ATTENDING

- Councillor Ian Palmeter (Chair),
- Mayor, Wendy Donovan
- Councillor Wendy Elliott
- Councillor Peter Allen, Municipality of the County of Kings,
- Meghan Swanburg (virtual)
- Howard Williams, Citizen
- Greg Cumings, Source Water Protection Planner NS
- Mike Allen, Nova Scotia Department of Environment (virtual)
- Karen Outerleys, Recording Secretary

ALSO ATTENDING

- Colin Walker, CBCL Hydrogeologist

- **ABSENT WITH REGRET**
- Alex de Sousa, Director of Engineering & Public Works
- Marcel Falkenham, Acadia University Representative

CALL TO ORDER

Chair, Councillor Ian Palmeter, called the meeting to order at 2:31 pm

- **APPROVAL OF THE AGENDA**

CARRIED

- **APPROVAL OF THE SOURCE WATER PROTECTION ADVISORY COMMITTEE MINUTES OF THE REGULAR MEETING OF OCTOBER 11, 2023.**

CARRIED

- **NEW BUSINESS:**

  CBCL Hydrogeologist Colin Walker with provide an update from the new groundwater model, including projections that include the new well #3.
  - The focus of the meeting today will be mainly the results of the work that CBCL has done on the update to the source water protection plan., to include a look at the new computer model that generates the zones.
  - Those zones really determine what you perceive about the risk to your land use, what you're going to say to landowners or how you're going to approach looking after source water within different parts of the town.
  - The reason for doing this is the guidelines, as well land uses can change in the town, water usage and technology.
  - Colin showed a slide the current best understanding of the shape of that gravel aquifer that supplies all the Town's water.

- The slide also shows the Acadia Geothermal wells, Cherry Lane well, Wickwire well and the potential site of the 3rd well.
- A groundwater flow model update, recreating groundwater flow paths so that we can trace the path that groundwater would take from the well backwards to where it originates. The new model has 6 layers compared to the 2005 molle that only has 3. Adding added more geology layers and different rock types.
- CBCL has done a field survey of the Town to see what the land uses are especially those that pose a potential risk to source water, i.e. dry cleaners, gas stations & dumps. Sites noted in the 2005 plan were revisited to see what exists there today.
- One of the big important parameters that we have to try and center in on when we're doing a groundwater model is the amount of water coming into the aquifer has a strong influence on how much water is available and where it travels and how quickly it travels. The 2005 model was based on 100 millimeters per year and based on everything that we put into the new model, we think it should probably be something more like 200 or 240.
- Committee question, what is the maximum you could pull out of this aquifer, Colin to get back to the committee. "I know that you're considering growth and adding wells, and you want to know what's the total amount that that can safely come in."
- Sea Water intrusion is on everybody's mind, from the model we feel that all of the groundwater flowing into the aquifer originates from the Wolfville Ridge and nothing outside that boundary.
- Also noted on the model are the Acadia Geothermal wells, the water that is extracted is pumped back into aquifer, no major concerns about these wells, the model is reminding us of what is happening in that area.
- When reviewing the zones you will notice that most of the water flowing to the well field comes from this five years zone, which makes the water quite young comparatively to most groundwater supplies. It means that it is a short travel time in groundwater terms, what that means is that anything that gets into the ground five years ago shows up at the well in five years, this doesn't give you a whole lot of reaction time.
- Thickness of the aquifer? If you're standing at the ground surface, it is about 150 feet down to the bedrock surface beneath, at its deepest part.
- The green dot in the model is the hypothetical place being explored for water right now for our third well. According to the *theoretical* model, it looks like the new well is mostly capturing new water, not borrowing form existing wells.
- Things learned from the new model:
  - that the Wolfville Ridge appears to be the correct boundary,
  - based on the data it looks like the aquifer deposit is longer ands more regional than we showed in the original model,
  - the recharge rate is probably higher than initially thought
  - that the 2 year and 5 years zones should be enlarged
- Groundwater travel time, the rates of recharge are good, the perfect groundwater travel time is somewhere between not to long and not really, really short. Very short travel times (six months or less) where one would worry about pathogens getting into the groundwater.

On the other side if the travel time is too long, water being taken out is not being replenished/recharged quick enough. So, the intermediate travel time the Wolfville aquifer experiences is a good thing. The water is being replenished more or less at the rate that it is being used, the other nice thing about younger water is that groundwater is less likely to be mineralized.

- If there's interest in having CBCL produce updated new indexes for the current risk tables, they could have that for the next meet. Risk Tables identify the type of contaminant that you might have to deal with, and you consider things like what, how quickly does that material move through groundwater and what zone is it in and how likely is it?
- There could be some discussion around the monitoring plan, monitoring in the context of source water protection is mostly about observation and being aware of what kinds of land uses are going on and whether or not anything is changing the monitoring that the utility does at the wellhead.
- Update the emergency response plan in terms of updates, probably this is just what you would do in terms of in the case of a spill and it's mostly about who is responsible and what is the phone tree and who will respond in an emergency.
- Finally, we there can be some discussion around the type of source water protection strategy the committee what's to adopt, currently the Town's strategy is observation and education. Unless the committee decided to do something like go for a protected water area, which is where you apply to the province to have your source water protection areas registered and then they become a piece of legislation and then you have more, more say about what happens on the land.
- Committee members have noticed drilling going on at the Elderkin property, during the drilling the idea is to find an area of the aquifer where we could get access and where we think we could get into that same 150 feet of sand and gravel. The pumping test company will be back doing a step drawdown test and so we'll see what the initial indications of yield are, and we'll get some water quality samples and in about a month we'll have the results back and we can start talking with Alex about what the next steps will be.

- **NEXT MEETING:** October 9, 2024, 2:30-4:30

- **ADJOURNMENT:** The meeting adjourned at 3:01pm.

Approved at the October 9, 2024, Source Water Protection Advisory Committee Meeting.

As recorded by Karen Outerleys, Administrative Assistance Public Works