

NANO BUBBLE TECHNOLOGIES

BLACKTOWN INTERNATIONAL SPORTS PARK

FIELD EVALUATION OF INFILTRATION RATES AT BLACKTOWN INTERNATIONAL SPORTS PARK (BISP)

TRIAL DETAILS

Surfaces: Cricket Wicket, Baseball Infield, USGA Fields, Loamy Soil Field

Trial Date: December 2024



BENEFITS

- Improved water infiltration & distribution
- Enhanced root development & turf resilience
- Increased efficiency of irrigation and chemical application

RESULTS

33% increase in infiltration rates across all tested playing surfaces. ✓

BLACKTOWN INTERNATIONAL SPORTS PARK

To investigate the real-world effect of nanobubble-treated water on infiltration rates, a field study was conducted in December 2024 at Blacktown International Sports Park (BISP). This internationally accredited sporting complex, managed by Blacktown City Council, provides an ideal environment for multi-surface testing, offering a wide variety of elite-level playing fields.

The purpose of this study was to validate anecdotal reports from existing users of Nanobubble Technology (NBT), who had observed noticeably faster water infiltration at their facilities. These user observations are further supported by existing laboratory-based scientific literature. The goal of the study was to quantify the infiltration rate improvements in a controlled field setting.



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BLACKTOWN INTERNATIONAL SPORTS PARK

FACILITY DESCRIPTION

BISP is one of Australia's most versatile high-performance venues. It includes:

- Two first-class cricket grounds
- Multiple football & rugby fields (including training centre for the Western Sydney Wanderers & NRL teams)
- Three international-standard baseball diamonds (home of the Sydney Blue Sox)
- Four international-standard softball fields
- An international-standard athletics track and infield
- A state-of-the-art high-performance training centre

This diversity of turf and soil profiles made BISP an optimal site for testing.

METHODOLOGY

At the time of testing, BISP was irrigating its fields with potable water, although its primary source is typically stormwater harvesting. For the purposes of this study, infiltration rate comparisons were made between a) untreated potable water & potable water treated with nanobubbles (500L treated for 10 min using the NBT system).

TESTING LOCATIONS

Infiltration rate assessments were performed across five representative playing surfaces:

- Athletics track infield turf
- Baseball diamond infield dirt
- BEST Rugby/Football field
- Cricket field #2 wicket square
- Football matchday field #5

KEY FINDINGS

- Nanobubble-treated water consistently demonstrated **faster infiltration rates** across all surface types tested.
- The average improvement in infiltration rate was **33%** when compared to non-treated water.
- The **improved performance** is attributed to the **reduced surface tension** of the nanobubble-treated water, which allows for more efficient percolation into the soil profile.

CONCLUSION

The study confirmed that nanobubble technology significantly enhances water infiltration on a variety of high-performance playing surfaces. This improved infiltration leads to more effective and efficient irrigation practices, potentially reducing water usage, runoff, and operational costs. BISP's diverse infrastructure served as an ideal testing ground, providing strong field-based validation of NBT's performance across different soil and turf systems.



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