

# DECODING THE RE-ACCREDITATION OF MCM COAL LAB'S ISO 17025:2017 WITH MR PRINCE NAKEDI – PROCESS ENGINEER



MR PRINCE NAKEDI – MCM PROCESS ENGINEER

## What does the MCM Coal lab do?

MCM Laboratory was established in 1987 with the aim to prepare samples and ship off to Amcoal Central Coal Laboratory in Witbank South Africa for testing. The laboratory then continued to grow and increase machine fleet and competency of the resources. From the inception of onsite Laboratory operations to date, valuable material information in terms of reporting have improved from a turn-around-time (TAT) of one (1) month to two (2) hours which is best practice for coal processing plants.

Our site-specific activities include: sampling, sample preparation, analysis and reporting of results. We are strategically located in Palapye, near the Morupule Power Stations (BPCA & BPCB) as our primary external clients. The laboratory offers on demand sampling services and operates 24hrs a day.

MCM Laboratory, as an in-house service provider for mine-wide operations have partnered with respective stakeholders for support in quality management and compliance which also serve as contractual obligations to unlock and support trade with the seaborne market.

The laboratory was introduced to fulfil customers' standards as well as MCM internal clients' standards. Year to year our capabilities have consistently provided creative and economical solutions to the most demanding customer requirements. Our Laboratory processes are supported by the latest machine technology inclusive of X-Ray Fluorescence Machine, Combustion Analysers and UV- VIS amongst the rest. We are supported by a state-of-the-art tooling and an experienced and oriented work force that consistently maintains MCM's pride and tradition of producing the highest quality products and services.

Processes are documented and implemented to provide early detection of discrepancies and to ensure positive root cause corrective actions and improvements, as necessary. Process Sheets, Checkpoint Sheets, Work Instructions and Customer information are in place at the production operation level. This is to ensure critical customer specifications and testing are carried out in a controlled manner using the proper calibrated equipment in conjunction with work environment, infrastructure and facility preventive maintenance programs.

MCM Laboratory is SADCAS accredited (Accreditation no. TEST-5 0050) for Chemical Analysis of Coal. The test methods within the scope of accreditation include Sample Preparation; Determination of Phosphorus; Determination of Total Sulphur; Calorific Value; Moisture in Analysis Sample; ISO Ash; Determination of Volatile Matter; and Particle Size Distribution.

## How does this function fit into the MCM Business cycle/ system?

MCM Laboratory commits to drive the organisation's strategic objectives through good governance with full compliance to international standard requirements.

Our professional practices and work processes comply with industry standards and regulatory requirements, and ensure clients' needs and expectations are met and results are accurate, reliable and timely. Through the implementation and adherence to our quality policy, we achieve our goal, which is to attain complete client satisfaction. Regular quality policy and procedure reviews at all levels within the organization represent MCM Lab commitment to continually improve, to comply with the standards of our numerous certifications, and to better serve our clients and employees.

MCM Laboratory is committed to ensure customer satisfaction by offering affordable, efficient, responsive, flexible and uncompromised quality services to the dynamic and rapidly growing coal mining sector. To meet our main objective MCM complies to ISO/ IEC 17025:2017 standard requirements. All our working procedures are in accordance to ISO and ASTM methods for coal sampling and analysis or as per customer requirement. Our equipment is calibrated by SADCAS/SANAS accredited facilities for temperature, humidity and mass. MCM Laboratory evaluates employee competencies on all work methods through evaluating their performance in proficiency testing schemes to ensure that the results reported are accurate and trusted.

## In simple terms, what is ISO/IEC 17025:2017

ISO/ IEC 17025 is an international standard for general requirements for the competence of testing and calibration laboratories. MCM Laboratory is accredited to the latest and third edition of the standard which was officially rolled out in 2017.

ISO/ IEC 17025 aims to promote impartiality, competence, confidence and consistent operation of a laboratory.

## Why is it important for the MCM Coal lab to be accredited?

An accredited laboratory provides degree of confidence on reported results which may positively contribute to the organisation's market share; enhancement of customer experience; growth of an organisation bottom line through cost savings (minimisation of third-party analysis by accredited laboratories) and revenue generation by provision of laboratory services; competence of laboratory resources; and better control of laboratory operations.

As part of contractual negotiations in coal trading, provision of quality reports though an accredited in-house laboratory has proven to be a positive attribute.

## What is the process of the accreditation?

The SADCAS accreditation process comprises of five stages being:

- Application and Document Review – The company/ nominated representative completes application forms accompanied by the quality manual. SADCAS will then conduct document review after confirmation of completeness of application documents.

- Pre-assessment – This is a gap analysis stage (optional) to assess the organisation's readiness for a full assessment. An independent auditor fulfilling the standard competence requirements may be engaged at this stage.

- Initial Assessment – Covers all aspects of the organisation's scope of application and it is conducted on site by a SADCAS Assessment Team. Accreditation decisions are made by the SADCAS Accreditation Approvals Committee. The accreditation cycle/ validity of accreditation certificate is 5 years.

- Periodic Onsite Assessment – Undertaken on an annual basis by periodic on-site assessment visits after the organisation has obtained accreditation.

- Re-assessment – Conducted at least 6 months prior to the end of the accreditation cycle of 5 years.

## How did the team prepare for the accreditation?

ISO/IEC 17025 accreditation for MCM Laboratory was a Stay-in-Business (SIB) project driven by the Operational Readiness team. Project phases before the initial SADCAS assessment included benchmarking trips, implementation of a Laboratory Information Management System (LIMS), capacity building,

development of ISO/ IEC 17025 Laboratory Management System and gap analysis. Preparation period before submission of applications for document review was completed within a schedule of 18 months. Decision on accreditation by the SADCAS Accreditation Approvals Committee was then confirmed on the 19th of June 2020. The first cycle of MCM Lab accreditation cycle is scheduled to expire on the 18th of June 2025.

In detail, steps for ISO/IEC 17025:2017 MCM Laboratory accreditation included:

- Appointment of Quality Manager and Technical Team by Top Management
- Management Systems Review – Gap analysis
- Closure of Gap Analysis findings
- Initialising a Policy Statement
- Determination of Scope of Tests to be accredited for, taking into consideration their Method Validations and Standard Operating Procedures
- Capacity building – Personnel, Equipment and Facilities
- Engagement in an Inter-Laboratory Proficiency Testing Scheme
- Initiation of Accreditation Process with Accreditation Body (SADCAS)

## Last words to colleagues in attaining operational excellence?

Organisational culture plays a key role in operational excellence. Ensuring goal alignment in support of the existing Quality Management systems, sustainability and maintenance of the existing MCM quality, asset and SHE management systems will drive the operations forward.

MCM competitive advantage is in product differentiation. Being able to offer uniquely desirable coal quality products, continuous assurance to the existing and potential market base should be demonstrated by quality management hence showcasing the competence of the in-house ISO/IEC 17025:2017 accredited laboratory.

In fulfilling our organisational brand promise of Seam to Value, the MCM workforce is encouraged to manage quality from source to dispatch, across all processes in the coal value chain.

ANNEXURE A		
SCHEDULE OF ACCREDITATION		
CHEMICAL ANALYSIS		
Laboratory Accreditation Number: TEST-5 0050 (ISO/IEC 17025:2017)		
<b>Permanent Address of Laboratory</b> Morupule Coal Mine Laboratory Along A14 Road Morupule Area Palapye Botswana	<b>Technical Signatories</b> : Mr P Nakedi (All methods) Ms G Kanyeto (All methods) Mr Ntate (All methods)	
<b>Postal Address</b> Private Bag 35 Palapye Botswana	<b>Nominated Representative</b> : Mr P Nakedi	
<b>Tel</b> : +267 492 0251 <b>Cell</b> : +267 71 302 940 <b>Fax</b> : +267 492 0643 <b>Email</b> : <a href="mailto:pnakedi@mcm.co.bw">pnakedi@mcm.co.bw</a>	<b>Issue No</b> : 03 <b>Date of Issue</b> : 03 October 2022 <b>Expiry Date</b> : 18 June 2025	
MATERIALS/PRODUCTS TESTED	TYPES OF TESTS/PROPERTIES MEASURED, RANGE OF MEASUREMENT	STANDARD SPECIFICATIONS, EQUIPMENT/ TECHNIQUES USED
Coal	Sample Preparation Determination of Phosphorus Determination of Total Sulphur Calorific Value Moisture in Analysis Sample ISO ASH Determination of Volatile Matter Particle Size Distribution	MCM/LAB/002 WI based on ISO 13909 MCM/LAB/014 WI MCM/LAB/014 WI MCM/LAB/007 WI based on ISO 1928 MCM/LAB/011 WI based on SANS 5925 MCM/LAB/008 WI based on ISO 1171 MCM/LAB/006 WI based on ISO 562 MCM/LAB/010 WI based on ISO 1953
Original date of accreditation: 19 June 2020		