

Ratana Water Supply Upgrade

Newsletter – January 2018 (Issue 6)

Background:

The major upgrade of the Ratana Water Supply system being undertaken by the Rangitikei District Council is now under way. This newsletter provides an update on progress to date and information on what works are still to be carried out and when.

In response to concerns that the water supply was not suitable for consumption the Council applied to the Ministry of Health Drinking Water Capital Assistance Programme in 2008 for funding to identify a new water source for the community. That application was successful, and in 2010 a new bore was drilled to a depth of 185m, tested and developed which included the installation of a screen.

Subsequent to that a further application was made in 2012 for new treatment and storage facilities together with other associated works. This was approved in October 2013.

Water from the new bore is generally of good quality, and is free from microbiological contaminants but requires treatment to reduce its hardness and ammonia content in line with the requirements of the Drinking Water Standards New Zealand 2008. A new water treatment facility including specialist treatment plant, process building and treated water storage reservoir is required.

Update since last newsletter:

Commissioning of plant was delayed due to a sudden drop of pressure while running the plant. This was traced back to the presence of sand in the bore water. An investigation was conducted and it was determined that the recent systemic activity had caused a layer of fine sand to collapse around the bore screen. The sand was too fine for the bore screen to separate the sand from the water. As a result the sand laden water was pumped into the plant which caused fouling of the treatment equipment reducing the flow capacity and in turn the pressure.

Redevelopment of the bore was required to remove the sand. Redevelopment involves blasting the screen with a high pressure jet of water while pumping the bore out at maximum capacity. While it did clear the sand, it is not a permanent fix. The possibility still remains that future seismic activity could cause additional layers of sand to collapse.

To mitigate the possibility of this recurring a secondary filtration process would need to be installed, of which, several options are available to choose from. Council have been investigating the available options and their viability and affordability of each option.

Scheme Progress:

Works completed to date:

- Redevelopment of the bore.
- Site works completed.
- Extensive earthworks involving the excavation of 2,000m³ to create the site for the storage reservoir and treatment facility.
- Installation of a 200 mm bore to a depth of 185 m to provide a flow of 5 l/s and up to 14 l/s during peak times.

- 766m³ reservoir to provide 24 hours storage of treated water storage.
- Over 2000 m of PVC and PE pipe to transport water from the bore to the plant and into the township of Ratana.
- 135 m² Treatment Building Constructed
- Ion Exchange and chlorine dosing system equipment assembled and installed.

Upcoming Work

- Construction of the vehicle crossing and security fence.
- Treatment plant recommissioning.
- Bring new water treatment plant online.

Ratana Water Supply Upgrade – Key Facts

Project cost (total)	\$1.672 million
Government contribution	\$1.034 million
Water source	200 mm bore at a depth of 185m
New treatment plant capacity	350m ³ /day, Increasing to 500m ³ /day during major events.
New reservoir capacity	766m ³
Total length of new pipelines	2,200 metres
Commissioning Date	February 2018
Completion Date	March 2018

Rangitikei District Council Contact

For further information contact Rob Smith, Project Engineer on 06 323 0000.