ARBOR BOREHOLES
YOUR TRUST, OUR COMMITMENT

Sustainable Borehole Solutions Step by Step Guide

We area specialist borehole drilling and water-supply company focused on delivering reliable, long-term groundwater solutions across South Africa. With decades of combined field experience, our mission is to provide safe, cost-effective, and environmentally responsible boreholes for municipalities, mines, farms, and private estates.

Our Expertise

Precision drilling, hydrogeological assessments, and integrated pump & storage systems designed for local geology and operational needs.

Accreditations

Certified by relevant South African industry bodies including Borehole Water Association (BWA) and trained in local compliance, environmental best practices, and occupational safety.

We combine modern drilling tech with local hydrogeological expertise to reduce risk, shorten project timelines, and maximize long-term yield and water quality.

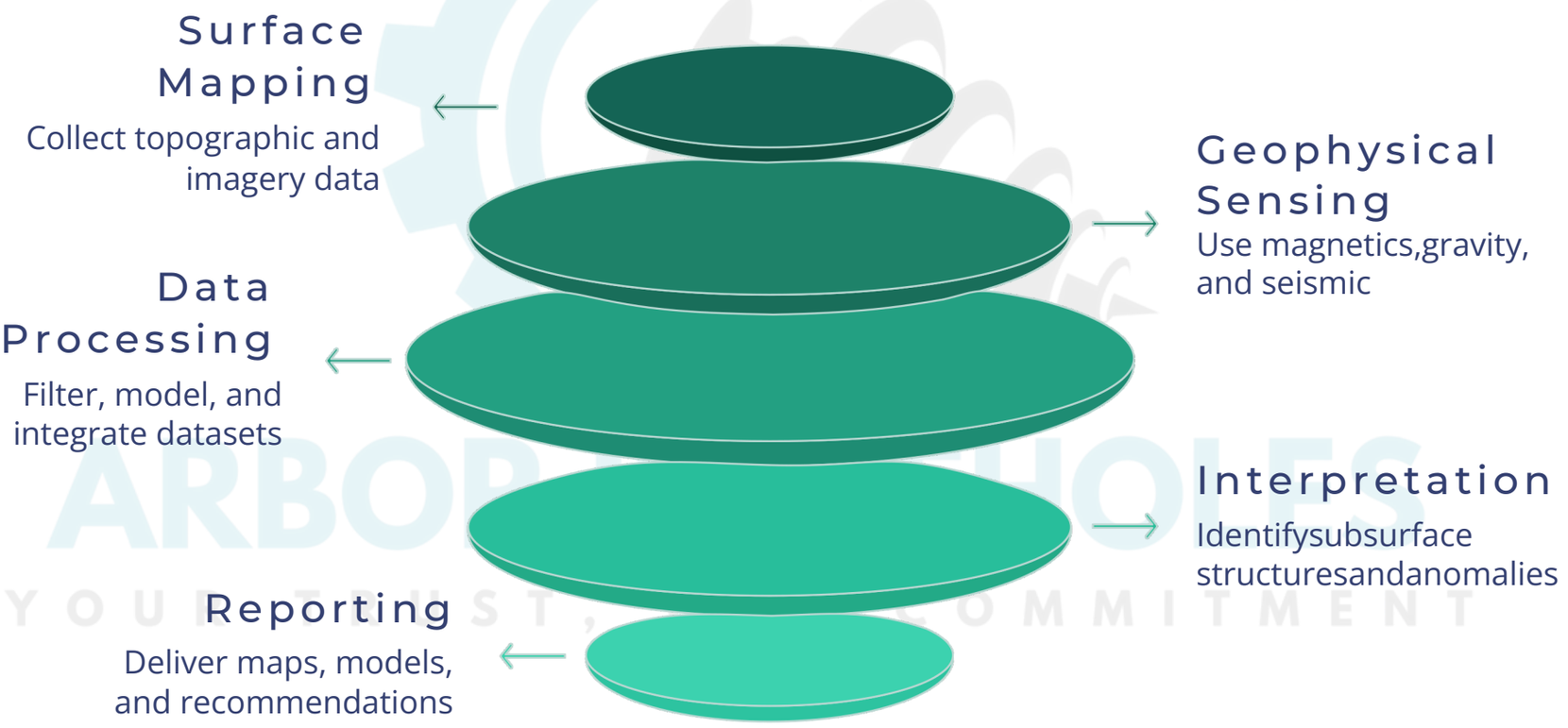
STEP 1: INSPECTION & SURVEY – SCIENCE-LED SITE SELECTION

Locating a productive, safe borehole begins with a methodical site survey. We apply geophysical techniques—resistivity, VES, and targeted mapping—to identify likely aquifer zones and fracture orientations beneath the surface.

Geophysical Survey Non-invasive resistivity and ground-penetrating methods to reduce dry holes and pinpoint highest-yield targets.

Site Assessment Access routes, power availability, rig placement, and ground stability evaluated to inform logistics and equipment choice.

Risk Mitigation Assess proximity to septic systems, foundations, and contamination sources; recommend set back distances and protective measures.



Our surveys produce clear site recommendations and a risk register that align with municipal planning considerations and environmental regulations.

STEP 2: THE DRILLING PROCESS – DTH (DOWN-THE-HOLE) METHOD

The DTH method is our standard for hard rock environments common in many South African districts. A pneumatically driven hammer mounted directly above the bit provides rapid, vertical penetration while maintaining borehole straightness and core integrity.

Precision Technology

DTH ensures controlled advance through competent rock, reducing deviation and minimizing reaming requirements.

Efficiency

High-pressure air hammers accelerate penetration rates, lowering drill days and on-site labour costs.

Operational Control

Real-time cuttings analysis and penetration-rate logging inform immediate decisions and final bore placement.

STEP 3: STEEL CASING & STRUCTURAL INTEGRITY

Upper borehole stabilization is achieved with heavy-duty steel casing. The casing protects the bore against collapse through overburden and weathered zones while providing a barrier to surface contaminants.

Stabilization

Steel casing supports weak strata and prevents bore deformation during drilling and development phases.

Contamination Barrier

Seals out surface runoff, effluent, and near-surface pollutants—critical for potable supply protection.

Longevity

Robust materials and correct annular grouting extend functional life and reduce maintenance frequency.

We specify casing grade, diameter, and depth to match geotechnical conditions and regulatory requirements, and we perform pressure testing where needed.

STEP 4; WATER FLUSH & DEVELOPMENT – OPENING THE AQUIFER

Borehole development is the controlled removal of drilling fluids, fines, and rock chips to establish open pathways between fractures and the bore column. This process improves yield, stabilises sand content, and revealsthepracticalsustaineddischarge.

Initial Flushing

High-velocity air lifting and swabbing remove coarse debris and loosen fines from fractures.

Hydraulic Development

Pumping atvariable rates toscour fines,monitor turbidity, and condition the aquifer for pumping tests.

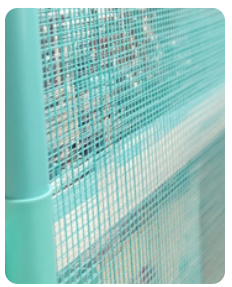
Yield Verification

Measure blow and sustained yields (L/hr), observe drawdown, and determine specific capacity for pump sizing.

We provide a full development log documenting turbidity reduction, stabilised head, and recommended stabilization pumping duration based on observed results.

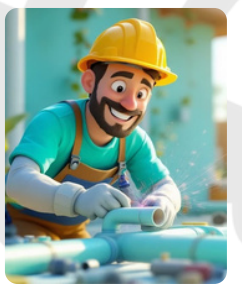
STEP 5: PVC CASING & SCREEN INSTALLATION – CORROSION-FREE LINING

For the production zone we install Class-rated PVC casing and slotted screens designed to resist corrosion, prevent particulate ingress, and ensurepotablewater integrity for decades with minimal maintenance.



Screen Design

Slotsizeandscreen length are engineered to site-specific grain size distributions and drawdown characteristics to minimise sand production.



Material Selection

Highgrade PVC offerschemicalstability and avoids metal corrosion concerns—key for potable and agricultural water systems.

Sealing procedures and centralisers are applied to maintain annular integrity and to optimise screen orientation within the aquifer zone.

STEP 6: SUBMERSIBLE PUMP INSTALLATION – RIGHT-SIZED, RELIABLE DELIVERY

Pump selection and installation are driven by the tested yield, required delivery head, storage configuration, and duty cycle. We favour stainless steel, energy-efficient submersible pumps with proven components for rural and industrial applications.

Sizing & Selection

Hydraulic curves matched to specific capacity and static water level ensure efficient, long life operation.

Protection Features

Dry-run protection, overload protection, and surge arrestors lengthen equipment life and protect electrical systems.

Power Options

We support mains, hybrid solar-electric, or generator configurations to counterload-shedding and remote power constraints.

Installation includes secure cable sealing, flow testing at multiple duty points, and commissioning documentation for operation and maintenance.

STEP 7: WATER STORAGE & TANK SETUP – BUFFERING SUPPLY

Storage integrates the borehole into a resilient water system. Properly sized tanks and quality fittings provide buffer capacity for peak demand, emergency supply during outages, and stable pressure when paired with booster systems.

Tank Foundation

Concrete plinths or engineered stands ensure stable, level support and reduce contamination risk from ground splash and animals.

Pressure Management

Booster pumps and pressure vessels maintain consistent household or irrigation pressure.

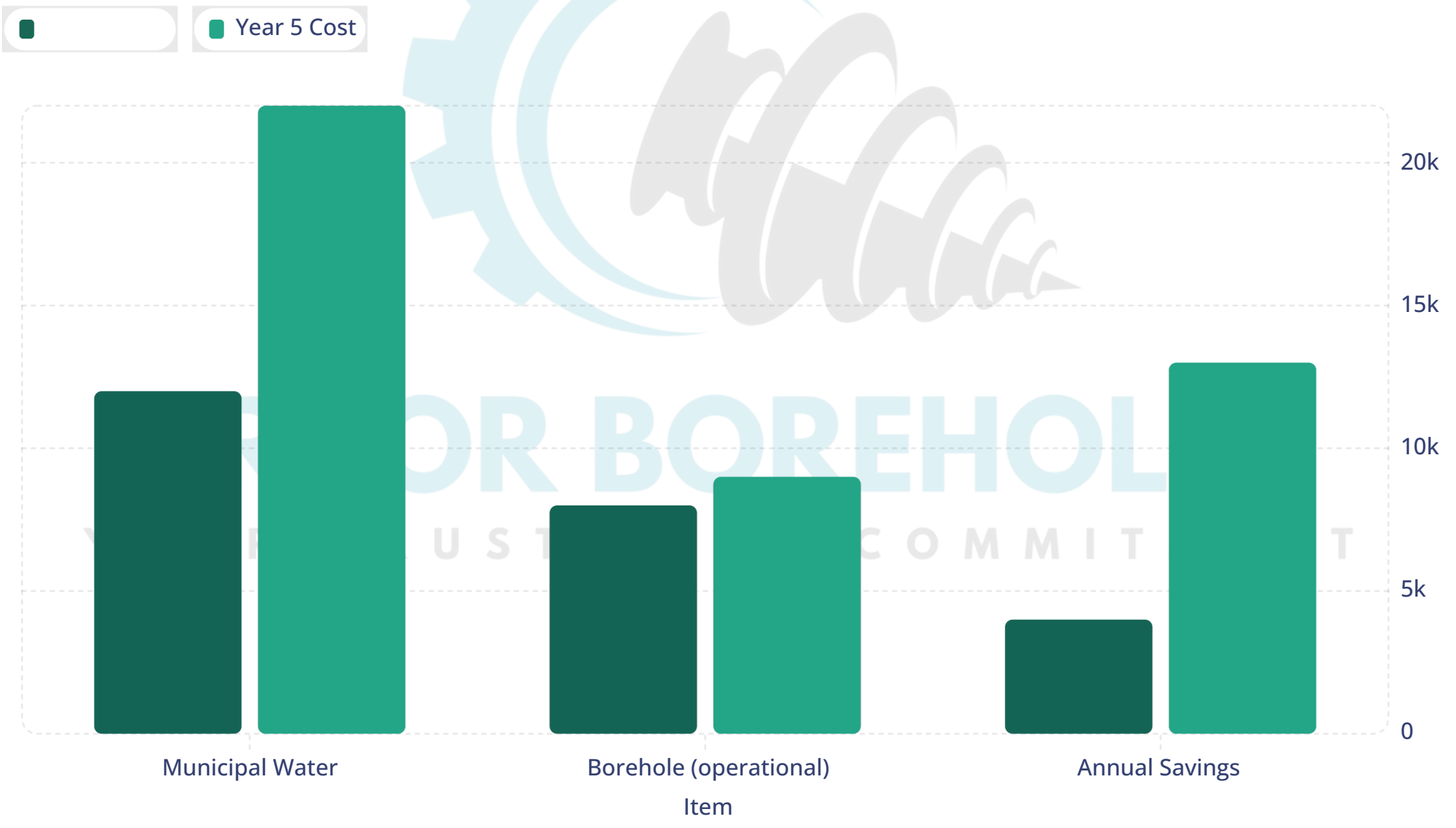
Connections & Valves

Non-return valves, filtration, and overflow piping protect the system and conserve water.

We deliver turnkey tank installation, piping integration, and commissioning protocols that comply with local health and municipal plumbing codes.

ECONOMIC BENEFITS – ROI & MUNICIPAL INDEPENDENCE

Boreholes reduce dependence on municipal supply,offering protection against rising tariffs and scheduled restrictions. For municipalities and large users, localized groundwater supply can significantly lower operating costs and improve service resilience.



Beyond operating savings, boreholes typically increase property value and marketability. When financed and installed correctly, payback periods can be short—especially for high-use sites like farms, mines, and multi-household estates.

COMPLETION, COMPLIANCE & MAINTENANCE — HANDING OVER A RELIABLE SYSTEM

Project close-out includes hydrogeological reports, as-drilled logs, pump curves, warranty documentation, and a maintenance schedule. We do ensure installations meet potable water and environmental standards.

Maintenance Plan

Scheduled inspections, pump servicing, and water quality testing to sustain performance and compliance.

Aftercare & Support

Responsive service contracts, emergency response, and training for on-site operators or caretakers.

We conclude with a formal handover and a review meeting to verify system performance and ensure stakeholders are confident in operation, safety, and long-term management.