indicated, there was no obvious correlation between permeability and pesticide contamination, but there are many other factors that could have influenced contamination.
10. In the relatively few wells where it was documented (Alachlor Report), poor well location and construction contributed significantly to their contamination with pesticides and other substances.
11. It appears that any well in an agricultural area, where pesticides are used, may become contaminated with pesticide residues. At a few of those wells the levels may exceed the IMAC's.

RECOMMENDATIONS

Municipal Waterworks

1. Monitoring of raw water for pesticides should be conducted during the spring and summer when peak concentrations would be expected.
2. Monitoring should continue on a weekly basis at least during the peak months at those WTP's where pesticide residues were found regularly.
3. Proper PAC facilities for storage and feeding may be necessary at those WTP's where pesticide residues are often found.
4. Due to the time lag before sample results are obtained, PAC should be added in sufficient dosages during those times of the year when the IMAC's are expected to be exceeded in raw water.

Private Wells

Since any type of well in an agricultural areas where pesticides are used may become contaminated, it is very important that:

1. wells are properly sited, constructed, and maintained to ensure that surface run—off does not contaminate the wells;
2. where possible, deep aquifers are used as drinking water sources;
3. pesticides are handled properly and mixing areas are not adjacent to the well;
4. pesticide applications to agricultural crops should not be made in areas adjacent to the well and should be in accordance with label directions.

INTRODUCTION

In 1984 the herbicide alachlor was detected in several municipal and private drinking water supplies. On the basis of the toxicity data available, Health and Welfare Canada set an interim maximum acceptable concentration (IMAC) of 5 µg/L. As a consequence a program was established in 1985 to sample numerous municipal waterworks, private wells and some ambient locations for alachlor.

The pesticide analyses were done by the Ministry of the Environment (MOE) and the Ontario Ministry of Agriculture and Food (OMAF). Alachlor was the priority compound and every effort was made to expedite the availability of these results. The analysis by gas chromatography/mass spectrometry (GC/MS) did reveal other pesticides. The MOE laboratory, analysing samples almost exclusively from municipal waterworks, was reporting results on alachlor and some other pesticides throughout the sampling period. Most of these results were included in the document entitled "Alachlor Monitoring of Ontario Drinking Water May-November 1985" (the Alachlor Report)¹. The OMAF Laboratory, which analysed samples from private wells, ambient waters and two municipal locations, was able to quickly provide results on alachlor but due to insufficient staff the reporting on other pesticides was left until later. High results for these other pesticides were transmitted qualitatively to the regions but it was not until the middle of December 1985 that a complete data set was available. The data set was subsequently tabulated and corrected, and forms the basis of the present report.

METHODS

For the alachlor study the four MOE regions in southern Ontario selected numerous private wells, municipal waterworks (both surface and ground water), and ambient surface waters to be sampled.¹ In addition there were many other wells sampled infrequently (once or twice) in 1985 by the MOE regions, Ministry of Health (OMH) and OMAF usually in connection with a pesticide spill or request; these were all included in the OMAF data set sent to MOE at the end of 1985 and are included in this report. The Alachlor Report included results from some ambient waters and one municipal waterworks (Dresden) that were on programs other than the alachlor program. In that report only those samples taken during the alachlor program (May—November) were included, while in the present report all the data taken in 1985, that subsequently became available, are included.

Also included in the Alachlor Report were eight samples from five wells in the MOE Northeastern region. These are not included in this report since that region was never part of the monitoring program.

Sampling methods and frequency are outlined in the Alachlor Report.

Samples were analysed by MOE and OMAF using methods and quality assurance — quality control procedures as outlined in the Alachlor Report.

In the Alachlor Report only pesticide concentrations at 1.0 µg/L or greater were reported numerically. Values between 0.5 and 1.0 µg/L were reported as 'traces' only. In this report all numerical values obtained are presented. The OMAF laboratory reported pesticide concentrations below 0.1 µg/L with the same apparent confidence in the value as those above 1.0 µg/L. The MOE laboratory attached the suffix <T to low values to indicate they had less confidence in the accuracy of the value. This suffix will be used in this report where it was used in the lab report.

GUIDELINES FOR DRINKING WATER

At Ontario's request Health and Welfare Canada (January 1986) developed the following IMAC's for the pesticides that were found in wells:

Atrazine (plus D-ethyl Atrazine)	46 µg/L
Cyanazine	10 µg/L
Dicamba	87 µg/L
Metolachlor	105 µg/L
Metribuzin	60 µg/L
Prometryne	1 µg/L
Simazine (plus D-ethyl Simazine)	10 µg/L
2,4 Dichlorophenoxybutyric Acid (2,4-DB)	18 µg/L

Numbers were, "based on ADI (allowable daily intake) and NDI (negligible daily intake) data, factored for lifetime intake of a 70 kg man consuming 2 litres of water per day".²

RESULTS

The data in this report has been presented in part, in the published Alachlor Report and has all been presented at the Alachlor Review Board Hearing in 1986. The Hearings were to determine if alachlor would be reinstated for use in Canada.

Municipal Waterworks

Municipal waterworks were sampled for pesticides as part of the alachlor program and existing MOE monitoring programs. Table 1 gives the results of samples taken at those waterworks (15) that showed positive results for alachlor or had samples analysed for other pesticides. Figure 1 indicates where the waterworks are located in Ontario and the type of raw water source. All of these are surface water supplies. Municipal ground water supplies were negative for alachlor and were not analysed for other pesticides.

Alachlor

Besides those results summarized in Table 1, there were an additional 33 locations (768 samples) that had the raw water tested for alachlor and 23 locations (115 samples) that had the treated water sampled for alachlor. Alachlor was not detected in any of these samples. Details on these additional locations are in the Alachlor Report.

Table 1 lists 14 water treatment plant (WTP) locations that were sampled for alachlor in their raw water with a total of 652 samples being analysed. The number of samples at each location ranged from 22 to 115. There were 11 locations that had positive samples but 10 of these had only trace values (0.5 - <1.0 µg/L). The number of samples with trace concentrations at these latter locations varied from one to three. Dresden was the single location with concentrations of alachlor in the raw water above 1 µg/L. Six of seven of these results were below 3.5 µg/L. The maximum concentration found in the raw water was 9.0 µg/L which exceeded the IMAC of 5.0 µg/L.

There were 14 locations that had their treated water analysed for alachlor with a total of 237 determinations (Table 1). The number of samples from each location varied from one to 93. Alachlor was found in the treated water at two locations (Oneida and Paisley) where single samples were found with trace levels of alachlor.

In 1985, powdered activated carbon (PAC) was added at four locations (Dresden, Alvinston, Harrow and Mitchell Bay) at dosages high enough (30-50 mg/L) to reduce alachlor concentrations. Of these locations, alachlor was only detected in the raw water at Dresden and Alvinston and not in the treated water at any of the water plants.

Atrazine (plus D-ethyl atrazine for OMAF analysis)

There were 9 locations with a total of 120 samples being analysed for atrazine in the raw water. Dresden had 54 samples analysed and the other locations had from one to 23 samples analysed. Three locations had positive results for atrazine in their raw water. Dresden had 39 positive samples, Cayuga had five, and Paisley had three. Concentrations above one microgram per litre were detected at Dresden (22 times with a maximum result of 6.4 µg/L) and at Cayuga (twice with a maximum result of 1.7 µg/L).

In the treated water, atrazine was sampled for at eight waterworks, with a total of 111 samples being analysed. Forty eight of these samples were from Dresden and from one to 23 samples were from the other treatment plants. Atrazine was detected at three waterworks, the same three where the compound was detected in the raw water. At Paisley, it was detected once with a concentration of 0.2 <T µg/L. At Cayuga, it was detected four times with a maximum concentration of 1.5 µg/L. At Dresden, atrazine was detected 21 times with a maximum concentration of 4.3 µg/L. During the period from June to October inclusive, when PAC was being added at Dresden in significant dosages, the concentration of atrazine was reduced on 21 occasions. During this period, when both raw and treated samples were analysed, atrazine was detected in 22 raw water samples (maximum concentration 6.4 µg/L) and in nine treated water samples (maximum concentration 1.4 µg/L).

Metolachlor

In 1985, metolachlor was not analysed at the MOE laboratory; the only results were from Dresden where some of the samples were analysed at the OMAF laboratory.

In the raw water, six of 31 samples were positive with a range of 0.4 to 5.1 µg/L. None of the 28 samples of treated water showed any metolachlor. This reduction was probably due to the addition of PAC.

Metribuzin

Analysis for metribuzin was conducted on samples of raw and treated water from eight waterworks. There were a total of 121 samples from raw water and 111 samples from treated water. The only positive samples were two of the 54 raw water samples from Dresden. The concentrations were 0.8 and 2.4 µg/L. These occurred during the period of high PAC addition which may account for the absence of metribuzin in the treated water.

Simazine (plus D-ethyl simazine for OMAF analysis)

Simazine was analysed for at eight locations as shown in Table 1. There were 121 samples of raw water and 111 samples of treated water. One positive result was found in the raw water at Dresden (concentration 0.3 <T). None was detected in the treated water possibly due to PAC addition.

Prometryne

Prometryne was sampled for at eight locations with a total of 121 raw samples and 111 samples of treated water. None of this pesticide was detected.

Cyanazine

Cyanazine was sampled for at eight waterworks with a total of 121 raw water samples and 111 treated water samples. It was detected in one raw water sample from Dresden with a concentration of 0.3 µg/L.

2,4-DB

The pesticide 2,4-DB was sampled for at eight waterworks with a total of 81 raw water samples and 76 treated water samples. It was detected in one sample of raw water from Dresden with a concentration of 0.9 <T µg/L.

Dicamba

Dicamba was sampled for at eight waterworks with a total of 81 raw and 76 treated samples being analysed. Dicamba was found on one sampling date in Paisley in both the raw and treated water. The concentrations were 0.1 <T and 0.2 <T respectively. PAC was not used at this waterworks.

Private Wells

Pesticides found in private wells are summarized in Appendix A where information is provided on the number of samples taken, the number of positive samples for each pesticide (which in this report refers to any sample with a detectable concentration), and the range of concentrations. The initial sample locations in each regional list usually had one or two samples taken; these were the spill and request samples. The rest of the sampling locations in each region list usually were sampled frequently and were part of thealachlor program.

There were a total of 351 wells sampled in 1985, with a total of 1881 samples being analysed usually for seven pesticides -alachlor, atrazine (plus D-ethyl atrazine), metolachlor, metribuzin, simazine (plus D-ethyl simazine), prometryne, cyanazine and occasionally for two other pesticides 2,4-DB and dicamba where contamination was thought to be present. All of these analyses were done by the OMAF laboratory in Guelph.

It should be emphasized that the wells in this report were not selected at random (see Alachlor Report) and were not meant to be a representative sample of all private wells in Ontario. They may be representative of the segment of private wells that are susceptible to pesticide contamination since many selected wells were: in areas where contamination was found previously; where corn and soybeans were grown; shallow dug wells or sandpoints; and located in sand or gravel areas.

Table 2 gives a regional breakdown of the total number of wells sampled (351). There were a total of 100 wells designated as house wells and were presumably used for drinking and food preparation. Seventy-two of these wells contained some pesticide residue during the sampling period. It should be noted that many of the wells had no "use" designation (see

Appendix A) and may have been used as drinking water sources.

Table 2 also tabulates the number of positive wells for each pesticide. About one half of the wells contained atrazine (plus D-ethyl atrazine) (169 of 351); about one seventh of the wells had alachlor and metolachlor and there were lesser numbers of the other pesticides. The number of positive wells for each region in Table 2 sometimes exceeds the number of wells sampled due to some wells containing more than one pesticide. Table 3 tabulates this information. Seventy five wells had more than one pesticide and up to six pesticides were found in one well. There were a total of 178 wells positive for one or more pesticides.

The number of positive wells for each pesticide with maximum concentrations above the IMAC, between the IMAC and 20% of IMAC, and below 20% of IMAC are tabulated in Table 4. Twenty percent of the IMAC was chosen for the breakdown because for alachlor 1 µg/L, which was the initial reporting level, happens to be 20% of the IMAC of 5 µg/L. For comparative purposes 20% of the IMAC for the other pesticides was chosen for summarizing the analyses concentrations.

Alachlor

There were 12 wells with maximum concentrations over the IMAC of 5 µg/L; 27 wells with maximum concentrations below 1 µg/L (20% of IMAC); and 14 wells with maximum concentrations between these limits.

Atrazine (plus D-ethyl atrazine)

There were 6 wells with maximum concentrations over the IMAC of 46 µg/L and 146 wells with maximum concentrations under 20% of the IMAC (9.2 µg/L). There were 17 wells with maximum concentrations between these limits.

Metolachlor

There were 4 wells with maximum concentrations above the IMAC of 105 µg/L; 39 wells with maximum concentrations below 20% of the IMAC (21 µg/L); and 9 wells with maximum

concentrations between these limits.

Metribuzin

There were 2 wells with maximum concentrations over the IMAC of 60 µg/L; 18 wells with maximum concentrations less than 20% of IMAC (12 µg/L); and one well with a maximum concentration between these limits.

Simazine (plus D-ethyl Simazine)

There were 2 wells with maximum concentrations above the IMAC of 10 µg/L; 6 wells with maximum concentrations below 20% of the IMAC (2 µg/L); and 4 wells with maximum levels between these limits.

Prometryne

There was only one well contaminated with this pesticide. The only positive sample had a concentration of 0.84 µg/L, which was between the IMAC of 1 µg/L and 20% of the IMAC.

Cyanazine

There were no wells with maximum concentrations over the IMAC of 10 µg/L but there were 2 wells with maximum concentrations above 20% of the IMAC (2 µg/L) and 15 wells below 20% of the IMAC.

2,4-DB

There was one well with a maximum concentration above the IMAC of 18 µg/L, another below 20% of the IMAC (3.6 µg/L) and a third with a maximum concentration between these values.

Dicamba

There was only one well with positive results for this pesticide. The concentrations were all less than 20% of the IMAC.

Comparison with Alachlor Report

The Alachlor Report used data available at the time of 1648 samples from 305 private wells. The data in this report from all of 1985, deals with 1881 samples from 351 private wells. These differences are due to several reasons including: the exclusion of the samples from the Northeastern Region; more samples being analysed before or after the cut-off dates for the Alachlor Report (May 23, 1985 to Dec. 3, 1985); and errors in sample identification that were not corrected until after the Alachlor Report was completed.

DISCUSSION

Municipal Waterworks

There were nine pesticides analysed in the raw water samples at 15 municipal waterworks. Prometryne was not detected in any of the samples, while simazine, cyanazine, 2,4 DB and dicamba were detected only once at levels less than 1 µg/L. Metribuzin was detected twice at one WTP with a high of 2.4 µg/L. Atrazine was detected at three of the WTP's but in 47 positive samples the highest value was 6.4 µg/L. Metolachlor was only analysed in 31 samples from one WTP and six were positive with a maximum of 5.1 µg/L.

All of the above pesticides were detected at levels far below the IMAC's. The highest atrazine result represented only 14% of the Interim Maximum Acceptable Concentration (IMAC) and the maximum results for the other pesticides (except alachlor) represented at most 5% of the IMAC. Alachlor was the only pesticide that exceeded its IMAC (5 µg/L) in the raw water samples. This only occurred on one occasion when the concentration in the raw water at Dresden was 9.0 µg/L. From this same source there were 13 other positive analyses, all below 5 µg/L, and 100 other sample results where alachlor was not detected.

Pesticide residues were detected in the raw water samples of many waterworks, usually at extremely low levels (<1 µg/L) and not very often. There were very few locations where pesticides were found and where sufficient samples were taken of the raw and treated water to determine the effect of the treatment processes on their removal. The only possible candidates are Cayuga and Dresden. Both of these water plants have conventional treatment trains consisting of coagulation, flocculation, sedimentation, filtration and disinfection. In addition, PAC was added at Dresden during part of the 1985 sampling period. The monthly dosage rates (mg/L) for May to December were as follows: 17.2, 45.3, 48.1, 43.7, 31.2, 29.2, 4.4 and 4.4.

At Cayuga, atrazine was detected five times in the raw water and four times in the treated water. The concentrations were essentially unchanged by the treatment processes. At Dresden, during the period PAC was not being added at significant dosages (before June and after October; added for taste and odour control), atrazine was frequently detected in the raw and treated water; again the treatment processes had essentially no effect on the concentration. However, when the PAC was added at dosages above 29 mg/L, alachlor was absent in the treated water when it was detected nine times in the raw water. During this period the concentrations of atrazine were significantly reduced in the treated water on 21 occasions. At Dresden, during the time PAC was being added, metribuzin, simazine and 2,4-DB were detected in the raw water but not in the corresponding treated water samples.

Pesticide residues were rarely detected at water plants using the Great Lakes as raw water sources. They were found in rivers that drain agricultural areas. Their high occurrence in the Sydenham River (Dresden) may indicate higher pesticide use or certain soil conditions or farming practices that tend to allow pesticide residues to enter surface waters (e.g. drained fields).

The pesticides analysed in this study are all herbicides used to control certain grasses and weeds on agricultural fields. The application is usually in the spring, often before the crop emerges. The sampling for pesticides other than alachlor was only comprehensive at a few locations, those with the larger numbers of samples; however, it was apparent at those locations that the highest concentrations of most pesticides occurred in June, July and August. Atrazine was found in the Dresden raw water throughout the year and the concentration was variable probably due to run-off caused by rain events.

Private Wells

The 1985 sampling program selected private wells that were in areas susceptible to contamination with pesticides. Of the 351 wells sampled, 109 wells had pesticide concentrations equal to or above 1 µg/L and 69 others had pesticide concentrations below that value.

Where the information was available a brief well description consisting of depth, type of construction and type of soil was included in Appendix A. From this data there were 175 wells designated as sandpoints, shallow, dug or bored. Sixty-nine of these wells had pesticide concentrations equal to or greater than 1 µg/L and another 38 wells had pesticide concentrations below 1 µg/L. No pesticide residues were found in 68 of these types of wells.

Seventy-one private wells were designated as drilled. Of these, 18 had pesticide residues of 1 µg/L or more and 11 others had residue levels below that value. Forty-two drilled wells had no detectable pesticide contamination.

Sixty-three of the drilled wells had the depth recorded. For the purpose of this report a well depth of $\geq 100'$ is a deep well. The data indicates that: approximately equal numbers of shallow and deep wells had no contamination (19 and 18 respectively); an equal number (5) of shallow and deep wells had pesticide residues < 1 µg/L; there were more shallow wells (11) than deep wells (5) with pesticide residues 1 µg/L. Of the 5 deep wells, 3 were directly or indirectly contaminated by pesticide spills and one of the 11 shallow wells was contaminated by surface run-off (see Alachlor Report, Appendix H).

There were 214 wells where the major soil type was identified. In the permeable types including sand, gravel, and fractured limestone there were 59 pesticide contaminated wells and 51 other wells with negative results. In less permeable soil types (clay and loam) there were 59 wells with pesticide contamination and 45 wells with no pesticide residues detected.

In the Alachlor Report, information was provided on the probable source of contamination of the wells that contained alachlor at 1 µg/L or greater. All of these wells were also contaminated with at least one other pesticide and some had elevated nitrate and potassium levels. Many of these wells were shallow, poorly sited and/or constructed and were often contaminated via overland run-off or spills in the vicinity of the well. These conditions may have caused much of the contamination in other wells in the present report.

BIBLIOGRAPHY

1. Alachlor Report - "Alachlor Monitoring of Ontario Drinking Water, May - November 1985", prepared by Ontario Ministry of the Environment December 1985.
2. Interim Drinking Water Guidelines prepared by Health and Welfare Canada, January 8, 1986.

LEGEND FOR TABLES AND APPENDIX

ALA	- Alachlor
ATR	- Atrazine
DE-ATR	- D-Ethyl Atrazine
MTO	- Metolachlor
MTB	- Metribuzin
SIM	- Simazine
DE-SIM	- D-Ethyl Simazine
CYAN	- Cyanazine
PROM	- Prometryne
2,4-DB	- 2,4 Dichlorophenoxybutyric Acid
DICAM	- Dicamba
ND	- Not Detected
<T	- A suffix used by MOE laboratory on low concentrations to indicate less confidence in the accuracy of the value.

TABLE 1. Pesticides In The Raw And Treated Water At Municipal Waterworks*.
[all samples analysed by MOE except Dresden (OMAF)]

LOCATION	ALACHLOR		ATRAZINE		METOLACHLOR		METRIBUZIN		SIMAZINE		PROMETRYNE		CYANAZINE		2,4-DB		DICAMBA		
	RAW	TRTD	RAW	TRTD	RAW	TRTD	RAW	TRTD	RAW	TRTD	RAW	TRTD	RAW	TRTD	RAW	TRTD	RAW	TRTD	
Alexandria	30(1)**	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Range µg/L	Tr	0																	
Alvinston	57(3)	44	2	2	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2
Range µg/L	Tr	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0	0
Brantford	39(1)	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Range µg/L	Tr	0																	
Cayuga	38(2)	2	17(5)	18(4)	-	-	18	18	18	18	18	18	18	18	17	18	17	18	18
Range µg/L	Tr	0	0.2<T- 1.7	0.1<T- 1.5			0	0	0	0	0	0	0	0	0	0	0	0	0
Casselman	32(1)	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Range µg/L	Tr	0																	
Delhi	38(1)	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Range µg/L	Tr	0																	
Dresden	84(11)	65	23(10)	20(3)	-	-	23(1)	20	23(1)	20	23	20	23	20	20(1)	17	20	17	17
Range µg/L	Tr-9.0	0	0.1<T- 2.6	0.3<T- 0.5<T			2.4	0	0.3<T	0	0	0	0	0	0.9<T	0	0	0	0
Dresden (OMAF)	31(3)	28	31(29)	28(18)	31(6)	28	31(1)	28	31	28	31	28	31(1)	28	-	-	-	-	-
Range µg/L	0.5- 3.0	0	0.3- 6.4	0.1- 4.3	0.4- 5.1	0	0.8	0	0	0	0	0	0.3	0					

TABLE 1 Continued

LOCATION	ALACHLOR		ATRAZINE		METOLACHLOR		METRIBUZIN		SIMAZINE		PROMETRYNE		CYANAZINE		2,4-DB		DICAMBA	
	RAW	TRTD	RAW	TRTD	RAW	TRTD	RAW	TRTD	RAW	TRTD	RAW	TRTD	RAW	TRTD	RAW	TRTD	RAW	TRTD
Harrow	69	49	23	21	-	-	23	21	23	21	23	21	23	21	19	18	19	18
Range µg/L	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0
Oneida (no treatment)	-	23(1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Range µg/L		Tr																
Paisley	36(2)	2(1)	19(3)	18(1)	-	-	19	18	19	18	19	18	19	18	18	16	18(1)	16(1)1
Range µg/L	Tr	Tr	0.1<T- 0.2<T	0.2<T			0	0	0	0	0	0	0	0	0	0	0.1<T	0.20
Port Rowan	22(2)	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Range µg/L	Tr	0																
Port Stanley	44	-	1	1	-	-	1	1	1	1	1	1	1	1	1	1	1	1
Range µg/L	0		0	0			0	0	0	0	0	0	0	0	0	0	0	0
Stoney Point	52(2)	2	2	1	-	-	2	1	2	1	2	1	2	1	2	2	2	2
Range µg/L	Tr	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0
Wallaceburg	43	6	2	2	-	-	2	2	2	2	2	2	2	2	2	2	2	2
Range µg/L	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0
Windsor	37(1)	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Range µg/L	Tr	0																

* waterworks sampled only for alachlor with negative results are dealt with in the Alachlor Report

** no. samples taken (no. positive)

TABLE 2. Number of Positive Wells For Each Pesticide.

	Total No. Wells	NO. OF POSITIVE WELLS									
		Any Pesticides	ALA	ATR & DE-ATR	MTO	MTB	SIM & DE-SIM	PROM	CYAN	2,4-DB	DICAM
Southwest	214	112	35	107	42	14	9	1	12	-	-
West Central	29	11	1	11	2	1	0	0	0	-	-
Central	59	29	9	27	3	2	2	0	1	-	-
Southeast	49	26	8	24	5	4	1	0	4	3	1
TOTAL	351	178	53	169	52	21	12	1	17	3	1

TABLE 3. Number of Wells Positive For Increasing Numbers of Pesticides.

NO. PESTICIDES PER WELL	0	1	2	3	4	5	6
Southwest	102	64	15	15	9	9	0
West Central	18	8	2	1	0	0	0
Central	30	17	9	3	0	0	0
Southeast	23	14	6	2	3	0	1
TOTAL	173	103	32	21	12	9	1

TABLE 4. Number of Positive Wells For Each Pesticide With Max. Concentrations Above the IMAC, Between The IMAC and 20% of the IMAC, and Below 20% of the IMAC.

Pesticides	Alachlor			Atrazine Plus D-Ethyl Atrazine					Metolachlor			Metribuzin			Simazine Plus D-Ethyl Simazine			Prometryne			Cyanazine			2,4-DB			Dicamba		
	<1	1-5	>5	<9.2	9.2 -46	>46	< 21	21- 105	> 105	<12	12- 60	>60	<2	2- 10	>10	<0.2	0.2 -1	>1	<2	2- 10	>10	<3.6	3.6 -18	>18	<17.4	17.4 -87	>87		
Southwest	17	8	10	90	12	5	31	7	4	12	1	1	3	4	2	0	1	0	10	2	0	-	-	-	-	-	-		
West Central	1	0	0	10	1	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-		
Central	6	2	1	24	3	0	3	0	0	2	0	0	2	0	0	0	0	0	1	0	0	-	-	-	-	-			
Southeast	3	4	1	22	1	1	5	0	0	3	0	1	1	0	0	0	0	0	4	0	0	1	1	1	1	0	0		
TOTAL	27	14	12	146	17	6	39	9	4	18	1	2	6	4	2	0	1	0	15	2	0	1	1	1	1	0	0		

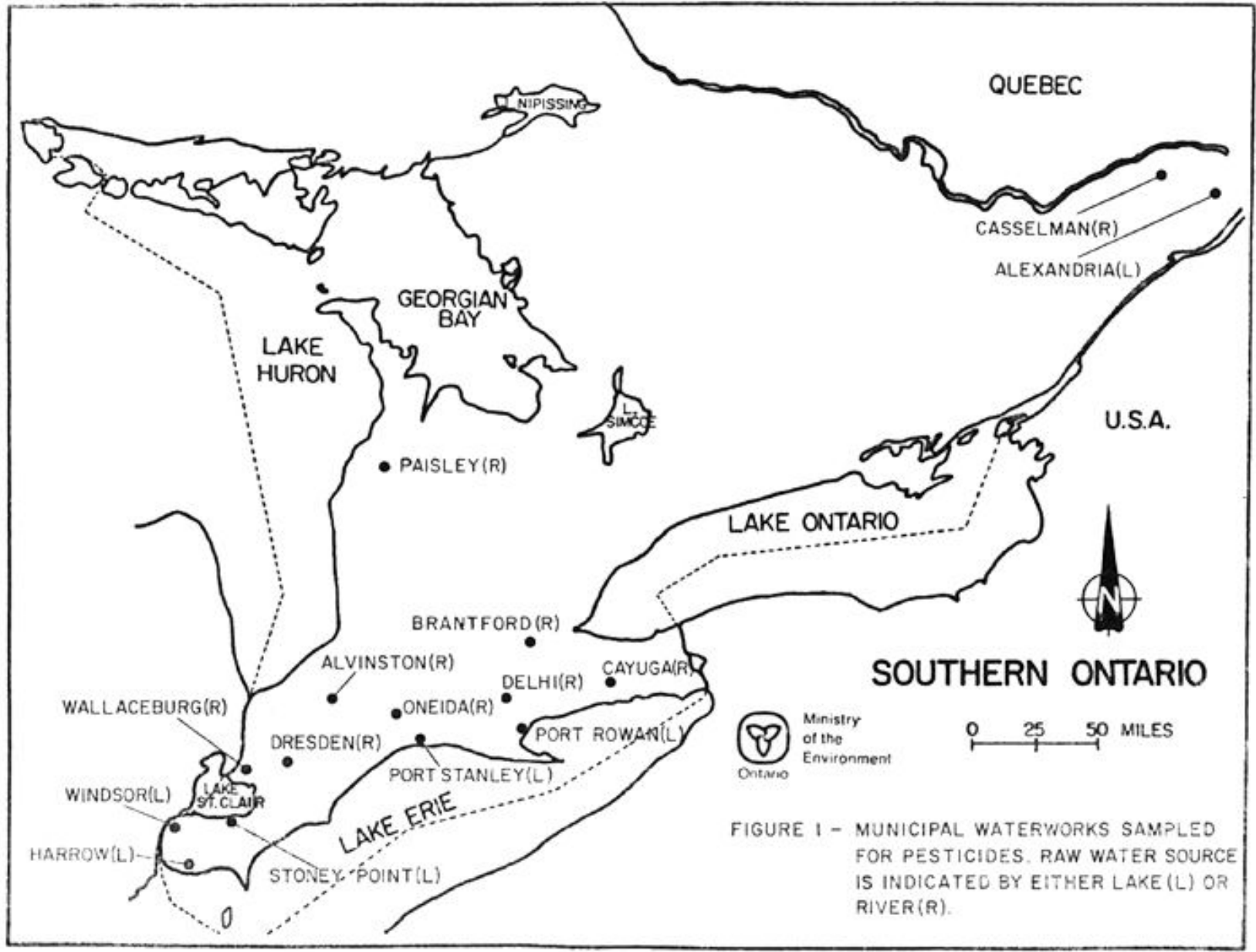


FIGURE 1 - MUNICIPAL WATERWORKS SAMPLED FOR PESTICIDES. RAW WATER SOURCE IS INDICATED BY EITHER LAKE (L) OR RIVER (R).

APPENDIX: SUMMARY OF PESTICIDES IN PRIVATE WELLS - SOUTH WEST REGION

ID #	DEPTH / TYPE	SOIL TYPE	USE	COUNTY / TWP	#SMP	ALA		ATR+DEATR		MTO		MTB		SIM+DSIM		PROM		CYAN		2,4-DB		DICAMB	
						+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE
SW 84-11				Kent, Orford	2	0		2	3.4 - 5.8	0		0		0		0		0					
SW 84-2				Mdlsx, Mosa	1	0		1	0.2	0		0		0		0		0					
SW 84-23				Huron, Hay	1	0		1	0.4	0		0		0		0		0					
SW 84-3				Mdlsx, Mosa	1	0		0		0		0		0		0		0					
SW 84-4				Mdlsx, Mosa	1	0		0		0		0		0		0		0					
SW 84-5				Mdlsx, Mosa	1	0		0		0		0		0		0		0					
SW 84-7	Deep Well			Mdlsx, Caradoc	1	0		0		0		0		0		0		0					
SW 84-7	Shallow Well			Mdlsx, Caradoc	1	0		1	6.7	0		0		0		0		0					
SW OMAF 01	60' Drilled	Silt-loam		Oxford, SW Oxford	1	0		1	0.44	0		0		0		0		0					
SW OMAF 02				Bruce, Huron	1	0		0		0		0		0		0		0					
SW OMAF 03			House	Mdlsx, Caradoc	1	0		0		0		0		0		0		0					
SW OMAF 03	12' Dug	Sand-Loam	Greenhouse	Mdlsx, Caradoc	3	3	0.47-1.3	3	76-160	3	20-51	0		2	8.4-9.3	0		0					
SW OMAF 04	10' Dug	Clay		Kent, Harwich	1	0		0		0		0		0		0		0					
SW OMH 03 (WC)	6' Spring	Sand-Clay		Perth, N. Easthope	1	0		0		0		0		0		0		0					
SW X01				Elgin, Bayham	1	0		0		0		0		0		0		0					
SW X02	Shallow Well			Bruce, Brant	1	0		0		0		0		0		0		0					
SW X03	44' Sandpoint	Sand		Mdlsx, Caradoc	1	0		1	34	1	3.9	0		1	19	0		0					
SW X04	100' Drilled	Gravel	House	Huron, Tuckersmith	1	0		0		0		0		0		0		0					
SW X04	23' Bored	Clay	Store	Huron, Tuckersmith	1	0		1	27	0		0		0		0		0					
SW X05	Spring			Oxford, Zorra	1	0		1	0.06	0		0		0		0		0					
SW X06	0' Spring	Clay	House	Perth, Blanshard	1	0		1	0.08	0		0		0		0		0					
SW X06 (WC)	35' Dug	Sand		Elgin, Yarmouth	1	0		0		0		0		0		0		0					
SW X07				Lambton, Bosanquet	1	0		0		0		0		0		0		0					
SW X08				Lambton, Bosanquet	1	0		0		0		0		0		0		0					
SW X09	18' Sandpoint	Sand		Essex, Clchstr S.	1	0		0		0		0		0		0		0					
SW X10	Shallow well			Lambton, Bosanquet	1	0		0		0		0		0		0		0					
SW X11	120' Drilled	Clay		Bruce, Huron	1	0		0		0		0		0		0		0					
SW X12				Elgin, Malahide	2	0		2	0.33-1.67	0		0		0		0		0					
SW X13	Shallow well			Lambton, Bosanquet	1	0		0		0		0		0		0		0					
SW X14	15' Shallow			Kent, Orford	1	0		0		0		0		0		0		0					
SW X16	52'			Kent, Camden	1	0		0		0		0		0		0		0					
SW X17				Elgin, Yarmouth	2	0		0		0		0		0		0		0					
SW X18				Mdlsx, Metcalfe	1	0		0		0		0		0		0		0					
SW X19				Mdlsx, London	1	0		0		0		0		0		0		0					
SW X20				Lambton, Sarnia	2	0		1	1.0	0		0		0		0		0					
SW X21	7' Spring			Kent, Camden	1	0		0		0		0		0		0		0					
SW X22				Mdlsx, Ekfrid	2	0		0		0		0		0		0		0					
SW X23	Drilled			Mdlsx, W. Nissouri	1	0		0		0		0		0		0		0					
SW X24	Drilled			Lambton, Bosanquet	1	0		0		0		0		0		0		0					
SW X25				Essex, Maidstone	1	0		1	0.18	0		0		0		0		0					
SW X26				Mdlsx, Lobo	1	0		0		0		0		0		0		0					
SW X27	120' Drilled	Clay	House	Huron, Ashfield	2	0		0		0		0		0		0		0					
SW X28	Shallow Well			Lambton, Bosanquet	1	0		0		0		0		0		0		0					
SW X29	20', Dug	Clay		Huron, Manioc,	1	0		0		0		0		0		0		0					
SW X30	100' Drilled	Clay		Huron, Goderich	1	0		1	0.55	0		8		0		0		0					
SW101	0' Spring	Sand		Huron, W. Wawanosh	4	0		3	0.07-0.19	0		0		0		0		0					
SW102	1B' Sandpoint	Loam		Kent, Howard	12	0		0		0		0		0		0		0					
SW103	16' Sandpoint	Clay		Kent, Chatham	10	0		0		0		0		0		0		0					
SW104	80' Drilled			Elgin, Bayham	5	0		1	38.04	1	11	0		0		0		0					
SW105	20' Dug	Clay-Sand		Mdlsx, Caradoc	11	0		0		0		0		0		0		0					
SW106	30' Dug		House, Barn	Lambton, Euphemia	11	2	0.12-0.36	3	0.17-0.51	0	1.2	0		0		0		0					

APPENDIX (cont'd) SUMMARY OF PESTICIDES IN PRIVATE WELLS - SOUTH WEST REGION

ID #	DEPTH / TYPE	SOIL TYPE	USE	COUNTY / TWP	#SMP	ALA		ATR+DEATR		MTO		MTB		SIM+DSIM		PROM		CYAN		2,4-DB		DICAMB	
						+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE
SW107	20' Dug	Loam		Kent, Orford	16	1	1.0	1	10.68	0		0		1	1.45	0		1	1.4				
SW107	Sandpoint		House	Kent, Orford	1	0		0		0		0		0		0		0					
SW108	Dug			Elgin, Yarmouth	6	1	0.80	4	0.09-4.5	0		1	1.6	0		0		0					
SW109	Dug	Sand		Elgin, Bayham	5	0		0		0		0		0		0		0					
SW110	17' Dug	Clay-Loam	House	Kent, Raleigh	21	6	0.14-1.1	9	0.11-1.05	7	0.99-68	0		0		0		1	1.4				
SW111	100' Dug	Clay-Loam		Lambton, Warwick	8	0		0		1	1.5	0		0		0		0					
SW112	13' Sandpoint	Clay-Loam		Kent, Howard	9	0		1	1.0	0		0		0		0		0					
SW113	Dug			Mdlsx, Lobo	12	0		2	5.3-6.05	1	0.87	0		0		0		0					
SW114	22' Dug	Clay-Loam	House	Kent, Raleigh	20	1	0.16	3	0.05-0.97	1	0.22	0		0		0		0					
SW115	20' Dug			Kent, Howard	12	0		0		0		0		0		0		0					
SW116				Bruce, Saugeen	9	0		6	0.25-8.2	0		0		0		0		0					
SW117	3' Dug	Sand		Huron, Hullett	9	0		1	0.15-3.09	0		0		0		0		0					
SW118	16' Sandpoint	Clay-Loam	House, Barn	Kent, Howard	24	4	0.18-0.57	10	0.13-2.24	0		0		0		0		0					
SW119	Dug			Elgin, Malahide	5	0		1	1.2	0		0		0		0		0					
SW120				Lambton, Euphemia	8	0		2	0.03-0.72	0		0		0		0		0					
SW121				Lambton, Euphemia	10	0		2	0.63-2.54	0		0		0		0		0					
SW122	25' Dug	Sand		Elgin, Bayham	11	0		6	0.10-1.61	0		0		0		0		0					
S11123				Lambton, Euphemia	8	0		2	0.06-0.40	0		0		0		0		0					
SW124				Lambton, Euphemia	9	0		2	0.21-0.51	0		0		0		0		0					
SW125	23' Dug	Sand	House, Farm, Spill	Essex, Clchstr S.	20	8	0.11-55	6	0.04-2.7	2	1.2-1.4	0		1	5.21	0		0					
SW125	New Well			Essex, Clchstr S.	1	0		0		0		0		0		0		0					
SW126	Dug			Elgin, Bayham	12	1	0.20	1	0.78	2	1.3-6.1	0		0		0		0					
SW12B	Dug	Sand		Elgin, Malahide	10	0		0		0		0		0		0		0					
SW129	Dug	Sand		Elgin, Yarmouth	4	0		2	0.15-0.37	0		0		0		0		0					
SW130	Dug			Mdlsx, Caradoc	8	0		1	16.34	1	6.8	0		0		0		0					
SW131	30' Dug	Loam	House	Mdlsx, Caradoc	19	1	0.30	3	0.09-4.12	1	6.9	0		0		0		0					
SW132	8' Dug	Clay		Kent, Romney	12	0		1	0.03	0		0		0		0		0					
SW133				Huron, Stephen	8	0		3	0.06-7.04	0		0		0		0		0					
SW134	25' Sandpoint	Sand-Loam	House, Barn	Mdlsx, Caradoc	23	7	0.17-0.35	23	28.0-174.3	23	90-1300	0		5	1.7-4.9	1	0.84	0					
SW115	Sandpoint			Kent, Walpole Is,	5	0		0		0		0		0		0		0					
SW136				Essex, Sandwich S.	1	0		1	0.97	1	0.69	0		0		0		0					
SW137	12' Dug	Loam	House, Barn	Kent, Orford	10	1	0.62	2	0.29-1.66	1	1.2	1	0.83	0		0		0					
SW138	14' Sandpoint		House, Barn	Kent, Orford	11	0		3	0.07-1.07	0		0		0		0		0					
SW139	Crib			Elgin, Bayham	7	0		3	0.70-19.31	0		0		0		0		0					
SW140	50' Dug	Sand	House, Barn	Mdlsx, Ekfrid	26	4	0.23-12	26	64.8-1270	26	2.0-63	0		8	0.43-23	0		0					
SW141	Dug			Elgin, Malahide	8	0		0		0		0		0		a		0					
SW142	15' Sandpoint	Sand	House	Mdlsx, Caradoc	26	3	0.62-2.7	4	0.08-1.4	2	8.4-56	1	1.0	0		0		1	3.6				
SW143	13' Dug	Loam		Kent, Orford	12	0		0		0		0		0		0		0					
SW144	Dug	Sand		Elgin, Bayham	6	0		4	0.11-7.5	0		0		0		0		0					
SW145				Mdlsx, N. Dorchest,	11	0		1	0.32	0		0		0		0		0					
SW146				Mdlsx, Caradoc	11	0		2	0.16-0.37	3	1.4-4.0	0		0		0		0					
SW147				Mdlsx, Caradoc	5	0		0		1	1.1	0		0		0		0					
SW148	27' Dug	Sand	House	Mdlsx, Metcalfe	27	0	0.10-18	5	0.09-5.2	2	0.64-2.0	0		0		0		0					
SW149	80' Bored	Sand	House, Barn	Mdlsx, Caradoc	26	4	0.19-7.7	10	0.04-5.4	5	0.98-500	1	1.2	0		0		1	0.55				
SW150	120' Dug	Clay-Loam	House, Barn	Mdlsx, Ekfrid	16	2	0.05-0.19	1	0.14	0		0		0		0		0					
SW151	31' Dug	Loam		Kent, Camden	12	0		6	0.14-3.53	3	1.5-5.6	1	1.4	0		0		0					
SW152				Mdlsx, Caradoc	8	U		7	0.22-3.85	0		0		0		0		0					
SW153	Dug	Sand		Elgin, Bayham	6	0		4	0.05-1.30	0		0		0		0		0					
SW154	10' Dug	Clay		Kent, Romney	12	0		0		0		0		0		0		0					
SW155	12' Sandpoint	Sand		Lambton, Euphemia	9	0		1	0.69	0		0		0		0		0					
SW156	120' Drilled	loam	Barn	Mdlsx, N. Dorchest	12	0		0		0		0		0		0		0					

APPENDIX (cont'd) SUMMARY OF PESTICIDES IN PRIVATE WELLS - SOUTH WEST REGION

ID #	DEPTH / TYPE	SOIL TYPE	USE	COUNTY / TWP	#SMP	ALA		ATR+DEATR		MTO		MTB		SIM+DSIM		PROM		CYAN		2,4-DB		DICAMB	
						+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE
SW156	67' Drilled	Loam	House	Mdlsx, N. Dorchest.	23	5	0.19-7.8	1	0.05-2.94	2	0.42-0.70	0		0		0		1	0.08				
SW157				Mdlsx, Ekfrid	8	0		3	0.03-3.9	0		0		0		0		0					
SW158	20' Dug	Clay	House	Essex, Mersea	19	3	0.15-1.1	7	0.03-1.51	1	0.40	2	0.33-0.42	0		0		0					
SW159	12' Sandpoint	Sand	House	Essex, Cichstr S.	18	3	0.39-0.61	0		1	0.95	0		0		0		0					
SW160	Dug	Sand		Elgin, Yarmouth	6	0		2	0.29-0.68	0		0		0		0		0					
SW161		Clay	Barn	Lambton, Bosanquet	4	0		1	0.07	0		0		0		0		0					
SW161	20' Dug	Clay	House	Lambton, Bosanquet	28	4	0.56-20	6	0.18-9.3	2	2.2-7.1	1	0.53	0		0		2	0.41-0.45				
SW162	50' Drilled	Loam		Lambton, Bosanquet	13	1	0.33	3	0.11-0.43	2	0.61-13	1	6.5	0		0		1	4.0				
SW163	90' Dug	Clay		Lambton, Bosanquet	11	0		6	0.08-2.62	1	1.6	1	1.5	0		0		0					
SW164	90' Dug	Clay-Loam		Lambton, Warwick	12	0		2	0.11-0.30	1	0.52	0		0		0		0					
SW165	83' Dug	Clay-Loam		Lambton, Warwick	6	0		1	0.05	0		0		0		0		0					
SW166	98' Dug	Clay-loam		Lambton, Warwick	8	0		0		2	0.74-2.2	0		0		0		0					
SW167	18' Dug	Clay		Kent, Tilbury E.	13	0		5	0.08-2.56	0		0		0		0		0					
SW168	37' Dug	Sand-Gravel	House	Huron, Hay	21	8	0.35-5.5	5	0.02-2.0	2	1.0-4.9	0		0		0		0					
SW169				Kent, Chatham	1	0		3	0.17-2.03	0		0		0		0		0					
SW170	11' Dug			Lambton, Bosanquet	22	4	0.42-0.54	6	0.23-6.1	0		0		0		0		0					
SW171				Lambton, Bosanquet	10	0		10	0.36-2.11	0		0		0		0		0					
SW172	22' Dug			Kent, Walpole Is.	6	0		1	0.04	0		0		0		0		0					
SW173	50' Dug	Loam	House	Essex, Mersea	1	1	0.20	0		0		0		0		0		0					
SW174	30' Dug	Sand		Mdlsx, Caradoc	1	0		0		0		0		0		0		0					
SW175	Bored	Loam		Mdlsx, E. Williams	1	0		0		0		0		0		0		0					
SW176	30' Dug	Clay		Mdlsx, Westminster	2	0		0		0		0		0		0		0					
SW177	Dug			Mdlsx, Westminster	1	0		0		0		0		0		0		0					
SW178	Dug	Clay-Loam		Mdlsx, London	1	0		0		0		0		0		0		0					
SW179				Elgin, Aldborough	1	0		0		0		0		0		0		0					
SW180	20' Dug	Sang	House	Mdlsx, Lobo	22	2	0.39-1.2	1	3.3	0		0		0		0		0					
SW181	20' Dug	Clay-Loam		Elgin, Aldborough	1	0		1	42	0		0		1	0.27	0		0					
SW182				Mdlsx, N. Dorchest.	1	0		0		0		0		0		0		0					
SW183	12' Dug	Loam		Elgin, Yarmouth	1	0		0	2.8	0		0		0		0		0					
SW184	Dug	Sand		Mdlsx, Caradoc	1	0		0		0		0		0		0		0					
SW185	22' Dug	Sand-Loam		Elgin, Aldborough	3	0		0		0		0		0		0		0					
SW186	20' Dug	Sand-Loam	House	Elgin, Dunwich	4	0		1	0.30	0		0		0		0		0					
SW187	30' Dug	Clay-Loam		Mdlsx, London	1	0		1	0.30	0		0		0		0		0					
SW188	30' Dug		House	Mdlsx, Lobo	1	0		0		0		0		0		0		0					
SW188	Sandpoint			Mdlsx, Lobo	1	0		1	0.12	0		0		0		0		0					
SW189				Mdlsx, Biddulph	1	0		1	1.4	0		0		0		0		0					
SW190				Kent, Walpole is.	4	0		1	0.11	0		0		0		0		0					
SW191	50' Drilled	Sand		Mdlsx, N. Dorchest.	1	0		0		0		0		0		0		0					
SW192				Kent, Orford	1	0		1	5.8	0		0		0		0		0					
SW193				Kent, lone	3	1	0.30	3	5.0-7.7	1	1.6	0		0		0		0					
SW194	47' Bored	Sand		Oxford, Woodstock	1	0		0		0		0		0		0		0					
SW195				Mdlsx, London	1	0		1	0.13	0		0		0		0		0					
SW196				Mdlsx, Westminster	1	0		0		0		0		0		0		0					
SW197				Mdlsx, Westminster	1	0		0		0		0		0		0		0					
SW198	22' Dug	Sand		Mdlsx, Lobo	1	0		0		0		0		0		0		0					
SW199	Sandpoint	Clay		Mdlsx, N. Dorchest.	1	0		0		0		0		0		0		0					
SW201	Dug	Clay	House, Barn	Perth, Blanshard	3	1	0.30	1	0.67	0		0		1	0.89	0		0					
SW202	26' Dug	Sand-Loam		Huron, Hay	1	0		0		0		0		0		0		0					
SW203				Lambton, Bosanquet	1	1	0.64	1	0.77	0		0		0		0		0					
SW204				Lambton, Bosanquet	1	0		1	0.25	0		0		0		0		0					
SW205	Sandpoint	Loam		Lambton, Bosanquet	1	0		1	25.1	0		0		0		0		0					

APPENDIX (cont'd) SUMMARY OF PESTICIDES IN PRIVATE WELLS - SOUTH WEST REGION

ID #	DEPTH / TYPE	SOIL TYPE	USE	COUNTY / TWP	#SMP	ALA		ATR+DEATR		MTO		MTB		SIM+DSIM		PROM		CYAN		2,4-DB		DICAMB	
						+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE
SW206				Lambton, Bosanquet	1	0		0		0		0		0		0		0					
SW207				Lambton, Bosanquet	1	0		0		0		0		0		0		0					
SW208				Lambton, Bosanquet	1	0		0		0		0		0		0		0					
SW209				Lambton, Bosanquet	1	0		0		0		0		0		0		0					
SW210	25' Sandpoint	Sand		Mdlsx, Caradoc	1	0		1	6.0	1	5.7		0		0		0		1	1.9			
SW211	13' Dug	Sand-Loam		Mdlsx, Caradoc	2	0		0		0			0		0		0						
SW212	25' Bored	Sand		Mdlsx, Delaware	1	0		1	1.4	0			0		0		0						
SW213	12' Dug	Sand-Loam		Elgin, Aldborough	2	0		0		0			0		0		0						
SW214	20' Dug	Sand-Loam	House	Lambton, Euphemia	12	1	0.50	3	2.4-9.3	2	1.7-5.5	1	2.7		0		0						
SW214	65' Drilled			Lambton, Euphemia	2	0		0		0			0		0		0						
SW215	25' Dug	Sand-Loam	Barn	Lambton, Euphemia	12	9	2.2-12	12	72.8-354.1	2	0.57-3.7	0		7	3.1-12	0		1	0.53				
SW215	50'	Rock	House	Lambton, Euphemia	2	0		0		0			0		0		0						
SW216	30' Bored	Sand		Mdlsx, Delaware	1	0		1	0.52	0			0		0		0						
SW218	12' Dug	Clay		Mdlsx, London	2	0		0		0			0		0		0						
SW219	12' Sandpoint	Clay		Mdlsx, London	1	0		0		0			0		0		0						
SW220	12' Sandpoint	Gravel		Mdlsx, Lobo	1	0		0		0			0		0		0						
SW221	12' Dug	Sand-loam		Elgin, Aldborough	1	0		1	1.43	1	0.88		0		0		0						
SW222	15' Dug	Loam		Elgin, Aldborough	1	0		1	0.05	0			0		0		0						
SW223				Lambton, Bosanquet	1	0		0		0			0		0		0						
SW224	25' Dug	Sand-loam		Mdlsx, W. Nissouri	1	0		0		0			0		0		0						
SW225	25' Dug	Loam		Mdlsx, London	1	0		1	0.06	0			0		0		0						
SW226				Essex, Gosfield	1	0		0		0			0		0		0						
SW227				Essex, Clchstr S.	1	0		0		0			0		0		0						
SW228				Mdlsx, Caradoc	1	0		0		0			0		0		0						
SW230	20' Dug	Sand		Oxford, Norwich	1	0		0		0			0		0		0						
SW231	25' Dug	Clay		Mdlsx, Westminster	1	0		1	4.28	0			0		0		0						
SW232	25' Dug			Essex, Clchstr S.	1	0		0		0			0		0		0						
SW233				Mdlsx, Caradoc	1	0		1	0.22	0			0		0		0						
SW224	30' Dug	Sand		Mdlsx, W. Nissouri	1	0		0		0			0		0		0						
SW225				Lambton, Bosanquet	2	0		1	0.75	1	49		0		0		0						
SW236	30' Dug	Sand-Loam		Mdlsx, London	1	0		0		0			0		0		0						
SW238				Lambton, Sarnia	1	0		0		0			0		0		0						
SW239				Lambton, Plympton	1	0		0		0			0		0		0						
SW240				Lambton, Bosanquet	1	0		0		0			0		0		0						
SW241				Lambton, Bosanquet	1	0		0		0			0		0		0						
SW242				Lambton, Bosanquet	1	0		0		0			0		0		0						
SW243				Lambton, Bosanquet	1	0		0		0			0		0		0						
SW244				Mdlsx, Caradoc	1	0		0		0			0		0		0						
SW245				Mdlsx, Caradoc	1	0		0		0			0		0		0						
SW246				Huron, Stephen	1	0		0		0			0		0		0						
SW248	12' Sandpoint	Sand-loam	House, Barn	Kent, Zone	11	2	1.2-3.3	1	0.61	1	33		0		0		0						
SW249				Mdlsx, Westminster	2	0		0		0			3		0		0						
SW250				Mdlsx, Westminster	1	0		0		0			0		0		0						
SW251				Mdlsx, Ekfrid	1	0		1	0.17	0			0		0		0						
SW252				Mdlsx, Lobo	1	0		0		0			0		0		0						
SW253				Lambton, Euphemia	1	0		1	0.25	0			0		0		0						
SW254			Well 1	Mdlsx, Caradoc	1	0		0		0			0		0		0						
SW254			Well 2	Mdlsx, Caradoc	1	0		0		0			0		0		0						
SW255				Mdlsx, London	1	0		0		0			0		0		0						
SW256				Mdlsx, Caradoc	1	0		1	5.9	0			0		0		0						
SW257				Lambton, Bosanquet	1	0		0		0			0		0		0						

APPENDIX (cont'd) SUMMARY OF PESTICIDES IN PRIVATE WELLS - SOUTH WEST REGION

ID #	DEPTH / TYPE	SOIL TYPE	USE	COUNTY / TWP	#SMP	ALA		ATR+DEATR		MTO		MTB		SIM+DSIM		PROM		CYAN		2,4-DB		DICAMB	
						+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE
SW258				Lambton, Bosanquet	1	0		0		0		0		0		0		0					
SW259				Lambton, Bosanquet	1	0		0		0		0		0		0		0					
SW260				Lambton, Bosanquet	1	0		0		0		0		0		0		0					
SW261				Lambton, Bosanquet	1	0		0		0		0		0		0		0					
SW263				Mdlsx, Mosa-Ekfrid	1	0		1	2.21	0		0		0		0		0					
SW264	110' Drilled	Clay	Initial System	Mdlsx, Metcalfe	6	5	0.10-23	5	6.78-43	5	1.1-750	4	1.6-24	0		0		1	1.4				
SW264	128' Drilled	Clay	Improved System	Mdlsx, Metcalfe	11	2	4.7-4.4	2	4.53-7.01	2	2.2-11	1	2.7	0		0		1	1.7				
SW264	25' Dug	Clay	Initial System	Mdlsx, Metcalfe	6	5	11-101	4	3.6-14.0	4	437-1800	4	2.2-300	0		0		2	0.6-0.87				
SW265				Oxford, SW Oxford	1	0		0		0		0		0		0		0					
SW266			Well Pumped Out	Elgin, Dunwich	2	0		2	75-126	2	70-85	2	3.2-5.5	0		0		0					

APPENDIX (cont'd) SUMMARY OF PESTICIDES IN PRIVATE WELLS - WEST CENTRAL REGION

ID #	DEPTH / TYPE	SOIL TYPE	USE	COUNTY / TWP	#SMP	ALA		ATR+DEATR		MTO		MTB		SIM+DSIM		PROM		CYAN		2,4-DB		DICAMB	
						+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE	+ve	RANGE
WC H-23-85	Sandpoint	Sand-Loam		Hald-Norf, Chrlttvll	1	0		1	0.59	0		0		0		0		0					
WC OMAF 01	12' Sandpoint	Sand		Hald-Norf, Delni	2	0		0		0		0		0		0		0					
WC OMAF 02			Greenhouse Irrig.	Hmltn-Wntwrth, Flamb.	2	0		1	0.63	1	26	0		0		0		0					
WC OMAF 02	40' Drilled		Greenhouse New	Hmltn-Wntwrth, Flamb.	1	0		0		0		0		0		0		0					
WC OMAF 04	14' Sandpoint	Sand		Hald-Norf, Simcoe	1	0		0		0		0		0		0		0					
WC OMAF 06	40' Dug	Loam-Gravel		Waterloo, Woolwich	1	0		0		0		0		0		0		0					
WC OMAF 07	120' Drilled	Gravel		Wellington, Guelph	1	0		0		0		0		0		0		0					
WC OMH 01	100' Drilled			Wellington, Puslinch	1	0		0		0		0		0		0		0					
WC OMH 02	20' Sandpoint	Sand		Hald-Norf, Delhi	2	0		0		0		0		0		0		0					
WC OMH 04	10' Sandpoint	Sand	Raw and Treated	Hald-Norf, Simcoe	2	0		0		0		0		0		0		0					
WC X01	44' Drilled	Clay-Loam		Niagara, Pelham	1	0		0		0		0		0		0		0					
WC X02	15' Dug	Sand-Loam		Brant, Burford	1	0		1	0.09	0		0		0		0		0					
WC X03	120' Artesian	Clay-Loam		Brant, S. Dumfries	2	0		0		0		0		0		0		0					
WC X04	20' Duo	Sand		Hald-Norf, Dunnville	1	0		0		0		0		0		0		0					
WC X05	30' Dug	Gravel		Brant, Brantford	1	0		1	11	1	84	0		0		0		0					
WC X07	80' Drilled	Loam		Brant, Burford	1	0		0		0		0		0		0		0					
WCA1	20' Bored	Sand	House	Hald-Norf, S. Walsing.	8	0		0		0		0		0		0		0					
WCA10	15' Dug	Sand-Loam	House	Hald-Norf, Canboro	8	2	0.05-0.33	2	0.11-0.16	0		1	0.24	0		0		0					
WCA11	37' Dug	Sand	House	Hald-Norf, Dunnville	7	0		0		0		0		0		0		0					
WCA12	12' Sandpoint	Sand	House	Hald-Norf, Houlton	1	0		1	0.77	0		0		0		0		0					
WCA13	20' Sandpoint	Loam	House	Hald-Norf, Woodhouse	1	0		a		0		0		0		0		0					
WCA2	40' Sandpoint	Sand	House	Hald-Norf, Middleton	0	0		0		0		0		0		0		0					
WCA3	20' Sandpoint	Sand-Loam	House	Hald-Norf, Townsend	10	0		1	0.49	0		0		0		0		0					
WCA4	12' Sandpoint	Sand-Loam	House	Hald-Norf, Townsend	10	0		0		0		0		0		0		0					
WCA5	40' Dug	Sand-Loam	House	Brant, Burford	10	0		1	0.76	0		0		0		0		0					
WCA6	20' Dug	Sand-Loam	House	Brant, Burford	11	0		1	0.10	0		0		0		0		0					
WCA7	100' Drilled	Gravel	House	Waterloo, Wilmot	12	0		0		0		0		0		0		0					
WCA8	39' Dug	Loam	House	Waterloo, Wilmot	12	0		1	0.08	0		0		0		0		0					
WCA9	90'Drilled	Sand-Grovel	House	Waterloo, W. Dumfries	12	0		1	0.08	0		0		0		0		0					

APPENDIX (cont'd) SUMMARY OF PESTICIDES IN PRIVATE WELLS — CENTRAL REGION

ID #	DEPTH / TYPE	SOIL TYPE	USE	COUNTY / TWP	#SMP	ALA		ATR+DEATR		MTO		MTB		SIM+DSIM		PROM		CYAN		2,4-DB		DICAMB	
						+ve	Range	+ve	Range	+ve	Range	+ve	Range	+ve	Range	+ve	Range	+ve	Range	+ve	Range	+ve	Range
C OMAF 01	200' Drilled	Clay-Loam		Simcoe, Oro	1	0		0		0		0		0		0		0		0		0	
C OMAF 02	230' Drilled	Sand-Loam		Simcoe, Vespra	1	0		0		0		0		0		0		0		0		0	
C OMAF 03	110' Drilled	Clay	Barn	Simcoe, Sunnidale	1	0		0		0		0		0		0		0		0		0	
C OMAF 03	125' Drilled	Clay	House	Simcoe, Sunnidale	1	0		0		0		0		0		0		0		0		0	
C OMAF 03 (WC)				Halton, Halton Hills	1	0		0		0		0		0		0		0		0		0	
C OMAF 05 (WC)	10' Dug	Clay		Halton, Halton Hills	1	0		0		0		0		0		0		0		0		0	
C X01	80' Drilled	Clay	House	Peel, Caledon	2	0		0		0		0		0		0		0		0		0	
C X02	180' Drilled	Clay		Simcoe, Sunnidale	1	0		0		0		0		0		0		0		0		0	
C X03	80' Drilled	Sand-Loam		Peterboro, S. Monag.	1	0		0		1	0.31	0		1	0.33	0		0		0		0	
C X04	10' Dug	Sand-Loam		Nrthmbld, Alnwick	1	0		0		0		0		0		0		0		0		0	
C X05	25' Dug		House	Durham, Pickering	1	0		1	1.8	0		0		0		0		0		0		0	
C X06	50' Drilled	Sand-Loam	House	Nrthmbld, Haldimand	1	0		1	1.8	0		0		0		0		0		0		0	
C X07	27' Dug	Loam	House	Durham, Scugog	1	0		0		0		0		0		0		0		0		0	
C X08			Garage	Peterboro, S. Monag	1	0		0		0		0		0		0		0		0		0	
C X08	Drilled		House	Peterboro, S. Monag	1	0		0		0		0		0		0		0		0		0	
C X09	240' Drilled	Clay-Loam		Simcoe, Vespra	1	0		0		0		0		0		0		0		0		0	
C X10				Parry Sound, Machar	1	0		0		0		0		0		0		0		0		0	
C X11				Simcoe, Innisfil	1	0		0		0		0		0		0		0		0		0	
C X12	26' Dug	Clay		York, E. Gwillim.	1	0		0		0		0		0		0		0		0		0	
C X13	45' Dug	Clay		Simcoe, W. Gwillim.	1	0		0		0		0		0		0		0		0		0	
C X14	140' Drilled	Clay		Muskoka, Bracebridge	1	0		1	0.0	0		0		0		0		0		0		0	
C X15	195' Drilled	Clay	Kit. & Out. Tap	York, King	3	0		0		0		0		0		0		0		0		0	
C X16	30' Bored	Clay-Loam		Peterboro, Cavan	1	0		0		0		0		0		0		0		0		0	
C X17	10' Drilled	Loam		Peterboro, N. Monag	1	0		0		0		0		0		0		0		0		0	
C X10	10' Drilled	Clay-Loam		Peterboro, Cavan	1	0		0		0		0		0		0		0		0		0	
C X19	10' Drilled	Clay-loam		Peterboro, N. Monag	1	0		0		0		0		0		0		0		0		0	
C 001-85	130' Drilled	Sand-Loam	House	Simcoe, W. Gwillim.	15	1	0.16	0	0.04-0.10	0		0		0		0		0		0		0	
C 002-85	45' Bored	Loam	House	Simcoe, W. Gwillim.	14	0		10	0.10-0.64	0		0		0		0		0		0		0	
C 003-85	21' Bored	Loam		Simcoe, W. Gwillim.	15	0		10	0.11-0.54	0		0		0		0		0		0		0	
C 004-85	24' Dug	Loam	House, Barn	Simcoe, W. Gwillim.	15	1	0.10	15	2.0-11.0	0		0		2	0.17-0.97	0		0		0		0	
C 005-85	40' Bored	Sand-Gravel	House	Simcoe, InnisFil	16	16	0.5-15	14	1.75-9.0	0		1	0.44	0		0		0		0		0	
C 005A-85	44' Dug		House	Simcoe, Innisfil	15	0		9	0.05-27	1	0.41	0		0		0		0		0		0	
C 005B-85	44' Dug		Barn	Simcoe, Innisfil	10	1	0.24	11	0.06-8.9	0		0		0		0		0		0		0	
C 006-85	360' Drilled	Sand-Loam	Township Well	Simcoe, Innisfil	14	0		2	0.04-0.06	0		0		0		0		0		0		0	
C 007-85	25' Bored	Sand-Gravel		Simcoe, W. Gwillim.	14	0		3	0.03-0.07	0		0		0		0		0		0		0	
C 008-85	36' Bored	Sand-Loam	House	Simcoe, Innisfil	14	0		1	0.04	0		0		0		0		0		0		0	
C 075-85	40' Bored	Sand-loam	House	Simcoe, Innisfil	2	0		2	0.07-0.36	0		0		0		0		0		0		0	
C 076-85	35' Bored	Sand-Loam		Simcoe, Innisfil	2	0		0		0		0		0		0		0		0		3	
C 090-85	150' Drilled	Snd-Im-Grvl	House (New Well	Simcoe, Innisfil	5	0		0		0		0		0		0		0		0		0	
C 160	30' Dug	loam		Simcoe, W. Gwillim.	2	0		0		0		0		0		0		0		0		0	
C N-1	50' Bored	Sand-Loam	House, Barn	Nrthmbld, Percy	25	1	2.7	2	0.31-1.10	0		0		0		0		0		0		0	
C N-1B			House	Nrthmbld, Percy	1	0		0		0		0		0		0		0		0		0	
C N-2	140' Drilled	Sand-loam	House	Nrthmbld, Brighton	13	2	0.54-0.57	2	1.9-5.5	0		0		0		0		0		0		0	
C N-2B			Barn	Nrthmbld, Brighton	1	0		1	0.25	0		0		0		0		0		0		0	
C N-3	40' Drilled	Gravel-Sand	House	Nrthmbld, Brighton	13	0		0		0		0		0		0		0		0		0	
C N-4	10' Dug	Sand-Loam	House	Nrthmbld, Cramahe	13	0		2	0.35-7.8	0		0		0		0		0		0		0	
C N-5	140' Drilled	Sand-Loam	House, Barn	Nrthmbld, Hamilton	10	0		1	1.5	0		0		0		0		0		0		0	
C N-6	20' Artesian	Sand-Loam	House, Barn	Nrthmbld, Hamilton	15	0		0		0		0		0		0		0		0		0	
C N-7	120' Drilled	Loam	House	Nrthmbld, Hamilton	10	0		0		0		0		0		0		0		0		0	
C N-8C	157' Drilled	Sand-loam	House, Barn	Nrthmbld, Hamilton	13	0		1	0.5	0		0		0		0		0		0		0	
C P-1	85' Drilled	Clay-Loam	House, Barn	Peterboro, Smith	13	0		1	0.24	0		0		0		0		0		0		0	

APPENDIX (cont'd) SUMMARY OF PESTICIDES IN PRIVATE WELLS - CENTRAL REGION

ID #	DEPTH / TYPE	SOIL TYPE	USE	COUNTY / TWP	#SMP	ALA		ATR+DEATR		MTO		MTB		SIM+DSIM		PROM		CYAN		2,4-DB		DICAMB	
						+ve	Range	+ve	Range	+ve	Range	+ve	Range	+ve	Range	+ve	Range	+ve	Range	+ve	Range	+ve	Range
C P-2	75' Drilled	Clay-Loan	House	Peterboro, Cavan	13	0		11	0.08-2.42	0		0		0		0		0					
C P-3	18' Dug	Clay-Loam	House, Barn	Peterboro, Cavan	13	0		7	0.07-0.78	0		0		0		0		0					
C V-1	59' Drilled	Clay-Loan	House	Victoria, Ops	13	0		0		0		0		0		0		0					
C V-2	30' Drilled	Loam	House	Victoria, Emily	12	0		1	1.25	0		0		0		0		0					
C V-3	18' Dug	Loam	House	Victoria, Ops	13	0		12	0.59-3.66	0		1	0.26	0		0		4	0.20-0.25				
C V-4	55' Drilled	Clay-Loan	House	Victoria, Ops	13	1	0.25	2	0.04-11.3	0		0		0		0		0					
C V-5	45' Drilled	Clay-Loan	House, Barn	Victoria, Fenelon	13	2	0.27-0.43	10	0.09-2.12	0		0		0		0		0					
C V-6	87' Drilled	Sand-Loan	House	Victoria, Manvers	25	2	0.85-1.1	2	0.10-0.15	0		0		0		0		0					

APPENDIX (cont'd) SUMMARY OF PESTICIDES IN PRIVATE WELLS - SOUTH EAST REGION.

ID #	DEPTH / TYPE	SOIL TYPE	USE	COUNTY / TWP	#SMP	ALA		ATR+DEATR		MTO		MTB		SIM+DSIM		PROM		CYAN		2,4-DB		DICAMB	
						+ve	Range	+ve	Range	+ve	Range	+ve	Range	+ve	Range	+ve	Range	+ve	Range	+ve	Range	+ve	Range
SE DW-1	36' Drilled	Limestone	House	P. Edward, Hallowell	2	0		0		0	0	0	0	0	0	0	0						
SE 1000M	100' Drilled	Gravel	House	S.D. & G., Lochiel	2	0		0		0	0	0	0	0	0	0	0			1	17		
SE 1000M	26' Dug	Gravel	Abandoned	S. D. & G., Lochiel	1	0		0		0	0	0	0	0	0	0	0			1	5800		
SE CK1	17' Dug	Limestone	House	P. Edward, Hallowell	1	0		0		0	0	0	0	0	0	0	0						
SE OMAF 01	90' Drilled	Sand-Loam		Lds & Grnvll, S. Gower	1	0		0		0	0	0	0	0	0	0	0						
SE OMAF 02	12' Drilled	Shale		P. Edward, Hallowell	1	0		0		0	0	0	0	0	0	0	0						
SE SS 0				Hastings, Huntingdon	1	0		0		0	0	0	0	0	0	0	0						
SE SS 1	Drilled	limestone		P. Edward, Hillier	1	0		1	3.9	0	0	0	0	0	0	0	0						
SE SS 2			Bain	P. Edward, Hillier	1	0		1	5.4	0	0	0	0	0	0	0	0						
SE SS 3			House	P. Edward, Hillier	1	0		0		0	0	0	0	0	0	0	0						
SE SS 4	60' Drilled	Limestone		P. Edward, Hillier	1	0		0		0	0	0	0	0	0	0	0						
SE WL-1	33' Drilled		House	P. Edward, Hillier	10	1	0.23	2	0.08-0.09	0	0	0	0	0	0	0	0						
SE X01	44' Drilled	Loam		P. Edward, Ameliasbg	1	0		0		0	0	0	0	0	0	0	0						
SE X02				P. Edward, Hillier	1	0		0		0	0	0	0	0	0	0	0						
SE X03	21' Dug		Abandoned	S.D &G, Winchester	4	1	2.7	3	0.02-0.84	1	1.5	2	35-83	0	0	0	0			1	0.7	3	1.5-2.3
SE X03	65' Drilled	Clay	House	S.D &G., Winchester	4	3	0.63-1.1	3	0.10-0.8	3	1.4-7.1	1	0.05	0	0	0	0			0		0	
SE X04	25' Dug	Loam-Lime	House	P. Edward, Hallowell	1	0		1	4.6	1	1.2	0	0	0	0	0	0			1	0.46		
SE X05	28' Dug		House, Farm	S.D.& G., Roxborough	4	1	1.6	3	0.44-2.4	0	0	0	0	0	0	0	0						
SE X06	120' Drilled	Limestone		P. Edward, Hillier	1	0		0		0	0	0	0	0	0	0	0						
SE X07	90' Drilled	Limestone	Well 1	P. Edward, Hillier	1	0		0		0	0	0	0	0	0	0	0						
SE X07	Dug		Well 2	P. Edward, Hillier	1	0		1	1.06	0	0	0	0	0	0	0	0						
SE X08	51' Drilled	Limestone		Frontenac, Storringt	1	0		0		0	0	0	0	0	0	0	0						
SE X09				P. Edward, Sophiasbg	1	0		0		0	0	0	0	0	0	0	0						
SE X15(SW)	Artesian		House, Irrig.	S.D. &G., Mountain	1	0		1	0.09	0	0	0	0	0	0	0	0						
SE-016	125' Drilled	Clay-loam		S.D. &G., Lancaster	1	0		0		0	0	0	0	0	0	0	0						
SE-1	Dug	Clay-Loam	Abandoned	P. Edward, Hillier	20	1	0.16	13	0.32-3.91	0	0	0	3	0.33-1.2	0	0	0						
SE-10	Sandpoint	Sand	House	Russell, Russell	9	0		0		0	0	0	0	0	0	0	0						
SE-11	30' Dug	Sand	House	Russell, Cambridge	9	0		1	0.29	0	0	0	0	0	0	0	0						
SE-2	22' Dug	Sand	House	P. Edward, S. Mrybg	20	0		5	0.06-2.4	0	0	0	0	0	0	0	0						
SE-3	15' Dug	Clay- Loam	Abandoned	P. Edward, Sophiasbg	21	11	0.30-1.3	16	0.19-3.23	0	8	0.30-1.7	0	0	0	0	2	0.06-0.11					
SE-4	50' drilled	Clay-loam	House	P. Edward, Sophiasbg	22	1	7.5	4	0.01-0.99	0	1	0.15	0	0	0	0	1	0.16					
SE-5	11' Dug	Sand	House	Russell, Russell	10	0		9	0.47-3.4	0	0	0	0	0	0	0	1	0.12					
SE-6	10' Dug	Sand	Abandoned	Russell, Russell	3	0		2	5.9-15.1	1	0.9	0	0	0	0	0	0						
SE-7	Sandpoint	Sand	House	Russell, Russell	9	0		3	0.10-0.45	0	0	0	0	0	0	0	0						
SE-8	Sandpoint	Sand	House	Russell, Russell	11	0		1	0.42	0	0	0	0	0	0	0	0						
SE-85-1	21' Dug	Clay	House	P. Edward, Ameliasbg	1	1	0.22	1	0.64	0	0	0	0	0	0	0	0						
SE-85-15	Dug	Cly-Silt-Snd		Russell, Russell	1	0		0		0	0	0	0	0	0	0	0						
SE-85-258	Dug	Sand	Abandoned	Ottw-Crltn, Osgoode	1	0		0		0	0	0	0	0	0	0	0						
SE-85-25C	Dug	Sand-Gravel		Ottw-Crltn, Osgoode	1	0		0		0	0	0	0	0	0	0	0						
S1-85-348	Dug	Sand	Abandoned	Russell, Cambridge	1	0		0		0	0	0	0	0	0	0	0						
SE-85-38	Drilled	Silt-Clay	House	P. Edward, Sophiasbg	1	0		1	0.59	1	0.42	0	0	0	0	0	0						
5E-85-41	Drilled		House	Russell, Cambridge	1	0		0		0	0	0	0	0	0	0	0						
SE-85-5A	Drilled	Clay		P. Edward, Ameliasbg	1	0		0		0	0	0	0	0	0	0	0						
SE-85-5B	3' Dug	Clay	Abandoned	P. Edward, Ameliasbg	1	0		1	0.94	0	0	0	0	0	0	0	0						
SE-85-60	80' Drilled	Sand-Silt		P. Edward, S. Mrybg	1	0		0		0	0	0	0	0	0	0	0						
SE-85-7A	22'Dug	Sand-Silt	Abandoned	P. Edward, S. Mrybg	1	0		0		0	0	0	0	0	0	0	0						
SE-85-8A	Drilled	Clay-Loam	House	P. Edward, Hillier	1	0		1	2.01	0	0	0	0	0	0	0	0						
SE-85-88	19'Dug	Clay-Loam	Abandoned	P. Edward, Hillier	1	0		1	66	0	0	0	0	0	0	0	0						
SE-9	Sandpoint	Sand	House	Russell, Russell	9	0		1	1.23	0	0	0	0	0	0	0	0						