

Test report of NMR Pipetector installation Maintaining the level of chlorine concentration in drinking water

1. Background

Miyajima district's water main, owned by Hatsukaichi-shi waterworks, supplies water to buildings throughout the local community. The pipe network is made of ductile iron and is 11.8 inches in diameter. The water comes from a water tank located at the hill summit. Its overall length reaches approximately 1.2 miles.

The waterworks was dosing 0.4 mg/L of chlorine to the water in terms of water disinfection. However, the level dropped to 0.1 mg/L as the water went closer to the anchorage, the terminal of the piping. The decrease was due to internal corrosion. The waterwork considered a pipework replacement initially but soon realized it was unfeasible because it could cost them approx. ¥3 billion. Pipe replacement could also ruin the district's scenery, designated as a national park, thus seriously damaging the tourism industry. So, the waterworks decided to purchase one NMR Pipetector at ¥16 million and tested the device's effectiveness in preventing corrosion and maintaining chlorine concentration inside water tubes.

NMR Pipetector is designed to eliminate all internal corrosion in water lines. The NMR technology will also reduce the existing red rust into magnetite, keeping the chlorine concentration level. There will be no disruption to ongoing water services or any works that could ruin the beautiful sights during installation works. NMR Pipetector will also extend the life span of water pipes for a period above 40 years.

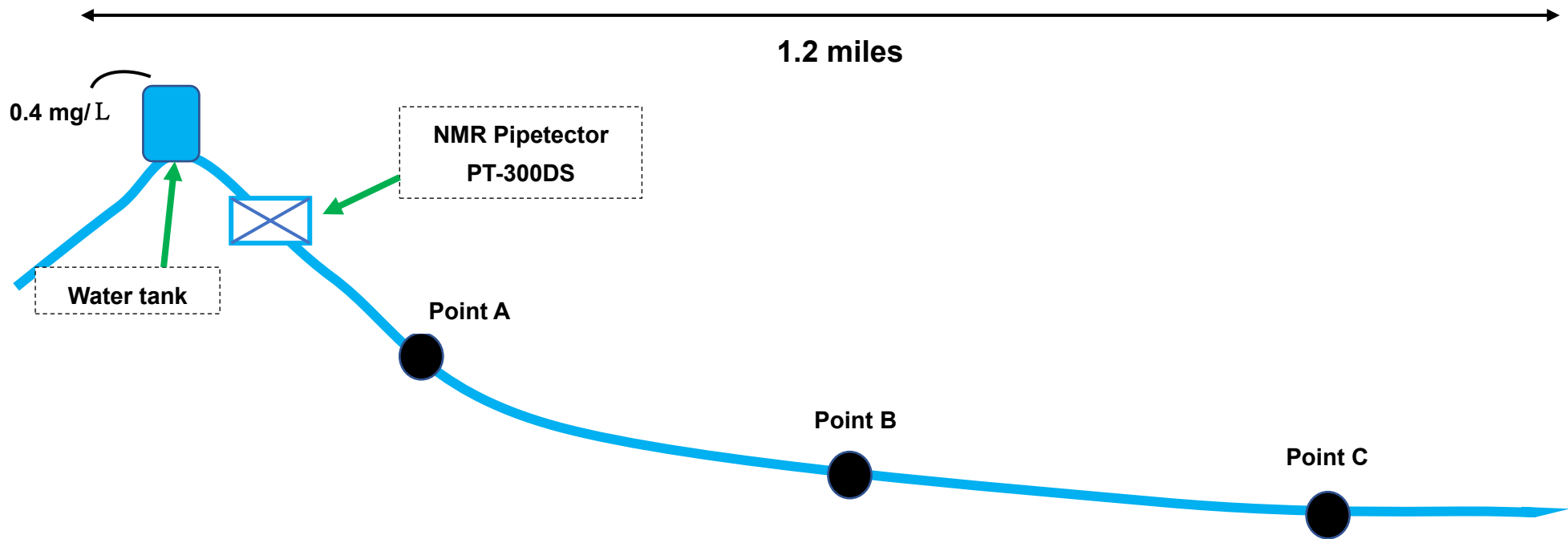
2. Test result

NMR Pipetector successfully maintained the chlorine concentration level by reducing the existing corrosion into magnetite. We confirmed the same outcome at all 3 points where we sampled water. At a sprinkler head next to Yamadaya of Arinoura, the average chlorine concentration level tripled from 0.11 mg/L to 0.3 mg/L after installation even though it was near the terminal point. The result proved that NMR Pipetector entirely kept the chlorine concentration by reducing corrosion into magnetite and preventing new corrosion inside water pipes.

NMR Pipetector made replacement works unnecessary for the waterworks: it got out of the expense of ¥3 billion by purchasing ¥16 million NMR Pipetector. The waterworks saved more than ¥2.9 billion as a result.

Any water pipes that have a small water flow will not be protected with NMR Pipetector.

A water tap in a park had almost no water consumption, thus unable to address corrosion inside the water pipes. The 20-mm water pipe located beneath the park requires a 20-30-meter replacement, whose cost is assumed less than a million.



<Level of chlorine concentration>

	Point A	Point B	Point C
Before	0.26 mg/L	0.24 mg/L	0.11 mg/L
After	0.3 mg/L	0.3 mg/L	0.3 mg/L