



Source Protection Committee

Wednesday, March 26, 2008

10:00 a.m. to 3:00 p.m.

White Carnation Banquet Hall, Holmesville

MEMBERS PRESENT

Keith Black, Ian Brebner, Larry Brown, Gib Dow, Al Hamilton, Mike McElhone, Marilyn Miltenburg, Jim Nelemans, Matt Pearson, Bill Rowat, Mike Strang, Rowena Wallace

LIAISONS PRESENT

MOE Liaison Jennifer Arthur; Kettle and Stony Point First Nation Liaison Bob Bresette; Source Protection Authority Liaison Jim Ginn; Health Liaison Bob Worsell

WITH REGRETS

SPC Members Karen Galbraith, Don Jones, Gerry Rupke and Mert Schneider; Walpole Island First Nation Liaison Kennon Johnson

DWSP STAFF PRESENT

Sue Brocklebank, Cathie Brown, Tim Cumming, Chris Van Esbroeck

OTHERS PRESENT

Brian Luinstra, Hydrogeologist, Luinstra Earth Sciences

CALL TO ORDER

Larry Brown, Chair of the Source Protection Committee, called the meeting to order at 10:09 a.m.

AGENDA

MOTION #SPC: 2008-03-01

Moved by Marilyn Miltenburg
Seconded by Ian Brebner

That the agenda be approved as circulated.

Carried by Consensus.

MINUTES FROM FEBRUARY 27, 2008**MOTION #SPC: 2008-03-02**

Moved by Jim Nelemans
Seconded by Mike McElhone

That the minutes from February 27, 2008 be approved with the addition of Jim Ginn's name to 'Liaisons Present'.

Carried by Consensus.

DECLARATION OF PECUNIARY INTEREST

None

TERMS OF REFERENCE UPDATE

As members are aware, the regulation requires that the Source Protection Committee must submit the Terms of Reference to the lead Source Protection Authority by August 20, 2008. The draft document prepared is a text version that can easily be reviewed by the public. Alternately, staff will also be filling out a database called the Terms of Reference wizard which will contain that same information and which will be submitted to the MOE. At this point, the text document is in an early draft form and is not a public document. A final draft for public consultation will be ready for the April meeting.

It is asked that members do not share or copy this draft document.
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The introduction of the document details why the ToR is required and how it fits into the broader picture of Drinking Water Source Protection. It explains how the ToR is a workplan that scopes the work of the committee, what tasks are being undertaken and by whom, and what the time frame is for the tasks. The workplan begins in 2009 when the Minister approves the ToR and runs to 2012.

The body of the document lists the municipal residential systems: the number of wells per system, the location of intake, and what community the system might serve. Two tables were created for the Ausable Bayfield source protection area and the Maitland Valley source protection area. In addition, these tables would show other systems if they are elevated and other First Nations systems if requested.

The appendices at the back of the document detail the tasks for the Assessment Report and the Source Protection Plan. These tasks come from the Clean Water Act and are not anticipated to change much when Director's Rules come forward. Some tasks have an identified lead. Thus far, no one has come forward to say that they would like to be the lead as opposed to another group. At this stage, the project is asking municipalities about the level of involvement they want in Drinking Water Source Protection. In addition to the tasks that come from the Clean Water Act, management, staffing, and communications are taking place. Although the appendices have many tasks that have a cost estimate of 'tbd', there was nothing from the newly released provincial budget to indicate that anything unexpected was announced.

Matters that affect other SPCs include regional groundwater vulnerability mapping, shared municipalities, and wellhead protection area cross-boundary issues. To date, the project has tried to keep other projects informed of the products and meetings in our region. Also, Great Lakes Agreements must be considered in the ToR including any LaMPs (Lakewide Management Plans) or RAPs (Remedial Action Plans). There are neither LaMPs nor RAPs in the region.

In Maps 2 and 3, the wellhead protection areas are delineated by

- Zone A – 100 m. radius from the well
- Zone B – 2 year time of travel (TOT) to the well
- Zone C – 5 year time of travel (TOT) to the well
- Zone D – 25 year time of travel (TOT) to the well

The ToR draft is based on exactly what is required by the CWA. There are, however, a list of other issues that the project may wish to proceed on including a pilot study for village wellfields and a study of the Seaforth brine wells. Consultation with the Health Unit would be beneficial to help chose the wellfields for study. The work done in the pilot studies is not the same as elevating a system into the ToR. The decision of elevation rests with the municipalities. Information from the pilot studies could be given to the municipalities for possible elevation in round two of the process.

Mistakes noted in the ToR draft document

- Table of Contents typos for p. 16, 19, 20
- Misspelling of the word 'Saugeen' on p. 6
- Most of the systems for Central Huron are located in the AB Source Protection Area.

The municipalities have been invited to a municipal preview of the Terms of Reference on Friday April 4th, 11:00 a.m. to 12:00 p.m. at the Ontario Government Building in Clinton.

ELEVATING SYSTEMS INTO THE ToR (Jennifer Arthur)

Other systems can be brought into the Terms of Reference besides municipal residential drinking water systems. These systems, under regulations 252/05 and 170/03, can be included by municipalities through council resolution or by the decision of the Minister of the Environment. Also, wellfield clusters can also be elevated into the ToR. What cannot be included are individual systems that serve one private residence.

Ministry guidance and a decision matrix for elevating systems are being developed and will be distributed to municipalities and the SPCs in May/June. The inclusion of a system should not be driven by SPC, but it is appropriate for the SPC to discuss with municipalities what will happen after elevation occurs. It is stressed that there is no need to rush the decision on elevation until the guidance is received; the ToR can be updated at any time. The Ministry recommends that a proper knowledge base is needed for the decision, and municipalities should understand what it means to elevate and what it will cost to elevate. The matrix is designed to work with varying levels of data availability and municipal capacity.

Risk = Threat + Pathway + Receptor

Relative Risk Factors – Exposure Pathway

- Source type (groundwater or surface water)
- Well depth (shallow, deep)
- Intake density (many, few)
- Vulnerability (High ISI, Low ISI)
- Known issue/treatment (confirmed, possible)

Relative Risk Factors - Receptor Factors

- User sensitivity (special needs, healthy adult)
- Number of people served (high, low)
- Frequency of use (every day, seasonal, part time, occasional)

Relative Risk Factors - Threats

- Septic
- Land use

There are two ways of using the decision matrix:

1. **Regional Screening.** Evaluate the entire municipality using datasets input into GIS to determine what systems would be at highest risk. An example was used from CLOCA to demonstrate the regional screening process. The factors that were studied included well density, well depths, and vulnerability. When all factors were considered, two areas were at the highest risk in the CLOCA example. A good question to ask is, in the prioritized areas of high risk, is the municipality going to provide municipal water in the future? If the answer is yes, then there is no need to elevate any systems in these areas.
2. **Nominated System.** Evaluate one system by the decision matrix. It is a good idea to ask a series of questions before you begin to collect data for the matrix. If there are questions that cannot be answered, then more data is required.
 - Is the system not in area where municipal services will be extended?
 - Is there a demonstrated and documented, persistent problem?
 - Does it present a risk to human health?
 - Is the system a primary source of drinking water for users?
 - Is there a lack of existing legal instruments available to the municipality to provide an effective solution?
 - Is the condition caused by anthropogenic activity?

Besides elevating a system into the ToR, there are other routes that a municipality could take that could provide a solution, since the process is a multi-barrier approach.

- Use existing regulatory framework (PTTW, CofA)
- Land Use planning controls (prevents new risk from moving in)
- Building Code amendments under the CWA to require maintenance programs for on-site septic systems for prescribed areas.

The Benefits/Implications of Elevating a System

- Technical work done on IPZ/WHPA gives a better understating of the area.
- No assurance province will pay for technical work to be done.
- Policies can be created using part four powers of the CWA.
- Municipalities are responsible to ensure policies are undertaken – the cost belongs to the municipality, or the municipality can decide to share the cost with the landowner.

Municipalities are the first to know if a drinking water system is possibly in need of elevation and should go through the process. Source Protection Authorities (SPAs) could choose to nominate a system or look at a region to determine of the decision matrix, but ultimately, if the municipality did not want to elevate the system, the SPAs will have spent money just for their own understanding.

Similarly, no municipality is going to choose to elevate a cluster of wells unless there is a demonstrated problem and the residents are adamantly asking for their cluster to be elevated. In addition, some problems can be resolved outside of the Clean Water Act through legislation and planning. This method would save thousands of dollars.

The Ministry of the Environment is more likely to consider payment if serious risks are known. Implementation funding after the plan is in place is not promised for any system at this point.

Drinking water systems that fall under O. Reg 252/05 will soon be inspected by the Health Unit rather than the MOE. In year one, a risk assessment will be done on those systems.

A concern was expressed that upgrades on well systems need funding programs. At the last Chairs meeting, there was talk of septic re-inspection funding. It is acknowledged that more affordable solutions are necessary, and the MOE is presenting more information in funding at the next Chairs meeting in June. In general, the members expressed that septic system re-inspection programs have had a positive reaction, a very few systems are ripped out. If Huron County goes ahead with a septic system re-inspection program, then a targeted area will be picked with a well assessment occurring at the same time. Many septic systems can be upgraded without significant cost.

Septic systems, however, are not the only issue that may affect a drinking water system. If a screening was done of the region, the well for the Holmesville Community Centre might be a prime example of a vulnerable system. The well is shallow and is located in close proximity to a landfill site and gravel site. Although this was a quantity issue rather than a quality issue, a few years ago a dozen people put in deep wells because the wells went dry.

Septic system re-inspection will not solve all problems, but it is a good start. The biggest bang for the buck is providing for prevention and not just to fix problems.

WATERSHED CHARACTERIZATION

The Watershed Characterization (WC) is a general, background document that is a summary of the information that was known to date (2006). The document was written a couple of years ago with the information that was at hand. The SPC has expressed concerns because of the age of information and a variety of data gaps. Given that the scope of source protection planning is limited to vulnerable areas, some information is just interesting information. With respect to the fourth chapter, the Existing Threats Inventory, the instruction was to brainstorm on any issue that has been documented and any concern that causes the community to wonder if it could be an issue. One suggestion is that a forward be added to the document to limit the use of the document to a resource only for the Assessment Report (AR) and is not a section of the AR. Also, it will be noted that some of the information in the WC is erroneous. Any significant data gaps for source protection planning will be pursued for the AR.

Agricultural Concerns on the Watershed Characterization

- Agricultural information is written in extreme generalities and much of the information is out-dated. In addition, the authors opinions are often included.
- Liquid manure spills have decreased over time and is not prevalent. There is no disagreement that liquid manure spills can affect the quality of water, but the wording should be changed to it possibly being a potential contaminant.
- The Dean and Foran recommendation was that some tillage needed to occur before manure is spread to break the macropores. The majority of the agricultural community and soil and water groups partake in BMPs and comply with this recommendation.
- The spraying of manure has been illegal for several years and is no longer a threat.
- Tying in septic to tiles is also illegal and is not an event that is only linked to agriculture.
- Phosphorus loading increased to 1975, but after 1975 it decreased.
- The St. Joseph's spill was referenced by a newspaper editorial – it should be referenced by a more trustworthy and scientific source.
- If this document needed to be properly edited, it should be done page by page in the committee meeting rather than via e-mail.
- To write a plan, information must be obtained at the property level. Other than to provide a level playing field for information in the watershed, the WC is not that relevant to preparing a plan.

There are disparate opinions by members of the SPC that support the WC statement that “village wellfields must be included in source protection” and others that see that as an opinion and it should be removed from the document.

The Watershed Characterization will be qualified through a foreword and through the minutes that it is a jumping off point for the AR to provide context behind the wellheads and other vulnerable areas. The Watershed Characterization is not a major source for the AR, but it is information for the SPC for the members to understand the watersheds more thoroughly. The issues and concerns piece is still in flux. However, the AR scopes down to those 30-odd wellheads and other vulnerable areas and some of those issues may not appear in the

vulnerable areas. There is a significant break between the Watershed Characterization and the Assessment Report.

MOTION # SPC: 2008-03-03

Moved by Marily Miltenburg
Seconded by Keith Black

That the Watershed Characterization be received for information subject to the inclusion of a forward, and further that the Assessment Report include any updated information for the municipal residential systems and vulnerable areas.

Carried by Consensus.

CHAIRS MEETING REPORT

The SPC Chairs meet quarterly and the most recent gathering occurred at the beginning of March. Jennifer Arthur gave her presentation on elevating systems and the Chairs discussed the ToR process. In addition, it was noted that the proposed regulation, which would amend the the Building Code, was posted March 14th on the EBR. This proposed regulation would establish programs to enforce standards for the maintenance and operation of existing sewage systems in vulnerable areas identified in the assessment report. Comments on this amendment are due by May 1st. <http://www.ebr.gov.on.ca/ERS-WEB-External/displaynoticecontent.do?noticeId=MTAzMDI3&statusId=MTUzOTg5&language=en>

The discussion with the Chairs talked about where the different SPCs are in the process. The ABMV SPC is still at the head of the pack for getting things done. Members may wonder why it may seem that we are rushing to do things, but there is a big advantage to be out in front. Out in front we can see more clearly about what's coming, how it will affect us, and we can devise better options. Based on what Chair Brown and PM Brown have seen of the Director's Rules for the Assessment Report (AR), they believe that there is a better option. At this time, a Tier 2 assessment of properties is required to complete the AR. This method of determining someone's risk score before having a plan in place could cause anxiety for landowners and businesses. Instead, Chair Brown and PM Brown propose that a draft Source Protection Plan could be developed well in advance of 2012. This would give some information as to how the risk score will impact a property owner and the public may feel less threatened by a risk score with the knowledge of what that means. As well, an early understanding of the policies may make it easier to implement the plan down the road. No one seems to have a clear idea of what the plan will look like at this time, and creating a draft will give the committee the vision as to where they are going.

The discussion paper on the AR is going to be out in a few months. This will be the time to put any comment or information forward. Technically, the funding from the province will run out once a plan is developed, so the idea is to have a draft plan initially. Chair Brown and PM Brown hosted a teleconference with other Chairs and PMs to discuss options and develop a meeting with the MOE.

If the Chairs discussed mandatory septic re-inspection, did the Chairs also discuss mandatory metering?

Other provincial programs strongly encourage metering. It will not be long before all systems that are under O. Reg 170/03 and 252/05 have metering and municipalities would not qualify for a grant unless the system has metering. The Municipality of Ashfield-Colborne-Wawanosh was recently able to get away without have metering, but it is the condition of any future Certificate of Approval.

The next meeting of the Chairs will occur June 2-3, 2008.

CURRICULUM MODULES THREE

Understanding the Importance of Water Quality.

This module was meant to be presented at the January 30, 2008 meeting and is a review of some of the information that R. Steele and M. Veliz presented. The SPC viewed segments of the video "Ryan's Well" and partook in "Toxic Trivia". As well, the members participated in an activity "Where Do You Stand?" on water quality in the watershed.

TIER 1 WATER BUDGET PRESENTATION (Brian Luinstra)

The sources of information for the water budget included the 6 CA Feflow groundwater model, SWAT and GAWSER surface water models, and measured parameters such as flow and precipitation. The information used to calculate water supply and water reserve was the best available data; the use of this data and other decisions were vetted through a peer review committee for the Tier 1 Water Budget.

One of the first steps was to determine the subwatersheds for the Tier 1 Assessment. As well, surface and groundwater supplies and reserves were developed, consumption demands were determined, and % water demand was created.

Subwatershed Delineation

In the Conceptual Water Budget, the subwatersheds were delineated where there were gauges. One of the problems with this method is that 1/3 of the region (especially the lakeshore) is not on a gauge. As well, some watersheds were huge because they only had one gauge. Surface water models were created of the entire region and 600 very small subwatersheds were delineated. These could be used on many scales. For the region, 13 major subwatersheds (amalgamating the smaller watersheds) were delineated because the tier 1 water budget is done at a large scale. The subwatersheds were the Ausable and Mud Creek, Parkhill, Bayfield, Upper Nine Mile, Lower Maitland, North Maitland, Little Maitland, Middle Maitland, South Maitland, ABCA Gullies, Goderich and Bayfield Gullies, MVCA Gullies South and MVCA Gullies North.

Consumptive Usage Estimate

There is a difference in permits (PTTW) and consumption for a water bottling company versus a damming facility. The former is removing water from the system while the latter is returning water. Many holders of PTTW have permits that are many times what their maximum taking is. In ten years, permit holders who wish to renew their PTTW must submit their pumping records, and the PTTW will be brought back to a relative amount.

Consumption estimates were calculated independently for groundwater and surface water. For groundwater, users were asked the actual average uses. Some users could only supply the average values. Lacking either values, the PTTW rate was used.

The agricultural industry does not require a PTTW, and estimates had to be developed based on census data, livestock per watershed and the amount of water consumed per head of livestock to determine the consumptive factor for livestock.

Private domestic wells are estimated at 450 L/day which is the water usage assigned for each well in the well water information system (WWIS); however, the WWIS under-represents the number of wells in the region.

For the consumption of surface water, approximately 2mm of rainfall (out of a possible 1000 mm/year) is being consumed, which is a small amount of water being taken. There are large tracts of the region where no surface water is being used. Along the shorelines, the lack of consumption makes sense because the gullies streams are not reliable water sources. With respect to the northern part of the region, there is not a lot of surface water used because there is not much irrigation.

As for groundwater consumption, most areas are below 10mm per year with the exception of the Gullies Area around Goderich (30 mm/year) and that is largely due to Sifto which is a large, consumptive water user.

Surface Water

Average water supply on a monthly basis (50th percentile) was calculated using the daily flow data. Water reserve is considered as water for other uses besides drinking water, such as ecological, and this is the 10th percentile flow. Subtracting the water reserve from the water supply calculates what water is available.

Runoff in the region ranges from a low of 200mm in North Maitland, where this is not a lot of runoff, to 400mm in ACW where the Brookston clays act like pavement and runoff is high.

$$\% \text{ Water Demand} = \frac{\text{Consumptive Use Estimate}}{\text{Lowest Monthly Water Availability (supply-reserve)}}$$

Subwatershed Stress

<20% is low

20% - 50% is moderate

>50% high

If 2mm of average runoff is taken, while there is up to 400mm water supply, then there is only 0.5% of surface water demand. Even areas with only 200mm of water supply have only 1% of surface water demand. All subwatersheds are considered LOW stress. This is primarily because there are very few interior surface water takings and no municipal systems on interior surface water. A Tier II water budget is not recommended for surface water.

Groundwater

Like surface water, 10% of the water was removed from the calculations as a reserve for non-drinking water uses. This was either 10% of recharge, or 10% of discharge – this can be different, but in our region, it is essentially the same.

In calculating the % water demand for groundwater, the equation is the same as for surface water. Annually, if the % water demand is less than 10% then demand is low, 10-25% the demand is moderate and over 25% the demand is high. Consumptive groundwater is low in the region with the exception of the Goderich area. Sifto is a large consumer of groundwater in that area which accounts for the higher consumption (the area is calculated at 32mm/year).

Like surface water, there is low stress for groundwater in all subwatersheds, which is primarily a function of low consumptive takings. There are numerous municipal water supplies and significant recharge areas have not been delineated at this time, but the recommendation is not to proceed with a Tier II Water Budget.

Baseflow measurements will occur in the upcoming field season for 2008. 2006 was thought of as a good data set, but then 2007 had a very dry year. The Tier I Water Budget is a living document. After peer review of the document, the next step is to provide a water quantity risk assessment.

There is a public perception that things are getting drier. A couple of limitations on the water budget were that the Great Lakes and storage differences between aquifers were not to be considered. However, when it comes to the Great Lakes Basin, we have abundant water at the crude scale. At the local scale, there will always be issues related to water quantity.

Questions from the SPC:

- *How are sinkholes considered?*
The effect of sinkholes is so small on the water budget that they aren't treated differently.
- *How will climate change affect the water budget?*
It is not known how climate change will affect the water budget in the region, although you need to look at the whole watershed. If there are heavy rains, most of the water will runoff. If the rains occur in the summer with crops, the recharge will be nil. If there were severe droughts, the recharge would have to be reduced by an order of magnitude to get stress in the subwatersheds. It is estimated that the human impact on Lake Huron could only add up to a couple of cms.
- *If there is no quantity stress in the region, why do we have a Low Water Response Team?*
The water budget is looking at a large scale but individual streams can experience stress. In the Maitland River, during low water periods there is the potential that a reduction of water consumption will decrease the water flow which is augmented by the Sewage Treatment Plant in Listowel. In other words, ground water use facilitates the flow in the STP.
- *If you subtract percolation and runoff from rainfall, what happens to the remainder?*
The remainder goes to evapotranspiration. Evapotranspiration can be as high as 1200mm in the north and 800 mm in the south.

For the next step, the peer review committee will be meeting on April 8th, so the Tier 1 water budget document will hopefully come to the SPC for the April meeting.

CORRESPONDENCE and DELEGATIONS

None

WORKING GROUPS REPORT

The Kingsbridge Working Group met in March. This group has no concerns or comments to bring forward to the SPC at this time. The next round of working group meetings will occur in the beginning of April.

LIAISON UPDATES AND OTHER BUSINESS

MOE – None

Kettle and Stony Point First Nation – The Environmental Health section of the First Nation has put together a water committee that will be advising Liaison Bresette. The first meeting of the water committee will be April 1st.

SPA – Both areas in the region are holding Source Protection Authority meetings this month. Both Chair Brown and Liaison Ginn meet quarterly with the SPAs. The ABSPA met earlier and the MVSPA is meeting April 2nd.

Health – The Huron Perth Agriculture and Water Festival will be held on April 8th through April 10th at the Seaforth Arena and Agriplex. This event is targeted to children in grade four to look at different activities in the region. Currently there are 600 children registered – come on out with your family! <http://hpawf.huronstewardship.on.ca/>

AGENDA ITEMS FOR NEXT MEETING

- Tier 1 Water Budget Report
- Terms of Reference Draft for publishing
- Working Group and Municipal Subcommittee Report
- WHPA and IPZ, give presentation on technical work that is going on.

ADJOURNMENT

Chair Brown declared the meeting adjourned at 2:23 p.m.

Larry Brown
Chair

Sue Brocklebank
Recording Secretary