

Revival of Bir Pind Village Pond with Nanobubble Technology

Bir Pind Village, Community Pond, Punjab

Location

Bir Pind, Punjab

Lake Size

1 Acre

Unit Type

NanoCloud N-50 (Air-based Nanobubble Generator)

Project Objective

The objective was to improve the pond's water quality by increasing dissolved oxygen and reducing organic and bacterial contamination. At the same time, the aim was to eliminate foul odor and restore a healthier, more balanced ecosystem.

In Bir Pind, a small village in Punjab, the community pond was once an essential part of everyday life. Like many rural water bodies, it supported sanitation, local ecology, and the overall balance of the village environment. Over time, however, it gradually turned into a sewage collection point. The water became dark and stagnant, foul odors spread across nearby areas, and the pond started posing more of a problem than a benefit to the community.

What We Did

In June 2024, Nanokriti deployed its NanoCloud N-50, an air-based nanobubble generator, in the Bir Pind pond. The system works by releasing trillions of ultra-fine nanobubbles into the water. Unlike regular aeration, these bubbles stay suspended for long periods, continuously releasing oxygen and interacting with pollutants at a much deeper level. As the system ran, oxygen levels in the pond gradually began to rise. At the same time, the nanobubbles helped oxidize harmful gases like hydrogen sulfide and ammonia, which were responsible for the strong foul smell. Without adding any chemicals or disrupting the pond physically, the treatment worked quietly in the background, improving the water day by day.

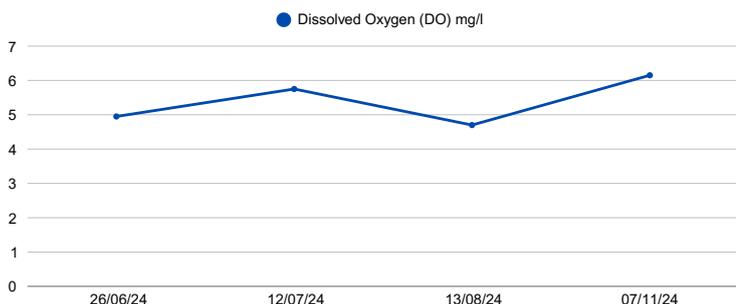


Results & Impact (June – November 2024)

Over a period of a few months, the pond showed significant improvement. Dissolved oxygen levels increased from around 4.6 mg/L to 6.2 mg/L and remained stable, creating conditions suitable for aquatic life. BOD and COD levels dropped, indicating a clear reduction in organic pollution. Faecal coliform levels reduced by around 40%, improving sanitation and safety for the surrounding community.

The foul odor that once defined the pond was almost eliminated. Algal growth was controlled, mosquito activity reduced, and the water became visibly clearer. More importantly, the overall environment around the pond became more livable.

As oxygen levels increased, the pond's condition began to shift. Aerobic bacteria became more active, breaking down organic waste and reducing BOD and COD. At the same time, foul odors faded as harmful gases were oxidized.



Algal growth reduced, suspended particles settled, and the water gradually became clearer. With improving conditions, faecal coliform levels dropped, and mosquito breeding declined, indicating a steady return towards a healthier ecosystem.

Conclusion

The Bir Pind pond restoration shows how nanobubble technology can revive heavily polluted water bodies without chemicals or complex infrastructure. In just a few months, the pond transformed into a cleaner, healthier ecosystem, improving both environmental conditions and community well-being, and setting a strong example for scalable pond restoration across Punjab.



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