Chapter 8 The Role of the Public Health Authorities

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Chapter 8 The Role of the Public Health Authorities

8.1 Introduction

In this section I consider the role of the Bruce-Grey-Owen Sound Health Unit in relation to the events in Walkerton in three separate contexts: its role in overseeing the quality of drinking water at Walkerton over the years leading up to May 2000, its reaction to the privatization of laboratory testing services in 1996, and its response to the outbreak in May 2000.

In the normal course of events, the health unit exercised its oversight role by receiving notice of reports of adverse water quality and Ministry of the Environment (MOE) inspection reports and responding when necessary. It would have been preferable for the health unit to have taken a more active role in responding to the many adverse water quality reports it received from Walkerton between 1995 and 1998, and also to the 1998 MOE inspection report. During the mid- to late 1990s, there were indications that the water quality in Walkerton was deteriorating.

On receiving adverse water quality reports, the local public health inspector in Walkerton would normally contact the Walkerton Public Utilities Commission (PUC) to ensure that follow-up samples were taken and that chlorine residuals were maintained. Instead, when he received the 1998 MOE inspection report, he read and filed it, assuming that the MOE would ensure that the problems identified were properly addressed. Given that there was no written protocol instructing the local public health inspector on how to respond to adverse water reports or inspection reports, I am satisfied that he did all that was expected of him.[1]

Even if the health unit had responded more actively when concerns arose about the water quality in Walkerton in the mid- to late 1990s, it is unlikely that such responses would have had any impact on the events of May 2000. The actions required to address the concerns were essentially operational in nature. The MOE was the government regulator responsible for overseeing Walkerton's waterworks. After the 1998 inspection report, the MOE directed the PUC to

[1] It would have been preferable for the Ministry of Health and the Bruce-Grey-Owen Sound Health Unit to provided clear direction to health unit staff on how to respond to adverse water quality reports and MOE inspection reports. I will be making recommendations in the Part 2 report of this Inquiry to clarify the respective roles of the local health unit and the MOE in overseeing municipal water systems.

remedy a number of operational deficiencies, but then failed to follow up to ensure that the proper steps were taken. I am satisfied that it was appropriate for the health unit to rely on the MOE to oversee operations at the Walkerton PUC and to follow up on the 1998 inspection report.

After laboratory testing services were assumed by the private sector in 1996, the health unit sought assurance from the MOE's Owen Sound office that the health unit would continue to be notified of all adverse water quality results relating to communal water systems. It received that assurance, both in correspondence and at a meeting. I am satisfied that the health unit did what was reasonable in reacting to the privatization of lab services.

The health unit was first notified of the outbreak in Walkerton on Friday, May 19, 2000. It issued a boil water advisory two days later. In the interval, its staff investigated the outbreak diligently. There were several reasons why the health unit did not immediately conclude that the water was the source of problem. Initially, a food-borne source was the prime suspect. However, because water was a possibility, the health unit staff contacted the PUC's general manager, Stan Koebel, twice on May 19 and twice again on May 20. Health unit staff were given information that led them to believe the water was safe. They had no reason not to accept what Stan Koebel told them. His assurances led the health unit's investigation away from concluding that water was the source of the problem.

Moreover, the symptoms being reported were consistent with *Escherichia coli* O157:H7 – sometimes called "the hamburger disease" – which is most often communicated through food, not water. The health unit was not aware of any reported *E. coli* outbreak that had ever been linked to a treated water system in North America.

In my view, the health unit should not be faulted for failing to issue the boil water advisory before May 21.

I recognize that others in the community suspected that the water was the source of the contamination and took steps to avoid infection. They are to be commended for their actions. However, issuing a boil water advisory is a significant step, requiring a careful balancing of a number of factors. Precaution and the protection of public health must always be paramount; however, unwarranted boil water advisories have social and economic consequences and, most importantly, have a potential to undermine the future credibility of the

health unit issuing such an advisory. I am satisfied that the health unit was appropriately prudent and balanced in the manner in which it investigated the outbreak and decided to issue the boil water advisory.

In this respect, I do not think that the health unit's failure to review its Walkerton water file between May 19 and May 21 made any difference. The most recent relevant evidence of water quality problems in that file was more than two years old. I accept the evidence of Dr. Murray McQuigge and others that at that point, more timely information about water quality was needed. The health unit sought that information and was assured by Stan Koebel that all was well.

The health unit disseminated the boil water advisory to the community by having it broadcast on local AM and FM radio stations. It also contacted several public institutions directly. Evidence showed that some people did not become aware of the boil water advisory on May 21. In his evidence, Dr. McQuigge acknowledged that if he faced a similar situation again, he would use local television stations and have pamphlets distributed informing residents of the boil water advisory. That would have been a better approach, because the boil water advisory should have been more broadly publicized.[2]

8.2 The Public Health Branch

The Public Health Branch is part of the Ministry of Health and Long-Term Care. The Director of the Public Health Branch is also the Chief Medical Officer of Health of Ontario.[3]

The role of the Public Health Branch is:

- to manage funding for public health programs;
- to provide the Minister of Health with advice pertaining to public health; and
- to provide advice and assistance to local health units.

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[2] There were no written protocols or guidelines from the Public Health Branch of the Ministry of Health about ways of disseminating boil water advisories. I am making specific recommendations for a protocol for issuing boil water advisories in the Part 2 report of this Inquiry.

[3] This has been a combined position since 1987.

Dr. Richard Schabas, the former Chief Medical Officer of Health of Ontario, regarded the third element above as being the most important because it entails the Public Health Branch acting as a central resource for the public health system and as a principal adviser and director for local health units.

In this age of new and emerging pathogens, the Public Health Branch has a great deal to offer to health units, particularly smaller ones, which may not have the special expertise and resources to deal with these issues. In the case of Walkerton, the local Medical Officer of Health contacted and received assistance from the Public Health Branch from the onset of the outbreak.

8.3 Boards of Health and Health Units

Boards of health are established as corporations without share capital under the *Health Protection and Promotion Act*. Under the Act, a board of health must be established for every "health unit" in the province.[4] A health unit is an official health agency established by a group of municipalities to provide community health programs. Health units are funded by the province and the local municipalities on a cost-sharing basis. They are administered by the local Medical Officer of Health, who reports to the board of health.

Boards of health are composed of elected local representatives and provincial appointees. Every board of health is required to ensure that certain mandatory public health programs and services are provided in accordance with minimum provincial standards.[5] Boards of health are expected to deliver additional programs and services in response to local needs.

8.4 The Medical Officer of Health

The office of the local Medical Officer of Health is established by the *Health Protection and Promotion Act*. The appointment of the Medical Officer of Health

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[4] A health unit is defined under the legislation as the area of jurisdiction of a board of health. The term "health unit" is commonly used to describe the agency and is used interchangeably with the term "board of health." Nothing turns on this. In most instances, I use the term used in the evidence – "health unit" – to describe the agency.

[5] These programs and services are described in the "Mandatory Health Programs and Services Guidelines," issued by the Ministry of Health's Public Health Branch in December 1997. These guidelines present minimum standards for programs and services.

must be approved by the Minister of Health. The appointment is made by Order-in-Council.

The Medical Officer of Health reports directly to the board of health on issues relating to public health concerns and to the delivery and management of public health programs and services under the Act. The employees of the health unit are subject to the direction of, and are responsible to, the Medical Officer of Health in respect of their duties that relate to the delivery of public health programs or services under the legislation. The Medical Officer of Health is given powers of entry to premises, as well as powers to make orders directing persons to perform certain actions or restraining them from doing so.

The independence of the Medical Officer of Health from local political pressures is an essential component of the public health system. Although the Medical Officer of Health must be accountable to the board of health, which is composed of local politicians, he or she must be equipped to make difficult decisions that may not be popular with these politicians. To preserve his or her independence, a Medical Officer of Health can be dismissed only with the written consent of two-thirds of the members of the board of health, as well as that of the Minister of Health.

The existing legislative scheme that requires every board of health to appoint a full-time Medical Officer of Health is a provision that enhances the security and independence of the office.

8.5 Mandatory Programs and Services

The Province sets minimum standards for programs delivered by health units.[6] Standards for individual programs outline the minimum requirements to be met in order for each program to contribute to provincial goals for public health. The standards are divided into three general areas: chronic diseases and injuries, family health, and infectious diseases.

For the purposes of drinking water, two individual programs in the area of infectious diseases are important. The first is the Control of Infectious Disease Program, the purpose of which is "to reduce the incidence of infectious diseases

[6] The standards are set out under the "Mandatory Health Programs and Services Guidelines," ibid.

of public health importance." Both *E. coli* O157:H7 and *Campylobacter* are reportable diseases under this program.

The second important program is the Safe Water Program, the purpose of which is to reduce the incidence of water-borne illness. One of its objectives is to ensure that community water systems meet the health-related goals of the Ontario Drinking Water Objectives (ODWO) and the Canadian Drinking Water Quality Guidelines. In terms of the relevant standard, the Safe Water Program requires health units to: maintain an ongoing list of all drinking water systems, receive reports of adverse drinking water test results from those systems, have a written protocol for dealing with adverse results, and "act immediately" in accordance with the ODWO "to protect the health of the public whenever an adverse drinking water result is received."[7]

8.6 The Bruce-Grey-Owen Sound Health Unit

8.6.1 Background

The Owen Sound Health Unit was established in 1911, the Bruce County Health Unit in 1946, and the Grey County Health Unit in 1963. Owen Sound and Grey County amalgamated their health units in 1967. In 1989, these health units were amalgamated to form the Bruce-Grey-Owen Sound Health Unit,[8] which serves a population of more than 150,000 people.

Dr. Murray McQuigge was appointed as the Medical Officer of Health for the Bruce-Grey-Owen Sound Health Unit in 1990. In May 2000, the director of health protection was Clayton Wardell. The health unit had three assistant

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[7] This standard was issued in 1997. Under the 1989 standard, the health unit was required to "*monitor* the quality of drinking water" rather than to "receive all reports of adverse drinking water test results" (emphasis added). The significance of the change from "monitoring" to "receive all reports" was canvassed in the evidence. Some witnesses testified that the change in language did not substantively change the role of the health unit; others said it did.

It is important that the role and responsibilities of the health unit be clarified, and I will be making recommendations to that effect. However, in my view, the change in the 1997 guidelines did not play a part in the manner in which the Bruce-Grey-Owen Sound Health Unit exercised its oversight role of Walkerton.

[8] The Bruce-Grey-Owen Sound Health Unit board of health has twelve members: four municipally elected members from the County of Bruce, four municipally elected members from Grey County, two elected members from the City of Owen Sound, and two provincial government appointees.

directors: David Patterson, Jim Paton, and Sue Askin.[9] It employed 108 active staff in four offices: Owen Sound (the head office), Walkerton, Southampton (a branch office), and Durham (a branch office). Walkerton, the second-largest office, employs between 15 and 20 staff. In 1999, the health unit's annual budget was $5,632,000.[10]

8.6.2 The Medical Officer of Health

Dr. McQuigge was responsible for the overall administration of the health unit, including its budget. He had a reporting responsibility to the board of health that included providing sufficient information to ensure that the board was able to carry out its tasks and make informed decisions. He attended all meetings of the board and its committees and submitted regular and special reports as required.

Dr. McQuigge had reporting responsibilities to the Ministry of Health's Public Health Branch. He was required to keep the ministry informed of the health unit's delivery of programs.

Dr. McQuigge was also required to promote the coordination of community health services. This involved regular contact with, and education of, relevant groups and individuals in the community.

Dr. McQuigge acted as a medical adviser to staff on program service delivery and advised health workers about mandatory reportable diseases. He was also required to ensure that adequate emergency plans were in place in both the health unit and the community to deal with outbreaks of disease and other public health emergencies.

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[9] In May 2000, Mr. Patterson was responsible for the Control of Infectious Disease Program. Previously, he had been responsible for the Safe Water Program. In July 1999, responsibility for the Safe Water Program was transferred to Mr. Paton. When the events in Walkerton occurred in May 2000, Mr. Patterson was filling in for Mr. Paton, who was on vacation.

[10] Of this amount, the Province and the municipalities each provided 37.1% of the funding. An additional 13.5% came from the Province for 100% funded provincial programs. 12.3% of the funding came from other sources.

8.7 Overseeing the Safety of Drinking Water

8.7.1 Procedures and Policies

The health unit exercised its oversight role for communal water systems as it applied to the quality of the water provided to the public "when the water comes out of the tap." It was the responsibility of the MOE to monitor communal systems to ensure that the infrastructure and operational procedures of a water facility were sufficient to deliver safe water. Drawing the line between the jurisdiction of the MOE and that of the health unit is not always easy.

The health unit's role with respect to municipal water systems was limited. The MOE exercised the lead oversight role for the construction and operation of municipal water systems, as well as for the certification and training of water operators. As a result, the amount of time spent on municipal water systems by the health unit was minimal. For example, in 1999, only 0.17% of all of the time spent by the infectious disease group on the Safe Water Program was directed to municipal water systems.[11]

In May 2000, the health unit had a public health inspection policy and procedure manual. One of the goals was to ensure that water provided for human consumption was "potable." The manual lists certain activities to be carried out in fulfilling this goal, including "monitoring"[12] the quality of drinking water from public and designated private water supplies; providing advice and information on the treatment of water supplies and the health effects associated with those supplies; and interpreting water analysis reports for the public. With respect to the monitoring role, the manual provides that for public water supplies, it may be sufficient to review the operator's or MOE's records if adequate samples are being taken.

On the whole, the health unit did not have extensive procedures and policies for overseeing municipal water systems. Virtually no guidance was provided to public health inspectors about how to respond to adverse water quality reports or to MOE inspection reports. However, the evidence is also clear that the

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[11] In total, 1.2 out of 10.5 full-time equivalent employees in the infectious disease group (11.19%) were committed to the Safe Water Program. Of this time devoted to the Safe Water Program by the infectious disease group, only 1.54% was related to municipal water systems.

[12] "Monitoring" for the purpose of this policy means reviewing bacterial and/or chemical sample results and other relevant information pertaining to a water supply. Sampling by health unit personnel should not be assumed.

Public Health Branch provided little, if any, guidance to local health units on the development of protocols relating to a health unit's role in overseeing municipal water systems.

8.7.2 The Receipt of Adverse Results

Upon receiving adverse water quality reports, the practice of the health unit office in Walkerton was to contact the PUC and ensure that a follow-up sample was taken and that the proper corrective action was pursued if warranted. The health unit dealt with adverse results on an individual basis and did not review the trends indicated by results over time. Before the privatization of laboratory testing services in 1996, the health unit received all test reports – positive and negative – and would have been in a position to assess overall trends if it chose to do so. After privatization, however, the health unit received only reports of unsafe water quality; monitoring trends would have been more difficult for them.

In any event, the health unit did not, either before or after 1996, view the monitoring of water quality trends as one of its functions; if anything, it relied on the MOE to do that. I am satisfied that a properly structured program overseeing the potability of drinking water should have regard for more than just the most recent test results. Putting specific results in a broader context would be the preferred approach.

However, I note that there is no guideline from the Public Health Branch of the Ministry of Health directing a health unit to do this. The 1989 guidelines directed health units to "monitor" the quality of the water, but provided no further guidance as to the nature of monitoring. The word "monitoring" was dropped from the 1997 guidelines.

Moreover, the resources available to the Bruce-Grey-Owen Sound Health Unit were under pressure in recent years, and it was unlikely that a public health inspector would have enough time to review trends. In the circumstances, I do not think that the way in which the health unit responded to adverse quality reports in Walkerton was unreasonable.

In any event, even if the public health inspector had reviewed Walkerton's water test results to look for trends, it is unlikely that there would have been an impact on the events of May 2000. At most, concerns about deteriorating

water quality would have led to a discussion involving the PUC and the MOE about the operational procedures necessary to safeguard the water. The health unit could be expected to emphasize to the PUC and the MOE the increasingly frequent adverse results, the need for adequate treatment, the need to take the appropriate corrective action, and the importance of informing the health unit of ongoing problems. The MOE was largely aware of these matters. The responses that were necessary were essentially operational. It was up to the MOE – not the health unit – to determine what steps needed to be taken regarding treatment and monitoring, and to ensure that they were implemented. I address the MOE's role in the next chapter.

I am satisfied that clear, province-wide guidelines should be issued by the Public Health Branch, directing local health units how to address adverse quality reports. This guideline should specify the nature and extent of any response and should contain clear directions about the respective roles of the MOE and health units. I set out my recommendations at the end of this chapter.

8.7.3 The Receipt of Ministry of the Environment Inspection Reports

In a meeting held on May 2, 1997, between the health unit and the MOE's Owen Sound office, Philip Bye, the area supervisor for the MOE, encouraged the health inspectors to read inspection reports. He said that all municipal supplies would be inspected by March 31, 1998, and that detailed reports would be forwarded to the health unit.

Dr. McQuigge received a copy of the 1998 inspection report relating to Walkerton from the MOE.[13] As was his normal practice, he did not read the report and had his secretary forward it to the Health Protection Department. David Patterson testified that he scanned the covering letter but did not read the contents of the report. The clerical staff forwarded the inspection report to James Schmidt, the public health inspector responsible for Walkerton, who testified that he read it but took no further action.

That report indicated that there were a number of occasions on which *E. coli* had been detected in the treated water and distribution system, and it identified several operating deficiencies at the Walkerton PUC. Some parties suggested

[13] I will address only the 1998 report, since it was the most proximate to the May 2000 events and since it dealt with the most serious issues of water quality.

to the Inquiry that Mr. Schmidt should have been more concerned with the safety of the water at Walkerton – that he should have looked into the matters raised in the report and taken steps to ensure that the actions required by the report were in fact implemented by the PUC. I think that would be expecting too much of Mr. Schmidt, for two reasons.

First, there were no guidelines from the Public Health Branch to the health units that set out the steps to be followed on the receipt of an MOE inspection report. As a result, there were no guidelines from the health unit to the public health inspectors regarding what should be done with a report of this nature. Second, the MOE was responsible for following up on the report. The MOE was the lead ministry, the inspection was an MOE inspection, and the concerns raised in the report – while clearly relating to water quality – required corrective actions that were operational in nature.

The actions required of the PUC by the MOE in the 1998 inspection report were a reasonable response to the problems identified. If they had not been a reasonable response, then perhaps the health unit should have become more involved. Following the inspection, difficulties at Walkerton arose because the Walkerton PUC did not do what it was reasonably directed to do by the MOE in the inspection report. It would not have made sense for the health unit to have duplicated the MOE's efforts in ensuring that an operator complies with the actions required by the MOE. If the MOE is satisfied, then it seems reasonable that a health unit should also be satisfied that the appropriate actions have been followed.

The inspection report directed the operators to maintain a chlorine residual of 0.5 mg/L after 15 minutes of contact time. That was the proper way to address concerns about water quality. The MOE should have ensured from an operational standpoint that this was done. Similarly, it should have ensured the proper monitoring of chlorine residuals: either manually, or by way of installing the appropriate monitoring equipment.

In my view, the local public health inspector should have discussed with the MOE and the PUC operator the significance of the adverse water quality results disclosed in the 1998 inspection report.[14] However, I do not think

[14] Also, the public health inspector probably should have noted that he had not received all of the adverse water quality reports shown in the inspection report; he then should have taken steps to ensure that he received the reports in the future. However, even if he had done so and had raised that with the MOE, I do not think there would have been any effect on the events of May 2000.

that in this case it would have mattered. The inspection report identified the seriousness of the situation. The required responses were operational in nature. The MOE had already correctly identified those responses and, as I conclude in Section 9.3, should have conducted a follow-up inspection to ensure the PUC did what it was directed to do. The health unit was entitled to rely on the MOE to do that. The failure to act was the MOE's, not the health unit's.

The manner in which a health unit should respond to an MOE inspection report was another area of uncertainty in the public health system. As I have said before, there was no centralized guideline or protocol. Dr. Colin D'Cunha, the current Chief Medical Officer of Health, testified that if he had read the 1998 inspection report relating to Walkerton, he would have followed up with some action.

Dr. Alexander Hukowich, the Medical Officer of Health for the Haliburton, Kawartha and Pine Ridge District Health Unit, testified that in the year 2000, he developed a template to be used by public health inspectors upon the receipt of an MOE inspection report. The inspectors were asked to complete the template after reviewing the report and meeting with the operator. The Medical Officer of Health was to be advised of anything that he or she should be made aware of. I believe that this is a useful initiative by Dr. Hukowich.

However, Dr. McQuigge and others did not follow the practice described by Dr. Hukowich. That speaks to the uncertainty and the lack of uniform or helpful guidance from the Public Health Branch.

At the end of this chapter, I have included my recommendation for a province-wide direction relating to the receipt of inspection reports.

8.7.4 The Discontinuation of Public Laboratory Testing

In 1996, the Government of Ontario discontinued the provision of laboratory testing services for municipal treated water systems. Municipalities like Walkerton were thereafter required to use private sector laboratories.

The government did not enact a regulation mandating private laboratories to notify the MOE and the local Medical Officer of Health about any adverse water quality results. Concerns were raised by a number of public health

authorities about the reliability of the process then in place. The Bruce-Grey-Owen Sound Health Unit raised the issue with the MOE district office and received assurances that the notification process would be followed and that the health unit would be notified of adverse results.

I am satisfied that the health unit acted appropriately. The failure here rests with the government for not enacting a legally binding regulation mandating that the proper authorities be notified of adverse results as part of the implementation of its decision to discontinue routine testing by provincial laboratories.

There was a good working relationship between the MOE's Owen Sound office and the Bruce-Grey-Owen Sound Health Unit. Although there were no formalized meetings or communications between them, there were a number of ad hoc meetings to deal with particular issues as they arose.

The health unit's Water Quality Committee met on September 12, 1996. The minutes of that meeting indicate a concern about the transfer of water testing from the Ministry of Health to the private sector. They also indicate that the health unit had earlier notified Willard Page, the district supervisor in the MOE's Owen Sound office, in a letter dated August 30, 1996, of its concerns about the discontinuation of testing by the government laboratories. The minutes state: "It is an MOEE responsibility to set up a suitable protocol. They are aware of our concerns through correspondence from Dave Patterson and the Public Health Lab. The Municipality is ultimately responsible to ensure delivery of potable water."

In a responding letter to Mr. Patterson dated October 24, 1996, Mr. Page stated that MOE staff would report all adverse results received to the health unit. In a memo to all public health inspectors dated November 22, 1996, Mr. Patterson expressed concerns about the transition of the laboratory work: "This transition has been poorly handled. Much confusion has been caused by stakeholders taking contradictory positions. The Public Health Laboratory has continued service to save jobs." Mr. Patterson testified that the transition occurred rapidly and that it did not appear to have been coordinated.

A significant meeting was held on May 2, 1997, at the request of the health unit, concerning the discontinuation of routine analytical testing by government laboratories. The notice of the meeting set out the agenda, which included the ODWO, private laboratory analysis procedures, and notification of adverse results.

At this meeting, Philip Bye, at that time the new supervisor of the MOE's office in Owen Sound, expressed three concerns with the existing arrangements in light of the discontinuation of government testing. First, he felt that the notification requirement should have the force of a regulation. Second, he felt that the ODWO should be changed to provide that the private laboratory be required to immediately notify the health unit of an adverse result, and to provide for an opportunity for discussion between the health unit and the MOE regarding the operational aspects of the system. Third, he was concerned about the absence of a dedicated inspection program in respect of private communal water systems. Mr. Bye also indicated that the ODWO was being revised in the near future to require the operating authority to contact the health unit directly. This differed from what the ODWO then required – that the laboratory notify the MOE District Officer, who in turn would notify the Medical Officer of Health and the operating authority. The ODWO was never revised as Mr. Bye suggested.

At the meeting, Mr. Bye also stated that the MOE staff would contact all major municipal waterworks operators to confirm that they were carrying out the required bacteriological sampling program, to confirm that they were aware of the current notification requirements, and to determine which laboratory they were using for water sampling. With the information obtained, the MOE prepared and circulated a list of municipalities not conforming to the minimum sampling program.[15]

In my view, the health unit acted appropriately in responding to the privatization of laboratory services. It sought and received assurances from the MOE that notification of adverse results would take place. It was entitled to rely on those assurances. As I conclude in Chapter 10, when laboratory testing services were privatized, the provincial government should have enacted a regulation requiring mandatory notification.

[15] It is not clear whether and to what extent the MOE confirmed that municipal waterworks operators were aware of the current notification requirements, or whether the MOE determined which laboratories were being used by various municipalities.

8.8 The Boil Water Advisory

8.8.1 Boil Water Advisories Generally

Section 4.1.3 of the ODWO provides that the Medical Officer of Health can issue advice in the form of a boil water advisory where the circumstances warrant. Furthermore, section 13 of the *Health Protection and Promotion Act* provides the Medical Officer of Health or a public health inspector with the legislative authority to issue boil water orders.[16]

There is a distinction between a boil water order and a boil water advisory. A boil water advisory – a term used in the ODWO – is issued by health units to advise consumers not to drink water. A boil water order is more appropriate for directing operators of food premises, and water producers or distributors, to boil water before providing it to consumers.

The Bruce-Grey-Owen Sound Health Unit's public health inspection policy and procedure manual contains a procedure for dealing with boil water advisories. Procedure IV-50 provides that the presence of total coliform organisms in a treated water supply may indicate inadequate treatment, or contamination, in the distribution system. The procedure requires the investigation of the water supply for chlorine residuals and the collection of additional samples. The MOE must be informed of any boil water advisory issued in respect of any system under its jurisdiction. The procedure also provides that with regard to a treated supply, the advisory can be lifted if a satisfactory residual is present and one satisfactory sample has been received. The unapproved revision of this procedure of April 2000 did not change the procedure.

The Public Health Branch of the Ministry of Health did not provide local health units with a boil water advisory protocol. Dr. Colin D'Cunha testified that such a protocol was not developed because it was felt that the ODWO and the exercise of professional judgment by the Medical Officer of Health or a public health inspector addressed the issue. However, such a protocol is now being developed; clearly it is necessary.

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[16] *Health Protection and Promotion Act*, R.S.O. 1990, c. H-7, s. 13.

8.8.2 The Timeliness of the Boil Water Advisory

The Bruce-Grey-Owen Sound Health Unit was first notified of the outbreak in Walkerton on May 19, 2000. It issued a boil water advisory two days later, at approximately 1:30 p.m. on May 21. In the interval, it actively pursued an investigation to determine the source of the illnesses that were being reported. Some parties to the Inquiry argued that the health unit should have issued the boil water advisory sooner. I am satisfied that the health unit acted responsibly and should not be faulted for the timing of the issuance of the advisory.

Issuing a boil water advisory involves exercising a good deal of judgment. Important information received by the health unit during its investigation pointed away from water as being the source of the illnesses in Walkerton. Shortly after it began the investigation, on the afternoon of May 19, the health unit twice contacted the PUC's general manager, Stan Koebel, and was assured there was no problem with the water. It spoke to Mr. Koebel twice again on May 20 and received further information indicating that the water was safe. The health unit had no reason not to accept what Mr. Koebel told it.

Moreover, the symptoms being reported by those who had become ill were consistent with *E. coli* O157:H7 (sometimes called the "hamburger disease"), which is typically associated with food sources, not water. Importantly, the local Medical Officer of Health, Dr. Murray McQuigge, was not aware at that time of any reported *E. coli* outbreak that had ever been linked to a treated water system in North America. For those who were considering the possibility of *E. coli* contamination, water was low on the list of suspects. Moreover, there were reports of illnesses outside of Walkerton. This also tended to point away from water as the source of the problem.

In addition, Stan Koebel told the health unit that starting on the evening of May 19, he would flush and chlorinate the water system as a precaution. On May 20, the health unit was advised that there were chlorine residuals in the distribution system. This provided some comfort that the water, at least by then, was not contaminated.

From the outset, the health unit actively pursued various potential sources for the outbreak. It followed all leads. There is no question that the health unit staff worked diligently throughout the weekend and in the days that followed. There was no lack of effort on their part to investigate the outbreak and to safeguard the health of the community.

With one exception, which I mention below, the health unit took the proper steps in communicating with hospitals, health care officials, the PUC, and others in the community.

Those who argue that a boil water advisory should have been issued earlier point to a number of factors. They say that some people in the community suspected the water. Dr. Kristen Hallett did, as did the Brucelea Haven long-term care facility. Brucelea Haven took protective action. The pattern of illnesses among the young and old pointed away from a common food source and supported the conclusion that water was the problem. There were rumours in Walkerton that water was the source, and some of these rumours were passed on to the health unit.

All of this is, of course, correct. These factors supported the notion that water may have been the problem. However, in response, the health unit took the logical step of investigating the water. Health unit staff contacted the operator of the water system to determine whether there had been any recent events related to water safety. Had the health unit's questions to the PUC been answered in a straightforward manner, a boil water advisory would have been issued on May 19. It is not reasonable to expect the health unit to immediately have gone behind the answers it received from the Walkerton PUC. Unfortunately, for a time, those answers tended to steer the health unit away from concluding that water was the source of the outbreak.

There was some suggestion that the failure of the health unit staff to review the Walkerton water file on May 19 contributed to a delay in issuing the boil water advisory. In particular, it has been suggested that if the file had been reviewed on that date, a boil water advisory would have been issued earlier than May 21. As a result, the argument goes, the impact of the outbreak would have been lessened.

Several witnesses agreed that if the cause of the outbreak was water-related, information from the previous week or two would be most relevant. The information in the water file was dated: the May 1998 inspection report was the most recent relevant information. That information was of limited assistance in view of the information received from the PUC that there were no recent problems with the drinking water. Even if the health unit had referred to the file, I am satisfied that it would not have done anything differently, in view of the assurances it received from Stan Koebel.

One further aspect of the health unit's response requires comment. Before the boil water advisory was issued, representatives of the health unit advised members of the public that it was safe to drink the water because of the assurances given by the PUC. Mr. Patterson also encouraged Stan Koebel on May 20 to contact a local radio station and inform its listeners that the water was safe; Mr. Koebel did not do so. In giving the advice to the public about the safety of the water, the health unit representatives relied upon the PUC assurances and the belief that if the source of the contamination was water, the bacteria would no longer be in the distribution system, given the incubation period for bacteria. They also relied on the fact that the system was being flushed and chlorinated. As well, the health unit staff continued to believe that because *E. coli* O157:H7 is essentially a food-borne disease, the likelihood that the illness was transmitted through a treated water system was low.

In my view, the health unit staff should have advised the public of the precise situation as it existed at that time: the source of the outbreak was still unknown, water had not been ruled out as a factor, and the investigation was continuing. Even though the PUC was obtaining positive chlorine residuals from the distribution system, it was nonetheless possible that contamination could have been found in the system's dead ends. Some people, armed with this knowledge, may have elected to continue drinking the water; others would have decided not to.

In summary, I am satisfied that the health unit should not be faulted for failing to issue the boil water advisory before May 21 at 1:30 p.m.

8.8.3 The Dissemination of the Boil Water Advisory

It would have been preferable if the boil water advisory had been disseminated more broadly on May 21. The advisory was broadcast on the local AM and FM radio stations, CKNX and CFOS. In the past, the health unit had used radio effectively to convey information about infectious diseases. The health unit did not contact either CBC Radio or the television stations because it did not think they would be as effective in disseminating this type of information in a rural community such as Walkerton. Also, the health unit had not used these media in the past to disseminate such information. Although faxes containing notices of the boil water advisory were sent to the newspapers on May 21, because this was a long weekend, local newspapers could not publish this information until May 23. Further, the health unit did

not distribute pamphlets or handbills to the residents of Walkerton to alert the citizens to the measures they should take.

The health unit staff notified area institutions of the boil water advisory on May 21. Hospitals in Bruce and Grey Counties and area physicians were informed of the advisory on the same day, as was the MOE. However, because of the oversight of a staff member, Maple Court Villa and Brucelea Haven were not notified until May 23. Fortunately, both Brucelea Haven and Maple Court Villa had taken steps to ensure that these facilities' residents did not drink water from the Walkerton system. The Walkerton Jail was not directly notified and only came to learn of the boil water advisory on May 22. That was unfortunate. On May 21, Dr. McQuigge informed the mayor of Brockton and the directors of education for both area school boards of the advisory. The Minister of Health and the Chief Medical Officer of Health of Ontario were also notified on May 21. The local health unit also communicated with area physicians and hospitals concerning treatment.

After May 21, a number of steps were taken by the health unit to disseminate the boil water advisory. Background information and notices were sent to area hospitals, physicians, laboratories, and food establishments. Meetings were held with local hospitals and physicians. Media releases, interviews, and press conferences were provided regularly. Information was posted on the health unit's Web site to inform the public of the latest developments. As well, informal communications with the appropriate authorities continued through the crisis.

At the Inquiry, Mr. Patterson and Dr. McQuigge testified that if they faced a similar situation again, they would use the local television stations to inform the residents about the boil water advisory. Dr. McQuigge also confirmed that it would have been a good idea to have had pamphlets delivered door-to-door. That would have been a better approach, because the boil water advisory should have been more broadly publicized. I note that at the time, there was no protocol from the Public Health Branch addressing the manner for disseminating boil water advisories; I am recommending that there should be such a protocol.

After the outbreak, Dr. Andrea Ellis, the Health Canada epidemiologist who assisted the health unit, investigated the effectiveness of the boil water advisory. Questions were asked about when and how people heard about it. Of the residents using Walkerton water, 56% had heard about the boil water advisory on May 21, 18% had heard about it on May 22, and 8% had been informed of it on May 23. Interestingly, 17% claimed to have heard about it before

May 21. In addition to the survey evidence, the Inquiry heard direct evidence from Walkerton residents that they had not heard about the advisory on the day it was issued, May 21.

From Dr. Ellis's investigation, it is apparent that the boil water advisory was very effective in influencing people's behaviour. The respondents to the Health Canada survey stated that, after learning of the advisory, they used an alternative source of water 94% of the time for drinking water, 91% of the time for mixing other drinks, 82% of the time for brushing their teeth, and 86% of the time for washing fruit and vegetables; and that they followed the recommendations for the use of chlorinated water for hand washing 82% of the time. Dr. Ellis commented that the level of compliance observed in Walkerton appeared to be much higher than in previously reported studies.

In summary, it would have been better if the health unit had disseminated its boil water advisory more broadly on May 21. I recommend that a protocol for boil water advisories be developed.

8.9 Recommendations

The following recommendations relate to the roles of the local Medical Officers of Health as they apply to communal water systems. I will deal with this topic more extensively in the Part 2 report of this Inquiry.

I recommend the following:

Recommendation 1: The *Health Protection and Promotion Act* should be amended to require boards of health and the Minister of Health, acting in concert, to expeditiously fill any vacant Medical Officer of Health position with a full-time Medical Officer of Health.

Recommendation 2: Random assessment should be conducted on a regular basis by the Minister of Health, or his or her delegate, pursuant to the *Health Protection and Promotion Act*, of public health boards in Ontario to ensure their compliance with the Mandatory Health Programs and Services Guidelines of the Public Health Branch. Further, the Public Health Branch or the Minister of Health's delegate should continue to track, on an annual basis, trends in non-compliance by public health boards in Ontario, in order to assess whether altered programs and services guidelines are required

and whether resourcing allocations by the Province of Ontario require adjustment to ensure full compliance.

Recommendation 3: The role of the local Medical Officers of Health and health units in relation to public health issues concerning treated and untreated municipal water systems should be clarified and strengthened. In particular, clarification is required as to whether local Medical Officers of Health are required to implement a proactive approach to responding to adverse drinking water sample test results upon receiving notification of these results.

Recommendation 4: Written guidance – developed in cooperation with local Medical Officers of Health and the MOE – should be provided to local Medical Officers of Health by the Public Health Branch. It should include steps to be taken by Medical Officers of Health upon receipt of MOE inspection reports and adverse drinking water sample test results.

Recommendation 5: Regular meetings should be scheduled between the local MOE office and local health unit personnel to discuss public health issues, including issues related to waterworks facilities as documented in MOE inspection reports. Any affected operator or laboratory should be invited to attend the meeting.

Recommendation 6: Upon the implementation by the MOE of the Integrated Divisional System (management information system), access to it should be made available to local health units and, where appropriate, to the public. This should include access to profiles of municipal water systems and to data concerning adverse drinking water quality sample test results, as included in that database.

Recommendation 7: The Public Health Branch should develop a Boil Water Protocol – a written protocol outlining the circumstances in which a boil water advisory or a boil water order could and should be issued. I will be commenting on the government's current draft proposal in the Part 2 report.

Recommendation 8: The Boil Water Protocol should be developed by the Public Health Branch in consultation with Medical Officers of Health, municipalities, and the MOE. The Boil Water Protocol should provide guidance concerning an effective communications strategy for the dissemination of a boil water advisory or order.