



Laboratory quality manager, Vanessa Talbot on the Atomic Absorption Spectrometer

With a drive towards providing accurate and reliable analytical results with the appropriate water analysis methodology, Talbot & Talbot have invested R4.5 million into the development of a state-of-the-art laboratory.

Laboratory focus

SOUTH AFRICA has an increasing need for reliable, efficient and fast analytical services. Talbot Laboratories has proactively responded to this. With such growth in the industry on a local, national and international level, it was evident that the market need for this quality service required a necessary expansion to the laboratory. Previously, the laboratory was limited in space, limiting the number of samples and analyses they could effectively manage. Dr Francois Talbot, director of Talbot & Talbot, told the regional media that their investment realises their vision of growing the business and laboratory threefold. The new laboratory will allow for extra space to cater for further efficiency.

Talbot Laboratories specialises in the chemical and microbiological analysis of all types of water including potable, bottled, borehole and river water, industrial effluent, landfill leachate and municipal wastewater. They assist industries in analysing and classifying their waste in order to conform to legislation regarding the safe disposal of waste – hazardous and non-hazardous. They have vast analytical

experience and capabilities within their structure, allowing them to advise clients on the most practical approach to developing and validating any methodologies required.

Talbot Laboratories is a commercial laboratory, recognised by the South African National Accreditation System (SANAS) and a member of the International Laboratory Accreditation Cooperation (ILAC). Since 2003, Talbot Laboratories have been accredited to the ISO 17025 standard. This accreditation, together with the laboratory's participation in regular proficiency testing, ensures valid and reliable results. More than 75% of the methods performed by the laboratory are now accredited.

Clients include governmental departments, municipalities, water authorities, consulting engineers, environmental companies, farmers, schools, clinics, transport companies, breweries, tanneries, paper and pulp industries, sugar producers, dairies, manufacturing industries, hoteliers and the general public. Talbot Laboratories were awarded the Department of Water Affairs and Forestry tender for KwaZulu-Natal,

eight years ago and continues to be the department's preferred supplier for laboratory analysis. During 2006, it was also awarded the Department of Water Affairs and Forestry tender for the Eastern Cape and was again successful in retaining this when it was awarded this year. Talbot Laboratories' commitment to delivering an excellent service to the Department of Water Affairs and Forestry has been unwavering. Talbot Laboratories provides a monitoring and analytical service to many small and medium water and wastewater works in KwaZulu-Natal. These are operated by local authorities who generally do not have their own laboratories. They therefore depend on companies who can provide analytical services, data interpretation and advice on optimisation of the plant. In addition to monitoring public water and wastewater works, there are private wastewater package plants that are installed in housing developments. These are required by law to be monitored by an independent party and Talbot Laboratories are responsible for several developments in the province. Talbot Laboratories are required to report back to the body corporate or homeowners association, as well as the authorities. As an independent third party performing the monitoring, analysis and interpretation of the data, clients can be assured that data produced is a true reflection of plant performance and water quality. Hazardous waste is waste that has the potential, even in low concentrations, to have a significant adverse effect on the public health and the environment due to its' inherent toxicological, chemical and physical

characteristics. Inorganic or organic elements or compounds found in hazardous wastes may exercise detrimental acute or chronic impacts on human health and the environment. Talbot Laboratories houses an innovative waste division that offers expert advice with regard to testing and handling of hazardous waste materials.

Talbot Laboratories receive an average of 1 500 to 2 000 hazardous waste samples per annum. These samples are treated as per the documented standard: Minimum Requirements for the Handling, Classification and Disposal of Hazardous Waste – Department of Water Affairs and Forestry – EPA 1311. The samples are quantified for inorganic and organic hazardous elements. Not all substances in waste streams leach into the environment. In such cases, tests such as the Toxicity Characteristics Leaching Procedure (TCLP) and Acid Rain Leaching Procedure (ARLP) can be used to determine the amount of hazardous substances that will leach out of the waste stream. The leachate produced is requantified for inorganic and organic hazardous elements and thereafter delisting of the waste site is estimated. Talbot Laboratories offers a competitive turnaround time of 10 to 15 working days for these analyses.

In 2007, Talbot Laboratories received over 16 000 samples and analysed over 127 000 determinants. With the investment and expansion of the lab, completed in the beginning of 2008, they have begun to realise their vision of growing the lab three fold. **35**