THE NORTH BATTLEFORD WATER INQUIRY

SUBMISSION OF THE PROVINCE OF SASKATCHEWAN

SASKATCHEWAN ENVIRONMENT AND RESOURCE MANAGEMENT
MUNICIPAL AFFAIRS AND HOUSING
SASKATCHEWAN HEALTH
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I. Introduction

1. The cause of the contamination of the North Battleford water supply can be viewed on a number of different levels. There is no one singular cause of the contamination, nor even one single set of specific factors that created the surrounding circumstances. Rather, the evidence appears to disclose a constellation of circumstances which, once mixed, resulted in a tainted water supply. This, in turn, led to an outbreak of cryptosporidiosis in the community. This Submission will address the various levels of factors which played a role in the contamination. For ease of reference, these factors will be divided into three different categories.

2. The first category can be described as "primary" factors: at its base level, the outbreak of cryptosporidiosis was due to the contamination of the public water supply in the City of North Battleford. This was a direct result of the upset condition in the SCU. This primary factor is dealt with in the Health Canada Report [Exhibit C-12] and the testimony of Dr. Andrea Ellis.

3. The circumstantial factors giving rise to the contamination can be described, for lack of a better phrase, as "secondary" factors. These factors are generally articulated through the Report of Dr. Stephen Stanley [Exhibit C-88] and his testimony. There are, however, other "secondary" factors, giving rise to the contamination which were manifest in testimony dealing with certain aspects of the operation of the water and wastewater treatment plants. These secondary factors include poor record keeping and the labour-management tensions which existed.

4. Finally, there are considerations that can be considered as tertiary. These considerations, it is submitted, have no direct impact or causal connection to the contamination. A review of these tertiary issues will include consideration of reduced inspections, the training and education of water plant operators, and the adequacy of drinking water guidelines and objectives.

5. Broadly speaking, the Province is involved through four distinct entities: SERM, Department of Health, Municipal Affairs, and the Sask. Water Corporation. It is submitted that the evidence discloses no causative connection for any of these entities. However, as significant evidence was led regarding SERM, this Submission will deal with some aspects of its involvement.

II. Primary Factor: Exhibit C-12

6. Exhibit C-12, the Health Canada Report enunciated by Dr. Andrea Ellis, simply sets out the cause of the outbreak. The Executive Summary, at p. 4 of the Report includes:

> ". . .The outbreak of gastroenteritis in the Battlefords was due to the consumption of contaminated municipal water from the City of North Battleford. The contamination likely occurred following the decrease in the function of the SCU of the surface water treatment plant after plant maintenance on March 20, 2001."

7. The Report was prepared after an extensive epidemiological study conducted by Health Canada immediately following the outbreak.

8. A stark illustration of the causal connection between the malfunctioning SCU and the outbreak is found in the table contained in Figure 18 of the Report [C-12, p. 52]. Figure 18 is a comparison of water quality data with disease pertinent data; in other words, a comparison of the functioning of the SCU with the onset of diarrheal illness. The graphs clearly disclose a direct correlation.

9. Figure 18 of Exhibit C-12 may well be considered one of the most pertinent documents of all of those tendered before the Inquiry.

10. Notwithstanding the near irrefutable nature of this evidence, and the Health Canada Report, some witnesses from the City of North Battleford remained "unconvinced" of this causal connection. City Commissioner, Jim Toye, testified he was "not convinced" [November 29/01, pp. 108-109]. Similarly, Mayor, Wayne Ray did not "necessarily agree" that the contamination was caused by a malfunction in the water treatment plant. Yet, he had no other suggestion as to what could have caused the outbreak [November 30/01, pp. 91-94].

11. This reticence, however, was not shared by consulting water engineer, Rodger McDonald, retained by the City of North Battleford. When asked in cross-examination if he shared the views of the Report, he replied: "It seems to be a plausible opinion." [November 27/01, pp. 111-112].

12. In conclusion, the evidence is overwhelming that the outbreak occurred as a result of the improper operation of the Solids Contact Unit ("SCU") after March 20, 2001. This, in essence, is the primary factor.

III. Secondary Factors: Dr. Stephen Stanley's Report

13. The secondary factors are those which had a causative role in, or impact upon, the contamination. Having determined that the contamination likely occurred as a result of the improper operation of the SCU, an examination into various aspects of the water treatment plant operations is required.

(a) An Upset Condition That Could Not Be Handled

14. At its core, the contamination occurred because there was an upset condition of the plant that the operators could not handle. The settling problem was simply beyond the ken of the operators. Through a lack of understanding of the seriousness of the problem, and a continued lack of understanding by City Administrators, the problem was allowed to flourish for weeks. From March 20 to April 24, 2001 the upset condition was simply neglected.

15. Tragically, the malfunction of the SCU was not reported to SERM. No mention was made to the local project officer or to anyone else at SERM. Curiously, the operators as a group did not display any great concern among themselves. The operators, for a variety of reasons, did not raise the alarm and press the point with City Administration. Neither did the Director of Public Works and Engineering. While it appears that some unorthodox measures were taken, such as depositing dirt into the SCU [October 11/01, pp. 218-221], the operators did nothing else.

The alarm was only sounded when people in the community became sick.

16. The crux of the contamination is that the operators mishandled an upset condition. This was then compounded by the inaction for weeks thereafter.

(b) Dr. Stanley's Report

17. The most important document in this respect is Exhibit C-88, the final Report prepared by Dr. Stephen Stanley. In considering the factors that caused the contamination, Dr. Stanley offered this:

> "When exploring what might have been the possible causes of the event in North Battleford in March and April, 2001, it is likely that no one thing will be found to be responsible, but it will have resulted from a combination of circumstances. Some of these circumstances can be related to the raw water source, the treatment plant infrastructure, operations of the facility, regulated performance requirements and the monitoring program that existed at the time. The combination of these factors greatly increased the risk of a significant contamination event occurring."

18. While a detailed examination into each of the circumstances is not warranted, a brief review of the factors identified by Dr. Stanley sheds some light on the challenges faced at the North Battleford water treatment plant.

(i) Raw Water Source

19. By all accounts, the North Saskatchewan River is a "high risk source". Early in the Inquiry, Dr. Miodrag Belosevic testified that surface waters are inherently more vulnerable to protozoan contamination. Surface waters, as a rule, commonly carry these organisms. [September 18/01, pp. 47-48, p. 74]

20. In particular, the North Saskatchewan River poses particular challenges due to its widely varying turbidity. Not only does the turbidity vary greatly, but the changes occur quite quickly. As noted by Dr. Stanley in his Report [C-88, second page] turbidity from this water source could vary from 1 NTU to over 1,000 NTU. The evidence from North Battleford indicated instances where turbidity exceeded 1,600 NTU.

21. The spring runoff, as well, makes an already high risk source even more vulnerable to contamination. Dr. Stanley agreed that spring break-up would be "particularly hazardous", in a surface water treatment plant. Thus, at the EPCOR Plant in Edmonton, no scheduled maintenance activities occur from February 15 until the end of spring runoff [September 19/01, pp. 218-220]. This factor has particular significance to the North Battleford contamination which occurred in March – April, 2001.

Treatment Plant Infrastructure

22. A significant amount of evidence was heard by the Inquiry on the aging infrastructure of the water treatment plant and, particularly, the sewage treatment plant. The local Environment Project Officer referred to the sewage treatment plant, originally constructed in 1957, as a "museum" [November 9/01, pp. 20-21]. The Director of Public Works and Engineering freely offered that the sewage treatment plant was a "write-off" [November 16/01, p. 186].]. Even the Mayor that the plants were "antiquated" [November 30/01, p. 177].

23. No greater detail is needed other than making brief references to three reports which were, by and large, critical of the plants.

24. First, the Pommen Report [C-38, tab 15] was commissioned by the City of North Battleford as a review of the Public Works and Utility Department. The Report noted, at p. 19, that the plants had not been upgraded in recent years and that:

> "Ingenuity and skill of the plant staff are required to keep these three facilities functioning in compliance with provincial standards."

25. The Pommen Report also noted, at p. 45:

> "Limited technology and monitoring devices and alarms exist within the plants. Process quality controls rest primarily with the plant operators.
>
> As the plants age, the likelihood of equipment down time increases thus adding onus on plant operators to make informed decisions based upon technical knowledge."

26. The Reid Crowther Report [C-38, tab 19] commissioned by the City after pressure from SERM, spoke more bluntly. It noted, at p. E1:

> "Many parts of the plant are old and antiquated, utilize obsolete or outdated technology, or are inappropriately configured to meet the demands placed on them by current wastewater flows and loads.
>
> In recent years, there have been several incidents when the treated effluent discharge from the plant to the North Saskatchewan River was not in compliance with the plant permit issued by Saskatchewan Environment."

The Reid Crowther Report also noted, at p. 3-29:

> "3. Many of the plants processes suffer from out-dated technology and unconventional process configurations…

> They have made it difficult for the plant operators to run the plant in a stable matter.
>
> . . .
>
> 5. Instrumentation and controls are primitive by today's standards. Installing appropriate instrumentation and controls will reduce labour requirements significantly and reduce operator exposure to some of the health and safety risks at the plant.
>
> 6. Retrofitting the existing facility to meet new effluent regulations will be difficult on the existing site. A serious look at the benefits afforded in relocating the plant to a new site should be made."

27. Finally, an optimization study was completed by Anthratech Western Inc. in 1998 [Exhibit C-38, tab 16]. This was an optimization study of the surface water treatment plant. While a relatively technical report, it pointed to serious deficiencies of the operation of the filters at the water plant.

28. The City was, thus, well aware of these issues. City Administration also had the benefit of memorandums from the former plants foreman outlining serious problems with the plants infrastructure [C-38, tabs 9, 10, 11 and 12].

29. Brief mention in this regard, as well, may be made of the City's finances during this period. The former City Commissioner conceded that from 1997 to 1999, the water and sewer utilities enjoyed a surplus of nearly $1 million [November 28/01, pp. 241-245]. Yet, despite that surplus, the expenditures for the water and sewer utilities was only $3,422.00 [November 28/01, p. 244]. The extraordinary surplus accumulated over

these years, as well as the large reserve funds held by the City, are noteworthy when one considers the overall poor condition of the plants.

(ii) Operations of the Facility

30. As Dr. Stanley noted in his Report, the performance of a water treatment plant is largely dependent on the skill and experience of the operators. Several issues arise out of what can generally be categorized as an overall lack of understanding on the part of the operators. The first operator testified believed that all he had to do was keep the turbidity "as low as possible". There was no operational goal for achieving a specific turbidity level, nor was there any discussion as to the maximum turbidity level allowed [September 20/01, pp. 127-128].

31. There was also evidence of the erroneous belief that chlorine could kill cryptosporidium. One operator suggested that although concerns were raised about "crypto", one of the operators (or more) believed that chlorine would kill cryptosporidium [October 9/01, pp. 13-14]. Dr. Stanley noted in his Report [C-88, 13th page]:

> "… There appears to be a lack of understanding of keeping the turbidity as low as possible as it was the only real protection against cryptosporidium. There seems to be an understanding from at least one operator that chlorine was effective against all pathogenic organisms, which is not the case for cryptosporidium. Of importance, there were no procedures in place to ensure that water met water quality criteria, or actions to be taken if water exceeds these criteria. Turbidity seemed to be treated somewhat as an aesthetic parameter, with operators trying to get as low as possible but no action levels set forth it."

(iii) Monitoring Program

32. Another factor enunciated by Dr. Stanley is the inadequate monitoring system employed at the plants. This is important in two respects: first, to ensure that water leaving the plant is meeting the appropriate requirements; second, to monitor the process, control and operation of the treatment plant. The evidence, unfortunately, showed no attempts of monitoring in either of these two respects.

33. As indicated, there was no specific performance goal at the plants. As the initial operator testified, there was only the desire to get the turbidity "as low as possible".

34. Further, little or no further monitoring was done at the plants. As Dr. Stanley noted [C-88, 14th page]:

> "… no water quality measurements were done on the filters which are a major barrier for cryptosporidium. The only continuous measure of turbidity was on the reservoir water which gives little information to operators for operating the plant. There appears to be no quality assurance and quality control procedures which raises questions on data which is available. Given the chart recorder only reports to one NTU, and the lack of quality assurance and control program, questions arise as to what the turbidity actually was during the event."

(c) Other Secondary Factors

35. The testimony also revealed certain factors which contributed to the contamination, but which were not directly commented upon by Dr. Stanley. While a detailed or exhaustive review of the evidence is again not warranted, certain examples

suffice to illustrate additional factors which contributed to the circumstances surrounding the contamination.

(i) Testimony of An Operator

36. In surprising testimony, one water plant operator indicated that he was aware of cryptosporidium and the health risk it potentially held. He also appeared to be aware of misconceptions held by others. Whenever he tried to correct these misconceptions, he was, in his words, "ridiculed" [October 12/01, p. 71]. In particular, he was aware of a public health risk when a settling problem occurred in the SCU in March 2001. However, because he was applying for a promotion, he did not press the public health risk with his superior [October 12/01, pp. 55-59].

37. He testified that he was aware as early as March 21, 2001 that a settling problem in the SCU could lead to a risk of contamination [October 12/01, p. 86] but, instead, his personal concerns were allowed to override any concerns for public health [October 12/01, p. 91].

(ii) Labour Management Dysfunction

38. Another critical factor, which permeated much of the testimony, related to the poisoned atmosphere which existed between the operators and their superiors. This is evident from the testimony of the operators and the plants foreman. This atmosphere, in many ways, prevented appropriate communications from taking place. These communications could have drawn attention to the settling problem and, conceivably, prevented or at least lessened the outbreak. Communication, amidst the palpable animosity, was difficult, if not impossible. While no benefit can be derived from

repeating the litany of grievances each side had with the other, it is sufficient (and perhaps charitable) to conclude that the atmosphere at the plants was, at times, dysfunctional.

39. This takes on great import when one considers the critical time after March 20, 2001 when the settling problem was experienced. After a pattern of what can best be described as "non-communication", it is hardly surprising that the operators simply tended to fend for themselves. One of the problems, of course, was that the operators did not appear to realize the gravity of the settling problem. At best, it continued for weeks unabated. As well, however, the lack of communication between the operators and City Administration did not allow for any fruitful discussions of this problem to take place. Although the Director of Public Works and Engineering indicated he had weekly meetings with the operators, it is noteworthy that the only apparent contact with the operators (during a five week period) were two telephone calls on April 9 [October 12/01, pp. 55-59].

(iii) <u>Poor Record-Keeping</u>

40. Another factor that cannot be ignored in this regard is the poor record-keeping practices. While not a causal factor in itself, it is symptomatic of the general malaise at the plants. Rodger McDonald, in his initial testimony, pointed to a problem with a computer program arising through its default program. This, he indicated, was the source of many discrepancies in the plant records [September 19/01, pp. 20-21].

41. As well, however, there was evidence with respect to the poor record-keeping practices of the operators themselves [September 19/01, pp. 37-55]. Mr.

McDonald agreed that good records are necessary to determine whether appropriate water quality standards are being met [September 19, pp. 55-56]. Unfortunately, the records fell short of that standard.

IV. Tertiary Considerations

42. Another level of considerations exist which, as indicated earlier, can be considered tertiary. These have no causative role in the contamination but may be argued as having relevance when considering the surrounding circumstances.

43. At the outset, it is important to note that the regulator must monitor all kinds of municipal water treatment systems in the Province. This includes a wide variety of water sources and differing water treatment systems. The issues that concern this Inquiry are largely ***operational*** issues and these, it is submitted, are not appropriate for specific or detailed regulation.

44. One tertiary consideration that has been raised is the reduction in inspections. In North Battleford, in particular, a formal compliance inspection was not done by SERM since 1991.

45. However, it is important to remember three points.

46. First, an inspection would not have prevented any contamination unless it had taken place during the specific five week period while the SCU was not functioning. The testimony revealed that an inspection does nothing more than provide a snap shot of how the facility is operating on that particular date [November 8/01, pp 109-111].

47. This theme was elaborated upon by the Medical Health Officer for Saskatchewan. It was noted [October 18/01, p. 57]:

> "Unless you are going to inspect every day, you have to rely on the operators to notify you in the interim, when something is going wrong."

[October 18, p. 60]:

> "… but regulations are there in place to deal with certain specific aspects, it doesn't take away judgment and intelligence."

48. Attendance by an inspector on a particular date does not result in a complete review of policies, practices and procedures undertaken by various operators at a water treatment plant (or any other facility). Further, it is wrong to believe that a routine compliance inspection would result in a detailed data review of the plant's records. Given the volume of data before the Inquiry, it is incongruous to assert that such an inspection could involve a review, for example, of turbidity records, or chemical applications, for the past year or more.

49. It was also suggested in evidence that inspections would allow for a "rapport" to be established between regulator and client. Richard Koroluk, the Public Health Inspector for the Battlefords Health District suggested this benefit of inspections [November 5/01, pp. 139-140].

50. However, the evidence illustrated a very good rapport between SERM and North Battleford. The former plants foreman testified that he met with SERM on a monthly basis in order to deliver reports, and had ample opportunity to discuss matters or

concerns. Indeed, he felt that the SERM project officer was a useful resource [November 7/01, pp. 160-163, p. 180].

51. Thus, inspections are not a mandatory prerequisite to the building of a "rapport" between regulator and client. A good rapport can exist with or without formal inspections.

52. Second, it must be emphasized that SERM had extensive contact with the City of North Battleford. Whenever any concern was raised, SERM's response was prompt and effective. The evidence clearly manifests a pro-active and responsive regulator, as shown by these examples:

(a) In September 2000 routine testing disclosed a bacteriological contamination. Utilizing the new Interim Bacteriological Protocol, SERM immediately responded and a Precautionary Drinking Water Advisory was issued from September 15 to September 19, 2000. It is noteworthy, in this respect, that the regulator was involved very quickly. While there was some criticism as to ***whom*** ought to have issued the Advisory, in the end analysis, prompt and effective steps were taken.

(b) In January 2001, SERM was asked by one of the plant operators for technical assistance on an issue at the sewage plant. Again, SERM responded promptly and attended to the sewage treatment plant. At this meeting, a cost effective solution was provided [October 12/01, pp. 61-64].

(c) In April 2001, once a public health issue was raised, SERM responded instantly. On April 24, a meeting was called by the Public Health Inspectors with the City of North Battleford. SERM was neither advised of, nor invited to this first meeting. The evidence of one of the Public Health Inspectors revealed the immediacy of the SERM response [October 17/01 pp. 166-168]:

Q: "It was 4:30 p.m. on April 24 that you called Mr. Meekma to notify him or to—just to consult with him?
A: There about that time, yes.
Q: That's fair. Just shortly before you left for the day or—
A: Yeah.
Q: You were hoping to leave for the day?
A: Yeah, hoping to leave, yeah.
Q: And Mr. Meekma wasn't in but I take it there was no difficulty in accessing Mr. Getzlaff and Mr. Bonke in Saskatoon?
A: No. No difficulty at all.
Q: And I take it, as an immediate result of that conversation, you understood Mr. Getzlaff and Mr. Bonke would get the Saskatoon lab to do cryptosporidium testing that very night?
A: That was my understanding.
Q: So it appeared to you that Mr. Getzlaff of SERM and Mr. Bonke of SERM were responding immediately to that concern?
A: Yes.
Q: And I think you fairly indicated that you did not inform Mr. Getzlaff of the meeting that was to take place that evening?
A: No, I didn't know about it at that time, when I was speaking to him.
Q: Okay. That's fair. So Mr. Getzlaff or anyone from SERM wouldn't have any way of knowing about that particular meeting?
A: No.
Q: And that night, during the meeting, Mr. Getzlaff called you, during—
A: Yes he did.
Q: And he asked for an update?
A: Yeah, that's what he did. And I—and then I—that's when I informed him of the meeting that was currently going on.
Q: Alright. And then, even later on, after that meeting broke up, you had talked to Mr. Getzlaff on the second occasion?
A: Him and Mr. Muldoon.
Q: Okay. As well as Mr. Meekma, you were able to locate him?
A: That was later, yes.
Q: And you were able to speak to him about a meeting on the morning of April 25th at 8:00 a.m.?
A: Yes.

(d) Mr. Meekma was called back from his holidays on April 24 and attended the morning meeting on April 25. Thereafter, events followed quickly. A Precautionary Drinking Water Advisory was soon issued and, ultimately, an Emergency Boil Water Order.

The promptness, and effectiveness of SERM's response, allows for no criticism.

53. Third, one must be cognizant of overtures made by SERM to the City of North Battleford. After the Walkerton tragedy in May 2000, SERM sent a letter [C-41, tab A-19] to all 542 municipalities in the Province, reminding them of the importance of

proper bacteriological testing. The Mayor responded to this reminder [C-41, tab A-20]. While he acknowledged the municipality's responsibility to provide safe drinking water, he was "dismayed" that SERM was unaware of all the steps the City had taken. Yet, when cross-examined, he admitted that he never made any inquiries to determine if proper steps had been taken, and simply "assumed" that things were right [November 30/01, pp. 125-138].

54. Another overture from SERM took place by way of an offer of a "Partnership Agreement" [Exhibit C-103]. In late 1998, a meeting was arranged between the City Engineer and SERM. At this meeting, an arrangement was discussed whereby North Battleford and SERM could enter into a "Partnership Agreement" which would allow the City to discuss and consult with SERM on any environmental issues. After this meeting, SERM wrote a letter in April 1999 [Exhibit C-103] seeking to follow up on this initiative. Unfortunately, the City chose to decline the initiative.

55. SERM, the evidence contains, showed a continuous presence in North Battleford. As indicated in the evidence of the former plants foreman, there were, at minimum, monthly encounters. As well, SERM's involvement with North Battleford in the months prior to April 2001 was extensive. Against this background, it is wrong to conclude that the absence of routine inspections had any causative role in the contamination.

V. Education of Operators

56. The relative lack of training and education of operators in North Battleford (as compared to other locations) is a factor which falls into the causative category.

57. Here, it is noteworthy that SERM took steps to supplement the education and training all operators in the Province with various publications, training courses and seminars. It is trite, of course, that the owner-operator of a facility has the responsibility for adequate training and education; nonetheless, the evidence discloses a number of SERM initiatives aimed at enhancing the training and education of operators, as well as awareness of water quality issues.

58. One must also make note, comparatively, of the evidence provided by Bruce Clark in Saskatoon and Rick Hanson of Prince Albert. Bruce Clark portrayed a very dedicated, thoroughly professional attitude, toward water treatment.

59. Rick Hanson, similarly, exhibited a thorough commitment to continuing education. For example, after the Milwaukee cryptosporidium outbreak in 1993, the Prince Albert plant commenced a sampling program. Further, in 1996, filters were upgraded. Finally, in 1996 or 1997, manuals and a video on cryptosporidium and giardia were obtained [December 5/01, pp. 171-173.]

VI. Are the Guidelines Adequate?

60. There was also a suggestion, from City witnesses, that if the national guidelines were met, the water ought to have been safe. The City took the position that a blind adherence to a guideline of 1 NTU should absolve it of any further responsibility for water safety. Three points are important in response.

61. First, critically important in this regard is the testimony of Dr. Stephen Stanley. He noted in his Report [C-88 14th page] that the guideline of 1 NTU was "never

intended to provide protection against cryptosporidium". He noted that a higher standard of 0.3 NTU is necessary for an appropriate reduction of risk. Further, in his testimony, he indicated that the information to this effect is widely available [November 28/01 pp. 28-30].

62. Second, comparative reference may be made to evidence provided by water treatment personnel from Prince Albert and Saskatoon. In Prince Albert, the operational guideline is 0.2 NTU. In Saskatoon, 0.1 NTU is sought.

63. Third, even if the City suggests that adherence to the 1 NTU guideline absolves it of any responsibility, exceedences of that guideline were evident. Exhibit C-15 showed several occasions of turbidity exceeding 1 NTU in the distribution system in March and April, 2001.

64. Further, Exhibits C-72 and C-73, lead through the Director of Public Works and Engineering also show similar turbidity excursions on different dates in 1999 and 2000.

65. The City's position, that simple adherence to the 1 NTU guideline guarantees safe water, belies a fundamental misconception of water safety issues.

VII. Conclusions and Suggested Recommendations

66. The central cause of the contamination related to the upset condition at the surface water treatment plant that was not handled properly, or in a timely way.

67. The suggested recommendations, therefore, are directed to this core element.

(1) The first recommendation that may be suggested could encompass the requirement that the owner/operator of a water treatment plant report any upset condition or malfunction of equipment immediately. In this instance, had SERM been promptly notified of the upset condition, and the resulting settling problem, steps could have immediately been taken to assist in solving the problem and protecting the public from a risk of contaminated water.

(2) Second, given the importance of adequate training and education of water plant operators, suggested recommendations could include that SERM, along with the Operators Certification Board, SIAST and other interested agencies, re-examine the adequacy of training, education and continuing education of water works, sewage works operators including:

(a) whether SIAST curriculums are comprehensive and specific to the various water works and sewage works infrastructures in Saskatchewan; and

(b) the requirement and feasiblity of continuing education reuqirements for water works and sewage works operators.

(3) Third, it is important that the public have information about drinking water quality. With that in mind, there could be a recommendation to consider practical means to improve access to the public to community drinking water quality data. This would, in effect, accommodate any member of the public who wished to review routine testing and sampling data collected by their community.

ALL OF WHICH IS RESPECTFULLY SUBMITTED THIS 9th DAY OF JANUARY, 2002.

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Per:_____
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