SOUTH WAIRARAPA DISTRICT COUNCIL

20 FEBRUARY 2019

AGENDA ITEM C3

MANGANESE PLANT MARTINBOROUGH

Purpose of Report

To request Council advance the installation of a manganese plant for the Martinborough water supply.

Recommendations

Officers recommend that the Council:

1. *Receive the Manganese Plant Martinborough Report.*
2. *Approves the advancement of the installation of a manganese plant for the Martinborough water supply from the 2021 year to the current year and 2019/20 year.*
3. *Notes the installation of a manganese plant for the Martinborough supply was consulted as part of the 2018/28 Long Term Plan.*

1. Executive Summary

Recently testing from the Martinborough water supply indicated low level positive readings for Escherichia coli (E.coli), at different location in the network.

The Martinborough water supply suffers from natural manganese suspended in the water.

The standard method for ensuring water supplies are safe is to chlorinate, on a daily basis. In this way, water supply networks have a level of chlorine residual in the system such that if bacteria enter the supply from any point they are killed by the chlorine.

However in the Martinborough case, chlorination would react with the manganese causing rust, the water would turn coffee brown.

In addition, the chlorine would kill the matter that builds up on the inside of pipework in non-chlorinated systems, causing it to break off the pipe walls and flow through the system.

We have moved into the phase of considering what actions we should or could take following the E. coli issue.

The key initiative is to get the Martinborough supply into a position where it can be chlorinated.

2. Discussion

2.1 Manganese effects

Manganese has been detected in the Martinborough water supply for many years. It was not detected when the initial bores were commissioned.

The key effect of manganese is that when the manganese comes into contact with heating elements it calcifies and possibly shortens the life of the heating elements.

A less common effect is that as manganese is a metal, manganese can build up in the bottom of the pipes, and in some circumstances can get stirred up, with the effect that the water turns blue brown.

2.2 Chlorination

Chlorination is the standard method of ensuring bacteria is killed if they end up in the water supply.

The majority of water supplies in New Zealand are chlorinated, and is strongly recommended by the Ministry of Health.

It is likely the Government will legislate mandatory chlorination mid 2019.

Some people object to chlorination, mainly due to the change in taste.

2.3 Manganese Plant

Put simply, a manganese plant removes suspended manganese from water supplies.

The key benefits of installing a manganese plant are that water supplies can be chlorinated, and hot water elements are not affected by the calcification of manganese.

Even if a manganese plant is installed, you do not have to chlorinate.

2.4 Why install a Manganese Plant

In all likelihood, the Government will legislate to make chlorination compulsory.

In the Martinborough supply case, if it was decided not to regularly chlorinate, in the circumstances we are currently experiencing, we could chlorinate for a period of time to eliminate the bacteria.

However, once the system is cleaned, chlorination should continue uninterrupted, to eliminate the build-up of matter in the inside of the pipe network.

2.5 Other Matters

Planning for, and the installation of a manganese plant will take, probably, 7 to 9 months.

During that time, we can plan to clean the pipework network in a managed way, a full flush and clean of the entire network could take some weeks, causing considerable disruption.

A planned flush could be done on a street by street, or group of streets basis, during the day, thus minimising disruption.

This time will also be used to discuss impacts of chlorination with industry bodies, and the general public.

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