



Accredited Africa Training Institute for Capacity Development

Unit FO409, Hatfield Plaza · 1122 Burnett St, Hatfield 0028 · Pretoria, Gauteng · South Africa

Tel: +27 12 004 8389 · Mobile: +27 65 077 6310

Email: apply@aaticd.co.za · Website: www.aaticd.co.za

COURSE BROCHURE

Wastewater Reticulation System Problem Investigation Training

Physical Planning and Construction / Civil Engineering Construction

Unit Standard 115897 · NQF Level 3 · 10 Credits · 7 Days

COURSE OVERVIEW

This training equips learners with the skills to systematically investigate problems in wastewater reticulation systems, including identification of faults, root cause analysis, and implementation of corrective actions. The course emphasizes compliance with South African water quality standards and safety protocols, enabling learners to minimize system downtime and environmental impact.

Category	Physical Planning and Construction
Subfield	Civil Engineering Construction
Unit Standard	115897
Accreditation	SAQA Accredited · NQF Level 3 · 10 Credits
Duration	7 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply systematic problem-solving methods to identify and diagnose faults in wastewater reticulation systems.
- Analyze system data and performance indicators to determine root causes of reticulation problems.
- Evaluate corrective actions and select appropriate solutions based on technical and regulatory requirements.
- Implement corrective measures to restore system functionality and prevent recurrence of issues.
- Document investigation findings and report recommendations in compliance with organisational and legal standards.
- Demonstrate adherence to health, safety, and environmental procedures during problem investigation activities.

WHO SHOULD ATTEND

- This course is designed for wastewater treatment plant operators, maintenance technicians, and municipal infrastructure supervisors responsible for the operation, maintenance, and troubleshooting of wastewater reticulation systems.

COURSE OUTLINE

Day 1: Introduction to Wastewater Reticulation Systems and Problem Investigation

- Overview of wastewater reticulation systems: pipes, manholes, pumps, and valves.
- Types of wastewater: domestic, industrial, and stormwater.
- Common system problems: blockages, leaks, odours, and structural failures.
- Introduction to problem investigation: systematic approach.
- Relevant legislation and standards (SANS, SAQA).
- Health and safety considerations: confined spaces, hazardous substances.
- Roles and responsibilities of a reticulation technician.
- Documentation and record-keeping basics.

Day 2: System Components and Hydraulic Principles

- Detailed study of pipes: materials, diameters, gradients.
- Manholes: types, construction, inspection points.
- Pumps and lift stations: operation and common faults.
- Valves: gate, non-return, and pressure relief.
- Hydraulic principles: flow, velocity, head loss.
- Flow measurement: weirs, flumes, meters.
- Reading and interpreting reticulation plans.
- Practical exercise: calculate flow in a simple system.

Day 3: Problem Identification Techniques and Data Collection

- Visual inspection techniques: manhole entry, pipe condition.
- CCTV inspection: operation, interpretation of footage.
- Flow monitoring: data loggers, interpretation of trends.
- Sampling techniques for wastewater quality.
- Recording observations: forms, digital tools.
- Symptom analysis: blockages, surcharging, odours.
- Root cause analysis: tree roots, grease, structural defects.
- Prioritisation matrix: risk, frequency, cost.

Day 4: Diagnostic Tools and Analytical Methods

- Smoke testing: procedure, safety, interpretation.
- Dye testing: tracing flow paths, detecting cross-connections.
- Hydraulic modelling basics: software tools, data input.
- CCTV report analysis: defect coding, severity grading.
- GIS applications: mapping problems, asset history.
- Pressure testing: isolating sections, leak detection.
- Flow capacity analysis: comparing design vs. actual.
- Practical exercise: diagnose a simulated problem.

Day 5: Developing Solutions and Remedial Actions

- Solution options: cleaning, repair, replacement, rehabilitation.
- Cost-benefit analysis: lifecycle costs, urgency.
- Designing remedial actions: specifications, materials.
- Environmental impact assessment: discharge, odour.
- Regulatory compliance: water use licences, bylaws.

- Action planning: tasks, resources, schedule.
- Reporting: structure, audience, recommendations.
- Case study: develop a solution for a real scenario.

Day 6: Implementation Monitoring and Quality Assurance

- Monitoring techniques: flow, level, quality parameters.
- Post-remedy inspection: visual, CCTV, pressure tests.
- Quality assurance: standards, checklists, sign-offs.
- Documentation: as-built drawings, maintenance logs.
- Lessons learned: feedback loop for future investigations.
- Performance indicators: flow rate, blockages reduced.
- Troubleshooting incomplete solutions.
- Practical exercise: inspect and report on a remediated site.

Day 7: Integration, Assessment, and Professional Practice

- Full investigation simulation: problem assignment, field work, analysis, solution.
- Presentation of findings and recommendations.
- Peer review and feedback.
- Unit standard assessment preparation: evidence requirements.
- Professional ethics and responsibility.
- Resources for continued learning: manuals, courses, networks.
- Recap of key concepts over the week.
- Final assessment: written and practical components.

ASSESSMENT & CERTIFICATION

Delegates are assessed through exercises and a final test. A mark of **50% or above** earns an **AATICD Certificate of Completion**, issued digitally with a unique verification code. This course carries **10 NQF credits** at **NQF Level 3**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 28,200.00	R 28,200.00
1	In-House	R 36,700.00	R 36,700.00
1	On-Campus (Pretoria)	R 42,300.00	R 42,300.00

UPCOMING SESSIONS

Start	End	Method	Venue
03 Aug 2026	11 Aug 2026	On-Campus	Pretoria, South Africa
03 Aug 2026	11 Aug 2026	On-Campus	Lagos, Nigeria
04 Aug 2026	12 Aug 2026	On-Campus	Johannesburg, South Africa
05 Aug 2026	13 Aug 2026	On-Campus	Mauritius
06 Aug 2026	14 Aug 2026	On-Campus	Cape Town, South Africa
07 Aug 2026	17 Aug 2026	On-Campus	Dubai, UAE
10 Aug 2026	18 Aug 2026	On-Campus	Abu Dhabi, UAE
11 Aug 2026	19 Aug 2026	On-Campus	Mauritius

Contact us if no suitable date is listed – on-demand sessions can be arranged for groups.

HOW TO GET A QUOTE OR APPLY

1. **Get an instant quotation online:** visit www.aaticd.co.za, open the page for this course (Unit Standard 115897) and click **Get A Quote / Apply**. Select your training method and number of delegates – your quotation is generated immediately and emailed to you with the course brochure attached.
2. **Apply by email:** send the course title, your preferred training method (Online, In-House or On-Campus Pretoria), the number of delegates and your preferred dates to apply@aaticd.co.za – our team will reply with a formal quotation.
3. **Apply by phone or WhatsApp:** call **+27 12 004 8389** or WhatsApp **+27 65 077 6310** and we will prepare your quotation and reserve your seats.
4. **Confirm your booking:** accept the quotation and settle the invoice. As soon as payment is confirmed your delegates are enrolled and receive their AATICD LMS login details by email, along with joining instructions for their chosen training method.

Group discounts apply automatically – the more delegates you enrol, the lower the price per delegate. No payment is required to request a quotation.

Accredited Africa Training Institute for Capacity Development

Unit FO409, Hatfield Plaza, 1122 Burnett St, Hatfield 0028, Pretoria, Gauteng, South Africa
Tel: +27 12 004 8389 · WhatsApp: +27 65 077 6310 · apply@aaticd.co.za · www.aaticd.co.za