

# Urban Pond Restoration & Integrated Lake Management

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## Company Profile- Pond Management Division (2026)

*Service-based cleaning, remediation & long-term maintenance of urban water bodies*

✓ IIT Patna Backed

✓ NIT Surat Vetted

✓ Indo-Global Partnership

✓ UN SDG Aligned

## URBAN PONDS IN CRISIS



*The silent collapse of India's urban water bodies*

# The Problem We Solve

Eutrophication, encroachment, sewage ingress and invasive species have pushed urban ponds across India to the brink. The consequences are public-health, ecological, and economic — all at once.



**70%+**

of India's urban water bodies lost since 1970



**<2 ppm**

typical Dissolved Oxygen in polluted urban ponds



**1000+**

invasive weed species commonly infest urban ponds in India



**Vector**

borne diseases & GHG emissions from stagnant water



नगर निगम  
वाराणसी



VALIANT AND OUR CLIENTS

# Engineering the revival of India's urban water bodies

**Founded in 2023** in Surat, Gujarat, Valiant Entech is backed by a core team with 25+ years of experience in water treatment technologies. Our pedigree includes founding **Asia's largest Common Effluent Treatment Plant (CETP)** and leading India's participation in the **Indo-German Water Partnership & GIZ programmes**.

*We deploy a technology basket — not a single product — so each water body gets the right remedy. Our engagement model is service-based: Valiant owns the CAPEX and OPEX, the Municipal Corporation pays only for outcomes.*

IIT Patna Backed

NIT Surat Vetted

UN SDG Compliant

## OUR FOOTPRINT TODAY

15

water bodies

actively managed

42,000

sq.m.

under management in Uttar Pradesh

2,50,000

sq.m.

in contracted pipeline

4

MCs

Varanasi, Gorakhpur, Mira Bhayandar and Ahmedabad

# The minds behind Valiant Entech

*A multi-generational team blending 25+ years of Indian water-treatment legacy with international engineering credentials.*



**Vipul Desai**

*Managing Director*

- Founder, P.E.P.L.
- Green Ambassador, Govt. of Gujarat
- 25+ yrs water innovations



**Aditya Desai**

*Chief Technology Officer*

- Chemical Engineer, Univ. of Leeds, UK
- 5+ yrs water & textile processing
- Intl. tech adaptation



**Param Desai**

*Chief Executive Officer*

- Sustainable Dev., Univ. of Manchester
- CFA world-level rank holder
- Water, AgriTech, Equity



**Simone Galluzzi**

*Senior Associate, Europe*

- 30 yrs ESG-friendly industrial apps
- Tech assessment & sourcing
- European market bridge

# Our Technology Arsenal

*No single technology works for every pond. We deploy the right combination from a six-pillar toolkit — diagnosed per water body.*

1



## R.E.G.A.L. Technology

Our flagship: Nanobubbles + Ultrasound + Free Radicals.  
Retrofit-friendly, low-capex, UN SDG aligned.

2



## Lake Diffused Aeration

Oxygenates the cold bottom layer of stratified ponds  
without disturbing natural thermal structure.

3



## Dissolved Air Flotation

Removes suspended solids, algae and oils using fine  
micro-bubble flotation at high throughput.

4



## Advanced Glass Filtration

Activated glass media replaces sand — finer filtration,  
longer life, lower backwash demand.

5



## Diatom Bioremediation

Beneficial microbes + diatoms outcompete algae, break  
down organic load and restore ecology.

6



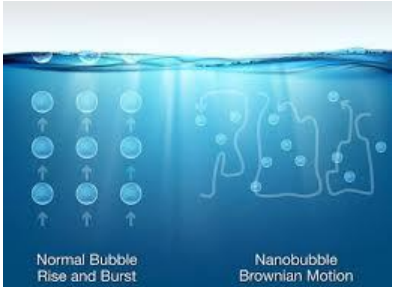



## Surface Aeration & Aspirators

Mechanical O<sub>2</sub> transfer and mixing for top-layer  
circulation, odour control and DO boost.

# R.E.G.A.L. — a 3C process engineered for water

*Radical Enhancement using Gas Assisted Liquid Dispersion — combining three complementary physical and biological mechanisms.*

<p>CARRIER</p> <h2>Nanobubbles</h2> 	<p>CATALYST</p> <h2>Ultrasound</h2> 	<p>CHEMISTRY</p> <h2>Free Radicals</h2>
<ul style="list-style-type: none"><li>▶ &lt;200 nm gas bubbles</li><li>▶ Negative zeta potential → months of stability</li><li>▶ 85%+ Standard Oxygen Transfer Efficiency</li></ul>  <p>Normal Bubble Rise and Burst</p> <p>Nanobubble Brownian Motion</p>	<ul style="list-style-type: none"><li>▶ 24–31 kHz operating frequency</li><li>▶ Drives nanobubble implosion → DO spikes</li><li>▶ Removes pathogens &amp; invasive species</li></ul> 	<ul style="list-style-type: none"><li>▶ Oxidises organic pollutants</li><li>▶ Breaks down sludge &amp; nutrients</li><li>▶ Removes colour, odour &amp; methane</li></ul>

DO ↑      BOD/COD ↓      Algae ↓      Pathogens ↓      Odour ↓      Biodiversity ↑

DEPLOYED ON GROUND

# Salient features of technologies we deploy



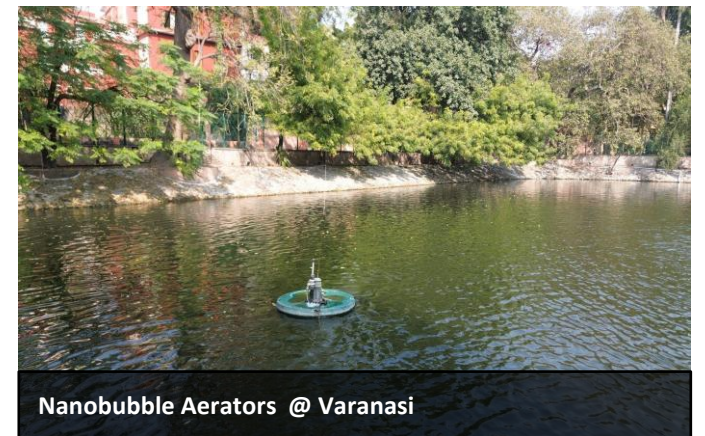
Glass Filtration Units



Aspirator units deployed @ Varanasi



Surface aerator in action @ Varanasi



Nanobubble Aerators @ Varanasi



Micro Nanobubble Generators @ Varanasi

- 1 Micro-Nanobubble & Nanobubble Technology
- 2 Ultrasound Technology
- 3 Bioremediation (Beneficial Microbial Cultures + Diatoms)
- 4 Surface & Sub-surface Aeration and Mixing
- 5 Dredging & Sediment Management
- 6 Dissolved Air Flotation
- 7 Physico-chemical Treatment Trains

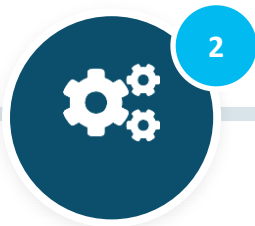
# Our 5-step approach to every water body

*A rigorous, science-backed protocol that turns a polluted pond into a living ecosystem — and keeps it that way.*



## Baseline Assessment

Water quality, aquatic flora/fauna survey, rapid impact assessment, limnological profile



## Technical Design

Optimal solution combining best-available technologies from our six-pillar toolkit



## Integrated Plan

Formulation of an integrated lake management plan with timelines and KPIs



## Execution & Monitoring

On-site installation, commissioning, daily operations and real-time monitoring



## Restoration & O&M

Remediation of water quality, restoration of native flora/fauna, long-term maintenance

*Backed by IIT Patna technology validation • Vetted by NIT Surat • Certified labs + UPPCB-approved parameters*

# Execution underway in Ahmedabad

Letter of Intent received. Works ongoing across five Ahmedabad lakes with AMC.



LOI RECEIVED

**Ahmedabad  
Municipal Corporation**

**5**

**Active**

urban lakes  
under scope

works ongoing  
as of 2026

AMC represents our first major Gujarat deployment —  
scaling our proven UP model to western India.

## LAKES UNDER EXECUTION

1	<b>Makarba Lake</b> <i>Makarba</i>	IN EXECUTION
2	<b>Chandkheda Lake</b> <i>Chandkheda</i>	IN EXECUTION
3	<b>Bedar Lake</b> <i>Makarba</i>	IN EXECUTION
4	<b>Chenpur Lake</b> <i>Ranip</i>	IN EXECUTION
5	<b>Surbhi Lake</b> <i>Nikol</i>	IN EXECUTION

## WHAT WE DELIVER

# Measurable impact & outcomes

The results we commit to — verified by UPPCB-grade measurements across every project we've delivered.

# 75%+

reduction in BOD

Biochemical Oxygen Demand

# 75%+

reduction in COD

Chemical Oxygen Demand

# 75%+

reduction in TSS

Total Suspended Solids

# >5 ppm

Dissolved Oxygen

sustained post-remediation

## BEYOND THE NUMBERS



**Eradication of HABs**

Harmful Algal Blooms eliminated and eutrophication reversed



**Public Health Uplift**

Odour, vector-borne disease risk and GHG emissions reduced



**Biodiversity Restoration**

Native flora/fauna return as DO and water clarity recover



**Urban Aesthetic & Eco-Tourism**

Revived water bodies become civic assets and tourism anchors

# Bakariyakund

Varanasi, UP



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01

CASE

**BEFORE**

July 2025



**AFTER**

Sept 2025

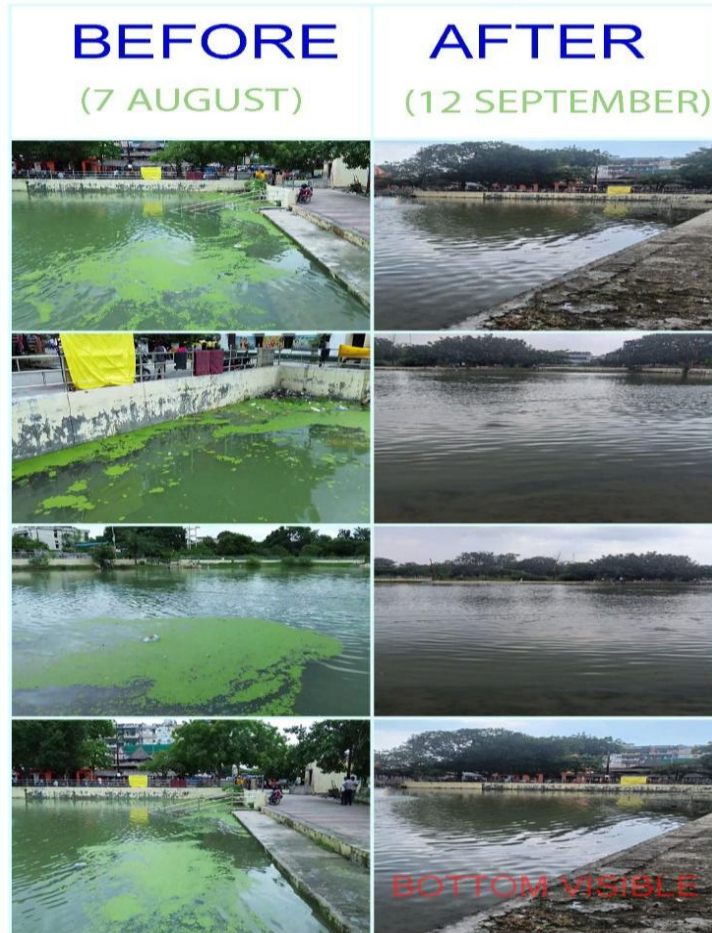


*Overgrown and abandoned — a 'lost' heritage kund reclaimed from choking weeds and algae.*

Parameter	Before	After	Change
COD (mg/l)	264	62	-77%
BOD (mg/l)	62	15	-76%
TSS (mg/l)	186	36	-81%
Dissolved O <sub>2</sub> (ppm)	0.1	6.8	+68x

# Bhikharipur Pond

Varanasi, Uttar Pradesh • Varanasi Nagar Nigam



## Algae-choked to bottom-visible — in 5 weeks

A culturally significant pond covered in eutrophic green scum was restored to a clear, stable state — visible to the bottom — within a single monsoon-to-autumn cycle. Surface aeration + nanobubble oxygenation + targeted bioremediation worked in concert.

Parameter	Before (11 Aug)	After (19 Sep)	Change
COD (mg/l)	286	42	-85%
BOD (mg/l)	74	14	-81%
TSS (mg/l)	126	32	-75%
Dissolved O <sub>2</sub> (ppm)	2.3	6.8	+3x



Bottom of pond visible post-remediation • Parameters further improved after completion

# Sankuldhara

Varanasi, UP

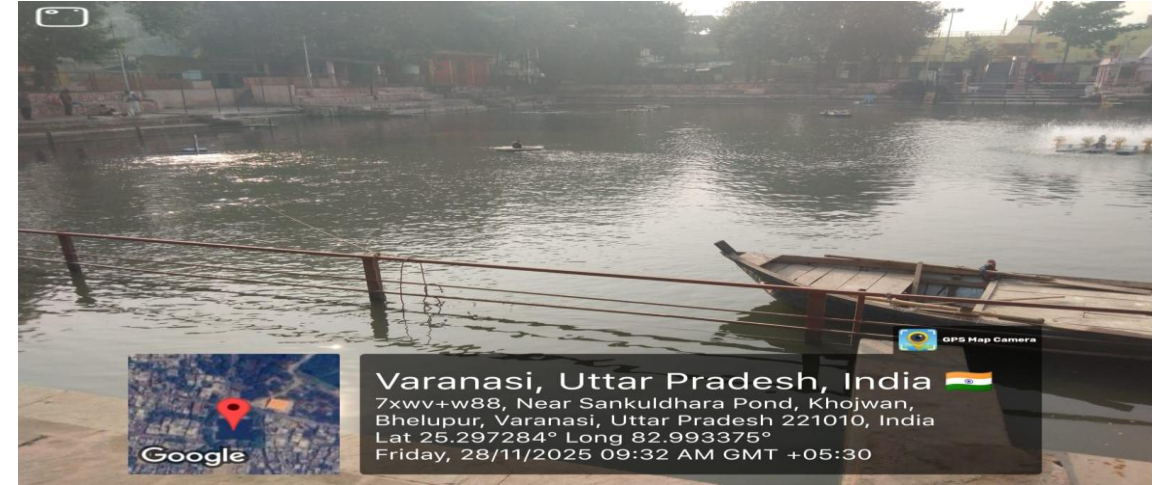


**03**  
CASE

**BEFORE** April 2025



**AFTER** Nov 2025



*Solid green algal bloom coating the entire water surface — restored to clear water with aquatic recreation returning.*

Parameter	Before	After	Change
COD (mg/l)	313	41	-87%
BOD (mg/l)	82.5	13	-84%
TSS (mg/l)	76	33	-57%
Dissolved O <sub>2</sub> (ppm)	1.8	6.7	+3.7x

# Pitrakunda

Varanasi, UP • UPPCB-certified



**BEFORE** July 2025



**AFTER** Oct 2025



Mass fish mortality and floating garbage reversed — UPPCB-certified parameters restored to ecological thresholds.

Parameter	Before	After	Change
COD (mg/l)	288	49	-83%
BOD (mg/l)	46	11.2	-76%
TSS (mg/l)	138	28	-80%
Dissolved O <sub>2</sub> (ppm)	0.4	6.8	+17x

## GLOBAL ALIGNMENT

# Aligned with UN SDGs & India's Smart City Mission

*Every project we deliver directly advances six UN Sustainable Development Goals and supports India's urban sustainability agenda.*



## ALIGNED WITH INDIA'S URBAN AGENDA

**Amrut 2.0 • Smart Cities Mission • Namami Gange • 15th Finance Commission • AMRUT Water-Body Rejuvenation**

*Projects fundable via CSR, 15th Finance Commission grants, and Smart City SPV allocations — zero upfront capex for the Municipal Corporation.*

# Let's restore Ahmedabad's urban water bodies together.



## Proven on the ground

8 water bodies restored across 2 Municipal Corporations, with UPPCB-certified 75%+ reductions in BOD/COD/TSS.



## Zero upfront risk

Service-based model — Valiant brings CAPEX + OPEX. MC pays per sq.m. per month. Outcomes-based contract.



## Not a single product

Six-pillar technology toolkit, diagnosed per water body — not a one-size-fits-all vendor sell.

**Ready to begin? Let's walk Ahmedabad's lakes together.**

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**Schedule a site visit →**