

Meeting Notes – Parker Road Area Nanoose Water Monitoring Update

July 6, 2015

Summary of discussion question:

What does sustainable operation of the community well mean / look like to you?

- Here are the comments from meeting participants, as transcribed from stickies:

- Sustainable use would mean no change in Maelstrom Creek level when the well is operated
- Subject well must not reduce my static level more than 1.5% per year
- No long term declining trend with the target aquifer or overlying aquifers
- Keeping water quality and quantity the same
- Sustainable: to maintain the aquifer level that meets the “big picture”
- Design significant subsidies to motivate lower water use
- Sustainable operation is where aquifer static levels year over year are stable, i.e. no declining static level year over year
- Sustainability means no change in water quality parameters in monitoring wells
- “First In” principle must be observed and if well test show significant affect stop production
- All farms should have dug pits to store water for the summer
- No seawater intrusion impacts caused by pumping
- Until we can prove “surplus water” don’t run it
- Sustainable operation would mean no reduction in static level of surrounding wells
- Due to global warming / water shortage worldwide, this well should not be used in this way
- Sustainable level: when the well has no effect on neighbouring local wells
- No impact of neighbours wells – closely monitored
- Residents can enjoy their water the way they did before operation of the community well
- Keep a minimum monitoring after beginning of operation (pumping well and surrounding wells)
- Determine an approximate limit for wells with high available water column and wells with already low water column available
- RDN to help with rainwater retention
- Less localized groundwater usage ie. diverse sources – rainwater cisterns
- To still have water quality and quantity as we have had in previous years so that in the future of our aqua-farm we can increase volume
- Joint committee with area resident liaison. Deal with data collection and reporting.
- Production well should not allow for more than 40 percent aquifer depletion within 100 year using the “3 mile circle” analysis method
- 15% drawdown as guideline – e.g. if significant adverse impact at 10% then use that threshold instead

- Any decrease in neighbouring wells should close down the well

Sustainable operation of any community well is the responsibility of the water purveyor - in this case it is the RDN and we take this task seriously. While it is very important to hear the concerns and viewpoints of local residents, sustainable well operation is ultimately informed by the scientific process and good data analysis. This way we can address the underlying concerns of residents while concurrently operating the well in a manner consistent with our responsibilities as a water purveyor. The shared objective is to operate the well in way that is sustainable over the long term. The challenge is to quantify the complex concept of sustainability and what it means.

While some residents view NO IMPACT as the only sustainable option, it must be understood that every well has SOME impact on the source of water that it draws from and the others that depend on the same source. There is a way to balance our water use with the available supply to ensure that the needs of water users are all satisfactorily met while maintaining a sufficient supply into the future. This is where the data analysis and monitoring comes in to ensure this objective is being met and adapting where necessary to ensure it is achieved as time goes on.

Some key factors for sustainability:

- understanding the external impacts – i.e. climate change, precipitation, temperature, recharge
- improving the efficiency of our water use in all sectors, namely residential and agricultural in this area
- knowing that some impact is to be expected – but determining what level of impact is still sustainable over the long term, without unduly compromising current water users
- adapting management practices as the data comes in and the circumstances shift and change, while maintaining a sustainable water supply, which is the overarching goal.

The RDN is committed to operating their community wells in a manner that recognizes neighbouring well yields and quality, and the levels of adjacent creeks/streams.

Q&A

Q1: Is there such a thing as acceptable drawdown (in a neighbouring well) that would not affect that well's water supply?

The short answer is, yes. If there is a reduction in available drawdown within an adjacent well as a result of pumping in the subject well, this may be considered acceptable if it does not significantly impair the ability of the neighbouring well to provide sufficient water.

This will also depend on the characteristics of the neighbouring wells e.g. how much available drawdown is there on a daily or seasonal basis, including the cumulative effects of the subject well and other local wells pumping together.

What we discussed at the meeting is that one could propose a certain percentage reduction of available drawdown that would be a reasonable threshold (e.g. 10 to 15%?) that would still mean the well could perform sufficiently. This would be informed by the data collected and

observations in the local area and is a topic of ongoing policy development at the Provincial level.

Q2: Is the subject well pumping rate going to be operated in such a way that there is NO draw down in adjacent wells?

Not necessarily. The subject well will be operated in such a way that does not impair adjacent wells from providing sufficient water. This well's operation rule will be decided by the RDN in consultation with the hydrogeologist, based on the monitoring data analysis and based on the principle that neighbouring wells would not be impaired from providing water.

It is not entirely reasonable to have an expectation of zero drawdown, considering that based on the monitoring data to date the pumping of existing adjacent domestic and irrigation wells appear to be affecting each other in some cases (i.e. there are already interference effects noted). Basically it is understood that there is the possibility for some well interference, but monitoring and scientific analysis needs to be performed to understand what is an acceptable level of interference that does not impact adjacent wells ability to provide water.