

Water Quality Survey & Disinfection Method Update



Why did PUC change our drinking water?

- SSM's drinking water is and always has been safe to consume
- Water meets and has always met all provincial regulatory standards, except one - lead (in some homes with lead pipes)
- 2007 MOE introduced new regulations to limit lead at the kitchen tap
- PUC had to comply - had two choices:
 - add more chemicals to control lead leaching from service pipes and household plumbing
 - OR
 - use less chemicals – stop using ammonia (switch to free chlorine)
- PUC chose less chemicals

Review PUC Action Plan from May 14, 2012 report to Council

First Objective:

- To differentiate between T&O from chlorine versus T&O from disinfection by-products (such as chlorophenols)

Action #1 - Undertake Augmented Sampling Program

- PUC already sampling beyond regulatory requirements
- PUC will extend scope of sampling even further (i.e. additional parameters have been identified for ongoing sampling)
- PUC will use enhanced laboratory methods to increase detection levels 10x greater than past analysis methods
- PUC will perform augmented residential premise sampling

Review PUC Action Plan from May 14, 2012 report to Council

Second Objective:

- To enhance cleaning out of distribution pipes

Action #2 – Institute Uni-Directional Flushing

- Aging infrastructure
- Buildup of internal corrosion scales and sediment
- Requires more aggressive flushing beyond past practice
- PUC will implement Uni-Directional Flushing
- Temporary, localized discoloured water will result
- Activity necessary to improve water quality (including T&O)

Review PUC Action Plan from May 14, 2012 report to Council

Third Objective:

To get an accurate understanding of customer satisfaction

Action #3 - PUC will conduct independent, third party survey

- Must be statistically accurate and random across whole city
- Will be done fourth quarter 2012

PUC will update action plan following analysis of survey results

**All results will be published in media and PUC website and
presented at open Council Meeting**

What has the public survey found?

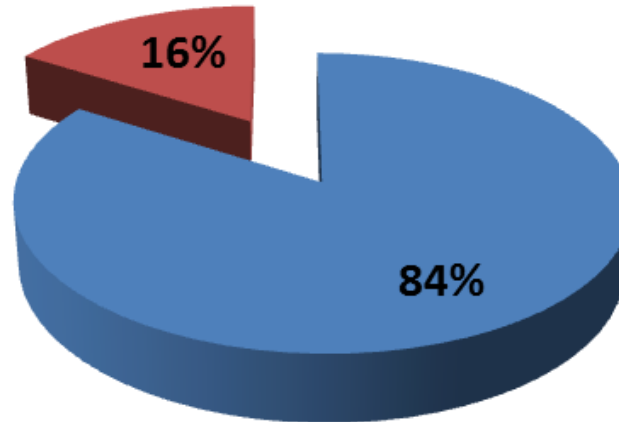
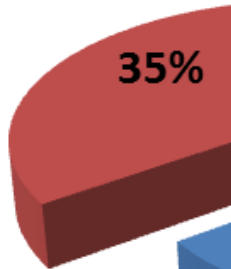
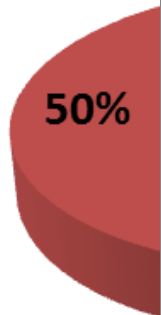
- Initial response indicated satisfaction with the quality of the current drinking water is low (only 50% are satisfied with it).
- However, once told of the reason for the change in the disinfection process, the majority (65%) of residents said the water is acceptable.
- And once told of the benefits of the new process, most (84%) of residents indicated the current quality is acceptable.
- Seven in ten residents (72%) oppose adding chemicals to the water in an attempt to improve the taste and odour knowing there is no guarantee that doing so will make the water taste and smell exactly as it did before the change.

What has the public survey found?

Initial Inquiry

Once told why change was made

Once told of the benefits



■ Acceptable
■ Not Acceptable

What has the augmented residential sampling program found?

- No health-related parameters exceeded regulatory limits
- Presence of previously undetected taste & odour compounds found (concentrations in ng/L range – i.e. parts per trillion)
 - Significant effort expended to find them
 - Not part of any regular laboratory testing & expensive analysis
 - May contribute to T&O, but not the main cause
- Variation in pH across the system observed
 - Always existed due to city being supplied by both groundwater (naturally higher pH) and Lake Superior water (naturally lower pH)
 - Thought to be a key contributor to T&O
 - Also contributes to “brown water” occurrences

What is current status of chlorine switch?

- Free chlorine impact on lead levels still to be determined
 - Corrosion testing still in progress
- From aesthetic perspective, more consumers are dissatisfied
 - More noticeable smell and taste of chlorine
 - Uni-directional flushing contributed to brown water concerns
- Large majority are satisfied when told of the benefits of free chlorine
 - Improved public communications and education required
- Observed benefits of free chlorine include:
 - System is more resistant to bacterial growth
 - Less chemicals used – eliminated ammonia & 30% less chlorine

Where do we go from here?

- Continue data collection and corrosion study (Spring 2013) to review impact of free chlorine in reducing lead leaching
- Continue augmented residential sampling

Next Steps:

- Implement public communications/information program
- Analyze all data once corrosion testing is concluded
- Identify alternatives to determine preferred option
- Develop action plan to implement preferred option
- Update Council in Fall 2013

- PUC had to make changes to satisfy provincial regulations
- Provincial regulations dictate we cannot go back to “the way it was”
- PUC is providing safe drinking water in the most cost effective manner possible
- Testing confirms ongoing regulatory compliance
- PUC recognizes there are taste and odour concerns
- PUC is committed to continuous improvement



Questions?