



MINES AND GEOSCIENCES BUREAU

CORDILLERA ADMINISTRATIVE
REGION

ISO / IEC 17025:2005

**LABORATORY
QUALITY
MANUAL**

Reference Code

LQM

Effective

01/09/18

Revision No.

00

LABORATORY QUALITY POLICY

We commit to lead the provision of better, faster and more efficient standard of service in the provision of metallurgical sampling and analysis of samples received from the Filipino people. We follow good professional government practice and adhere to the quality standards set by our regulating agencies to exemplify the Mines and Geosciences Bureau's standard of service. All our laboratory personnel involve quality documentation in the implementation of laboratory policies and procedures carried out in line with stated and approved methods and customer requirements. We commit to continually improve the effectiveness of our quality implementation through adherence with the requirements of ISO/IEC 17025:2005.

MEN AND WOMEN OF MGB-CAR LABORATORY SECTION

Approved by:


FAY W. APIL
Regional Director

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LQM 0.0 Introduction

0.1 Mines and Geosciences Bureau – Cordillera Administrative Region and its functions

The Mines and Geosciences Bureau – Cordillera Administrative Region, or **MGB-CAR**, is one of the offices under the MGB Regional Operations in charge of administration and disposition of mineral lands and mineral resources; promulgate rules and regulations, policies and programs relating to mineral resources management and geosciences developments; and perform such other duties and functions as may be assigned by the DENR Secretary and/or provided by law.

MGB-CAR is responsible for managing the national geosciences programs on land geoscientific surveys (including geological mapping, mineral exploration, geohazard assessment, hydrogeological exploration and vulnerability assessment, and engineering geological and geo-environmental studies) and establishment of mineral reservations; conduct Research and Development on geosciences; and provide geological laboratory and information services. MGB-CAR performs marine geosciences surveys (including coastal/offshore geohazard assessment, mineral exploration and geo-environmental study), and Research and Development on geosciences, and provide marine geoscientific services.

MGB-CAR is responsible for the final evaluation of all mining applications, conduct audit of the disposition of mineral lands and resources, and manage the Mineral Rights Management System. MGB-CAR provides metallurgical and analytical services to the various mining stakeholders; and conduct audit of mineral processing operations.

MGB-CAR shall conduct the final evaluation/review, audit of the implementation and Research and Development for the enhancement of programs on, promote best practices in and investigate incidents/complaints relating to mine safety and health, environmental management and social development.

0.2 History

The Mines and Geosciences Bureau dates back during the Spanish regime, known as the "Inspeccion General de Minas." It took charge of the administration and disposition of minerals and mineral lands. The Office, however, was abolished on July 1, 1886 but its functions and personnel were merged with the General Directorate of Civil Administration.

Under the Philippine Revolutionary Republic, the Departamento de Fomento, translated as Department of Public Welfare was created by virtue of the decree signed by Gen. Emilio Aguinaldo on November 28, 1898. On November 29, 1898, the President signed a decree creating the four (4) divisions of Departamento de Fomento and one of these divisions was the Industry and Agriculture Division. The Mines Section and the Mountains Sections were also formed, wherein the former was under the director of Industry and Agriculture, and latter was under the director of Publicas.

However, when the Americans came, a reorganization was implemented resulting in the emergence of the Mining Bureau by virtue of General Order No. 31, dated March 10, 1900. As part of the

reorganization, the administration of mining grants and claims instituted prior to April 11, 1899 was transferred by Act No. 916 from the Mining Bureau to the Public Lands.

In 1905, the Mining Bureau and the Bureau of Government Laboratories were fused under the Bureau of Science, and the Mining Bureau became the Division of Geology and Mines.

By virtue of Memorandum Order No. 5 dated January 25, 1933, the Mineral Lands Division of the Bureau of Lands was merged with the Division of Geology and Mines under the Bureau of Science to form a division known as the Division of Mineral Resources under the Department of Agriculture and Commerce.

The Division of Mineral Resources was charged with functions of carrying out the provisions of three major laws: (1) provisions of the Act of US Congress 1902 pertaining to mineral lands, and the governance of the leasing and development of coal lands; (2) provisions of Act No. 3077, as amended by Act No. 3852, governing the exploration, location and lease of petroleum; and (3) Act No. 2719 governing mineral oils and gas.

On September 19, 1934, the same division was again placed under the direct supervision and control of the Bureau of Science. It was renamed Division of Mines.

With the promulgation of the Commonwealth Constitution reverting the Regalian Doctrine—which particularly asserts that mineral belongs to the State and their disposition, administration, exploitation, and development shall be done through license, concession, or lease—Commonwealth Act No. 136 and 137 were both enacted on November 7, 1936. Commonwealth Act 136 created the Bureau of Mines, while Commonwealth Act No. 137, otherwise known as the Mining Act of 1936, was actually the first major mining law that would stay for about 38 years until Presidential Decree 463.

When the Second World War came, the Bureau of Mines was reconstituted under the Department of Agriculture and Commerce by virtue of Executive Order No. 1 dated January 30, 1942. In 1944, during the Puppet Philippine Republic, the Bureau of Mines shrunk again into a Division of the Department of Agriculture and Natural Resources.

The Bureau of Mines was restored in 1945 when the Philippine Commonwealth was re-established on February 27 of the same year. Since then, the Bureau of Mines had been under the direct supervision and control of the Department of Agriculture and Natural Resources.

It was only in 1974 that the Bureau of Mines was transferred to the Department of Natural Resources pursuant to Presidential Decree No. 461. On the same day, the Mineral Resources Decree of 1974, or PD No. 463, was issued, amending Commonwealth Act No. 137 to provide among others for a modernized system of administration and disposition of mineral lands and to promote and encourage the development and exploration of the mining industry. PD No. 463 was later revised by PD Nos. 1385 and 1677.

On June 6, 1978, PD No. 1281 was promulgated revising Commonwealth Act No. 136 boosting the Bureau of Mines and Geosciences Bureau with additional tasks as well as authority to make it more responsive to the objectives of the government for its minerals sector.

A year after, some sections of PD No. 1281 was amended by PD No. 1654 to include renaming the Bureau of Mines as Bureau of Mines and Geosciences further making it more responsive to its varied functions.

On June 10, 1987, pursuant to Executive Order No. 192, otherwise known as Reorganization Act of the Department of Environment and Natural Resources (DENR), the MGB became one of the staff bureaus of DENR. MGB took the functions of the Bureau of Mines and Geosciences but minus the line functions that were transferred mainly to the DENR regional offices. It also absorbed the functions of the abolished Mineral Resources Development Board (MRDB), and the Gold Mining Industry Assistance Board (GMIAB).

The passage of Republic Act 7942, otherwise known as the Philippine Mining Act of 1995 on March 3, 1995, and DAO No. 96-40, the Implementing Rules and Regulations of RA 7942, transformed the MGB into a line bureau. The staff bureau created under DAO 1, series of 1988 became the Central Office of the MGB, while Mines and Geosciences Development Service created under DAO 41, series of 1991 became the Regional Offices.

In 1997, by virtue of DAO 97-11, the MGB implemented a full reorganization specifically involving the establishment of two new divisions—the Mining Environment and Safety Division, and the Mine Tenement Management Division—thus, essentially operationalizing the sustainable development principles provision of the Mining Act of 1995.

The year after, the MGB commemorated its centennial year and from then on celebrated its anniversary every 29th of November. MGB's acknowledgement as one of the centennial bureaus further underscored the significance of the State's management of our mineral resources throughout the decades. Likewise, the long history of MGB has only proven its unwavering commitment in championing sustainability in mining and geosciences.

0.3 Vision and Mission

The **MGB-CAR** is guided by the vision and mission of the entire DOLE bureaucracy:

VISION

The Mines and Geosciences Bureau envisions a minerals industry that is not only prosperous but also socially, economically and environmentally sustainable, with broad community and political support while positively and progressively assisting in government's program on poverty alleviation and contributing to the general economic well-being of the nation.

MGB also aims to be the leading geoscience and geo-resources serving the public and nation with scientific reliability.

MISSION

The Mines and Geosciences Bureau, as steward of the country's mineral resources, is committed to the promotion of sustainable mineral resources development, aware of its contribution to national economic growth and countryside community development. It fully recognizes that the development of a responsive policy framework in partnership with stakeholders to govern mineral exploration, mining and investment decisions and an effective institutional structure, are fundamental requisites for the sustainable utilization of the country's mineral resources. It is adherent to the promotion of geological studies as an integral element of socio-economic development, environmental protection and human safety. Yet, it is sensitive to the known environmental impacts of mining and the need for restoration and rehabilitation of mining-affected areas and the development and adoption of environmental and geoscientific technologies.

0.4 Strategic Outcomes

To realize its vision for the industry, MGB subscribes to the core requirements of Sustainable Development as applied to mining and geoscience:

Protection and rehabilitation of the environment;
Promotion of social and community stability;
Preservation of options for future generations; and
Competitive and prosperous mining industry.

0.5 Functional Structure

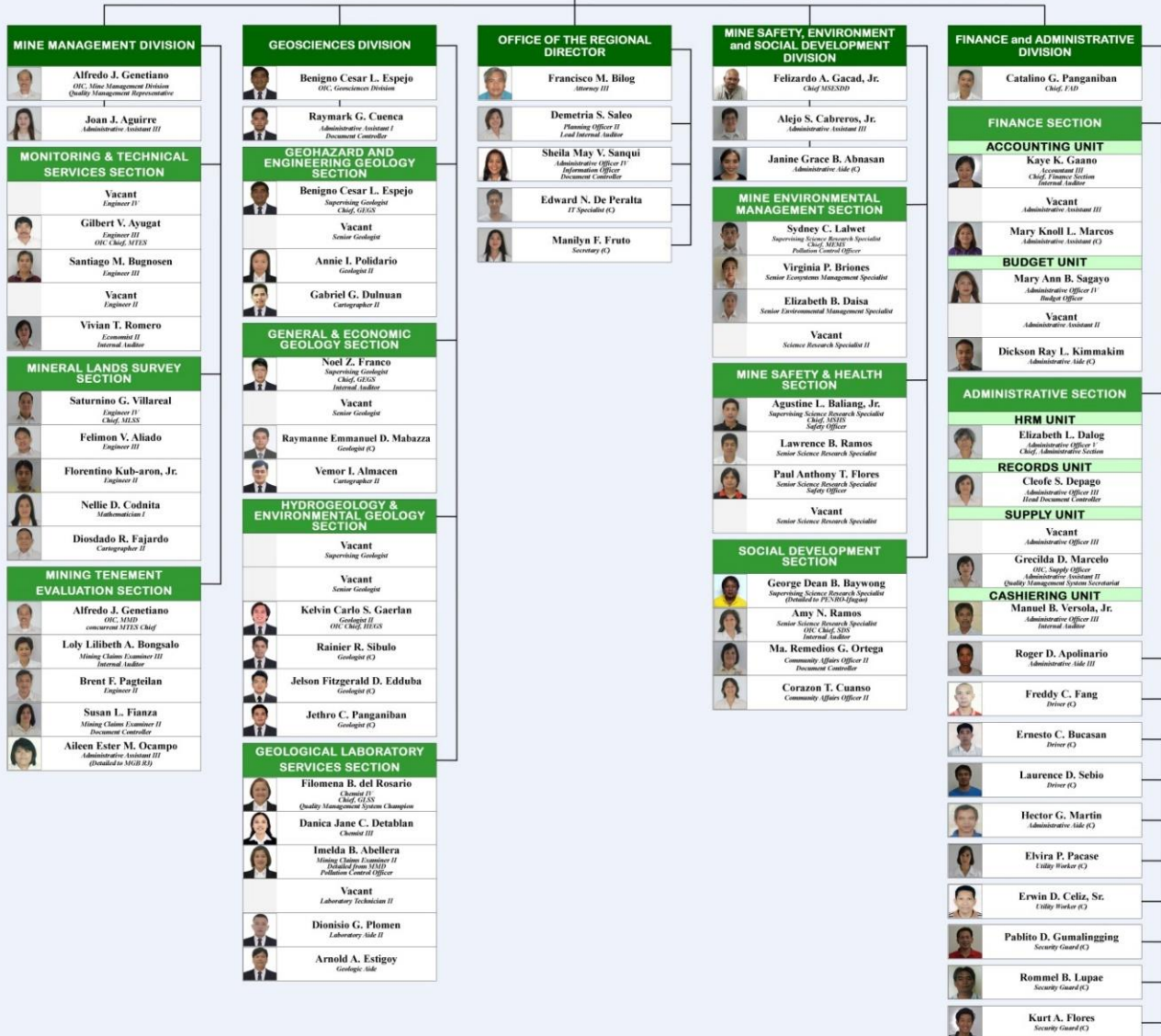
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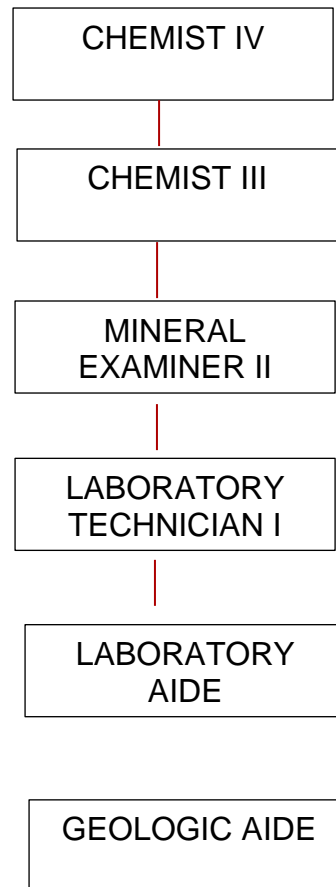
Republic of the Philippines
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
MINES AND GEOSCIENCES BUREAU

Cordillera Administrative Region

FAY W. APIL
 OIC, Regional Director



Laboratory Staff Structure



0.6 The MGB-CAR Process Map

INSERT PROCESS MAP from QMS

0.7 Commitment to Quality Service

This Quality Manual manifests the **MGB-CAR's** commitment to lead the provisions of quality metallurgical sampling and testing services for copper, iron and lime in Cordillera Region through its Quality Management System which adheres to the requirements of ISO 9001:2015. This commitment is specified in the MGB-CAR Laboratory Quality Policy:

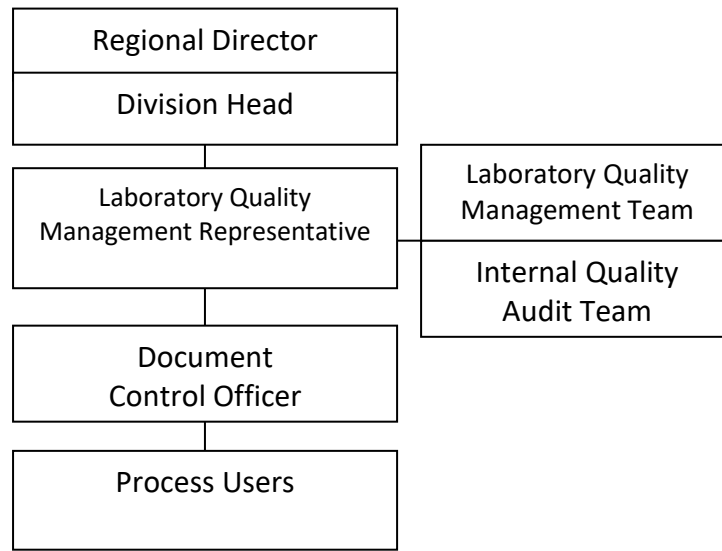
LABORATORY QUALITY POLICY

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0.8 QMS Implementation

To ensure the effective implementation of Laboratory QMS, the agency created a functional structure outlining the role of the organization to provide efficient flow of communication and coordination of activities.

LQMS Implementation Structure



The structure emphasizes the flow of the LQMS emanating from the Regional Director.

The Laboratory Quality Management Team shall serve as the Technical Working Group, reporting directly to the LQMR. It shall plan related activities, monitor progress, initiate improvement measures and assist the LQMR in project implementation.

Likewise, the Internal Quality Audit Team shall ensure that the system is maintained and operated according to the agency's LQMS and in continued compliance to the requirements of the standards.

QM 1.0 Scope and Application

1.1 Scope

Provision of Laboratory Metallurgical Sampling and Testing Services for Copper, Iron, and Lime and its support processes

1.2 Application

The Laboratory Quality Management System and its accreditation to ISO/IEC 17025:2005 is programmed to become the platform of interrelationship of processes and interdependencies of functions aimed at providing seamless flow of services and assurance of valid results in the MGB-CAR Laboratory Section, from and through its baseline structures in the organization.

The LQMS shall apply to the MGB-CAR Laboratory Section, in accord to delivering services under its mandate and to achieving strategic outcomes.

All the requirements, or no exclusion, of the International Standard set forth in ISO 17025:2005 are being applied to the Laboratory Quality Management System.

QM 2.0 Normative References

1. Standards:

- ISO/IEC 17025:2005 General Requirements for Competence of Testing and Calibration Laboratories
- ISO/IEC 17000 Conformity Assessment – Vocabulary and General Principles
- VIM International vocabulary of basic and general terms in metrology
- ISO 19011:2011 Guidelines for Auditing Management Systems

QM 3.0 Terms and Definitions

For purposes of clarifying the Laboratory Quality and Operations Manuals, the following terms and definitions stated in ISO/IEC 17000 and VIM shall apply.

QM 4.0 Management Requirements**4.1 Organization**

4.1.1 The laboratory of MGB-CAR shall be held legally responsible for any discrepancies that are sanctionable due to nonconforming test results and the like.

4.1.2 It is the responsibility of the MGB-CAR laboratory section to carry out its testing and calibration activities in a manner adherent to the requirement of the client, regulatory agencies and methods prescribed in the Manual on Standard Analytical Procedures for MGB Laboratories.

4.1.3 It is the responsibility of the Laboratory that its activities should be solely conducted in facilities that are adherent to the technical requirements of ISO/IEC 17025.

4.1.4 MGB-CAR defines the conflict of interest of other sections and divisions related to the laboratory through issuance of Position Description Files to its employees to properly communicate their duties and responsibilities for properly setting limits of authority and bureaucratic influence. Through the Civil Service Commission, the Laboratory Section also sets protocols relating to external influence through the Anti Red Tape Act and Anti-Corrupt and Graft Practices Act which the regulating agency monitors under strict metrics defined in the CSC Omnibus Code.

4.1.5 The Laboratory Section comprises of employees who have achieved awareness in the requirements of ISO/IEC 17025:2005 and are assigned solely to the processes of the Laboratory Section in MGB-CAR. The Laboratory Section Head has the authority to implement corrective actions pertaining to nonconforming result outputs and the generation of preventive actions to prevent or minimize instances of deviations to prescribed methodologies and LQMS requirements.

The Laboratory Section ensures that there is no undue influence from internal and external parties through monitoring of compliance to the CSC Omnibus Code and non-involvement of other sections and divisions in MGB-CAR in relation to its processes relating to the actual metallurgical sampling and analysis inclusive of sample acceptance and release of test results.

MGB-CAR practices protection of document confidentiality through the Documented Information Procedure together with the incoming and outgoing communication processes. These processes are compliant with the Philippine Government Document Tracking System and compliant with the requirements of the National Archive of the Philippines for the insurance of protection of confidentiality and proprietary rights.

MGB-CAR is adherent to the CSC Omnibus Code for the insurance of the integrity and honesty of its government employees.

The process interrelations of MGB-CAR are outlined in its business process map and its structure reflected in its organizational chart.

The MGB-CAR Laboratory Section has its own organizational chart that reflects the interrelations of its employees and Position Description Files to show their duties and responsibilities with their corresponding authority.

The MGB-CAR Laboratory Section adheres to the Training Procedure prescribed by the CSC and has a defined on-boarding plan for new employees reflected also in the Training Procedure.

The Laboratory Head of MGB-CAR oversees all laboratory technical activities with resource support from the Geosciences Division Head and the Regional Director.

The Laboratory Head of MGB-CAR will also serve as the Quality Manager / Laboratory Quality Management Representative to ensure that the requirements of ISO/IEC 17025:2005 are adhered to.

The Deputy Laboratory Quality Management Representative will be the Assistant Laboratory Head for the purposes of the ISO/IEC 17025:2005 Requirements.

All laboratory employees involved with the Laboratory Quality Management System will be given awareness orientation regarding ISO/IEC 17025:2005 for proper alignment to its requirements.

The MGB-CAR Laboratory Section will follow the Document Tracking System of the whole organization to facilitate proper and efficient communication between other sections and divisions together with the top management.

4.2 The Laboratory Quality Management System

The Laboratory Section of MGB-CAR implements a quality management system complete with the required policies and procedures in-line with both its ISO/IEC 17025:2005 and ISO 9001:2015 compliance. The procedures reflected in these standards are oriented and designated to the corresponding process owners.

There is an available Laboratory Quality Policy which includes the requirements stated in ISO/IEC 17025:2005. This policy is posted in relevant areas and communicated to stakeholders for proper communication and cascading.

The Regional Director is the author and signatory of the Laboratory Quality Policy and oversees the results of ISO/IEC 17025:2005 Implementation to evidence commitment to the requirements.

The Laboratory Section Head is appointed as the Laboratory Quality Management Representative to evidence commitment of the laboratory itself to the requirements of ISO/IEC 17025:2005.

The Laboratory Section Head and the Regional Director are the main proponents of the LQMS Objectives and process improvement initiatives for the internal audit and management review, including insurance of the LQMS integrity if ever changes are implemented.

The Regional Director and Laboratory Section Head communicates the requirements of the LQMS to all stakeholders of MGB-CAR through information dissemination during meetings and assemblies.

The Laboratory Quality Procedures include technical references from which these procedures are derived and have actual copies controlled through the external document control procedure.

The duties and responsibilities of the Laboratory Personnel together with Laboratory Quality Manager / Management Representative are as follows:

INSERT JOB DESCRIPTIONS

4.3 Document Control

The Document Control processes of the Laboratory Section of MGB-CAR are separated into three procedures: Internal Documented Information Control, Records Control and External Document Control.

Internal Documented Information Control requires registration of internal documents with review and approval prior to distribution to ensure that the required elements of documentation (format, media, content, reference accuracy, linkages) are complete through the Document Registration Processing Form. The approved and distributed documents will be then logged in the Internal Document Master List that serves as the internal documents directory and version controller. These internal documents will be reviewed and monitored on a yearly basis through the use of the Document Review Form. Any requests for uncontrolled copies will be done through the Document Requisition Form.

Records Control concerns the correct process of records retention, storage and preservation, protection, and disposal. All retention periods will be monitored through the Quality Records Matrix with the National Archive of the Philippines and other regulatory agencies as references. Records surrendered for inactivity will be monitored through the Records Endorsement and disposal will be monitored using the same tool. Any request for inactive records needs to be monitored through the Records Retrieval Log.

External Document Control pertains to external document references and processes. These documents will be registered, logged, and controlled for version consistency using the namesake procedure.

4.4 Review of Requests, Tenders and Contracts

The MGB-CAR Laboratory Section has an existing procedure for the Request for Analysis of Sample. This is compliant to both the ISO/IEC 17025:2005 Requirements and the requirements for RA 9184 – Government Procurement Act with an outlined process in the Bidding Procedure. This is to ensure that the validity of laboratory test results will not be compromised and adherence to the regulating agency and the ISO/IEC 17025:2005 Requirements are followed.

4.5 Subcontracting of Tests and Calibrations

The MGB-CAR Laboratory Section does not subcontract its tests to other organizations due to the nature of the overall organization as a regulatory and supervisory agency to the mining and metallurgical industry. Any requests for testing that cannot be accommodated by the MGB-CAR Laboratory will be documented for turnover through an official endorsement letter to other capable ISO/IEC 17025:2005 accredited laboratories.

4.6 Purchasing Services and Supplies

The MGB-CAR Laboratory Section purchasing process is documented through the Bidding Procedure which is modeled after RA 9184 – Government Procurement Act. The procedure outlines the details of the competitive bidding processes through the initial request for quotation, pre-bid conference, actual bid conference, bidder's evaluation, and post-qualification of the bid. For direct purchases that can pertain to quality will be controlled using the Control of Suppliers Procedure to ensure the compliance of suppliers to their regulatory and other requirements.

4.7 Service to the Customer

The MGB-CAR Laboratory Section details its customer interaction in the Receiving of Samples/Report of Analysis to ensure confidentiality of customer documents and requirements together with the Document Control processes. There is an existing Customer Satisfaction Survey attached to the Report of Analysis which serves as input for the improvement of the Laboratory Quality Management System.

4.8 Complaints

The MGB-CAR Laboratory Section has an existing procedure for the requirements listed in 4.7 – Service to the Customer through the Receiving of Samples/Report of Analysis Procedure together with the Customer Feedback Procedure. There is an existing process for gathering of quantitative data through the Customer Satisfaction Survey and qualitative data through the Customer Feedback Report. All data will be linked to the Corrective Action Procedure for proper action for Customer Satisfaction.

4.9 Control of Nonconforming Testing

The MGB-CAR Laboratory Section has an existing procedure for Control of Nonconforming Service which is directly linked with the Corrective Action Procedure and Preventive Action to take proactive action to prevent such nonconforming service from happening. The classifications of the Nonconforming Service based on the severity to customer satisfaction and the sources of

Nonconforming Service identifiers such as customer feedback, verification of results, and document review results.

4.10 Improvement

The MGB-CAR Laboratory Section has existing procedures and documentation for the improvement of the laboratory quality management system namely the quality policy, objectives setting based on planning (Office Performance Commitment and Review together with the Work and Financial Plan), Internal Audit Procedure, Corrective and Preventive Action Procedure, and Management Review Procedure.

4.11 Corrective Action

The MGB-CAR Laboratory Section has an existing procedure for Corrective Action through the Corrective and Preventive Action Procedure. The Corrective Action process has requirements for Investigation and Root Cause Analysis, Selection and Generation of Correction and Corrective Action, and Monitoring and Evaluation of the Effectiveness of the Corrective Actions. The need for special audits will be determined based on the investigation and selection of corrective actions.

4.12 Preventive Action

The MGB-CAR Laboratory Section has an existing procedure for Preventive Action through the Corrective and Preventive Action Procedure. The preventive action procedure details the identification of the opportunities for improvement and the generation of proactive actions in order to prevent nonconformities in the processes, improvement of customer satisfaction, and insurance of valid test results.

4.13 Control of Records

The MGB-CAR Laboratory Section has an existing procedure for Records Control in the Operations Manual. Records Control concerns the correct process of records retention, storage and preservation, protection, and disposal. All retention periods will be monitored through the Quality Records Matrix with the National Archive of the Philippines and other regulatory agencies as references. Records surrendered for inactivity will be monitored through the Records Endorsement and disposal will be monitored using the same tool. Any request for inactive records needs to be monitored through the Records Retrieval Log.

4.14 Internal Audit

The MGB-CAR Laboratory Section has an existing procedure for Internal Audit. This procedure is in line with the Requirements of ISO 19011:2011 - Guidelines for Auditing Management Systems and is compliant with the Audit Cycle for ISO/IEC 17025:2005. The Internal Audit is plotted in advance using the Annual Internal Audit Plan and schedules with the auditor's assignment with the use of the Internal Audit Itinerary. Audit Checklists will be used based on the review of the process documentation structure and content and reports will be documented through the Corrective Action Procedure. Internal Auditors are given awareness for ISO 19011:2011 before deployment.

4.15 Management Review

The MGB-CAR Laboratory Section has an existing procedure for Management Review based on the requirements of ISO/IEC 17025:2005. The schedule agreement for the Management Review is applied using the Management Review Schedule and the actual discussion is captured using the Minutes of the Meeting. Monitoring of agreed actions is done through the Management Review Action Plan. The Management Review will be based on the following topics:

- the suitability of policies and procedures;
- reports from managerial and supervisory personnel;

- the outcome of recent internal audits;
- corrective and preventive actions;
- assessments by external bodies;
- the results of interlaboratory comparisons or proficiency tests;
- changes in the volume and type of the work;
- customer feedback;
- complaints;
- recommendations for improvement;
- other relevant factors, such as quality control activities, resources and staff training

LQM 5.0 Technical Requirements

5.1 General

The MGB-CAR Laboratory Section has detailed the requirements in the Laboratory Quality Manual and Procedures Manual in the following insertion:

- Human Factors – HR Procedures
- Accommodation and Environmental Conditions – Evaluation of Compliance
- Test Methods and Method Validation – Analyses Procedures
- Equipment – Maintenance Procedure
- Measurement Traceability – Calibration Procedure
- Sampling – Sampling Procedure
- Handling of Test Items – Sampling and Analyses Procedures

The aforementioned requirements have been integrated into the document procedures noted above.

5.2 Personnel

The MGB-CAR Laboratory Section has detailed procedures for Human Resource Management. In the Recruitment and Placement Procedure, Employees are given Position Description Files which serve as the Job Description or the communication of Obligations, Roles, Responsibilities, Authority, and Accountabilities for each employee. Appropriate Education, Training and Experience (including related certifications) are outlined based on the minimum requirements set for the position by the Civil Service Commission.

The organization has an existing training process with an Annual Training Plan formulated from the Training Needs submitted by the Division Heads from the Regional Offices and collated at the Central Office. These trainings are evaluated using the Training Effectiveness Evaluation Form.

The MGB-CAR Laboratory Section employs Job Orders as supplemental staff in case of lack of regular personnel to perform all tasks efficiently. They are designated to the regular personnel who created the request for job orders who will also be responsible for conducting documented on-boarding of the said contractual personnel. Contracted Personnel are also not allowed to perform core tasks which can affect quality of the output and tasks which require accountability of regular personnel.

The MGB-CAR Laboratory Section has inclusions to the current Position Description Files for integration to ISO/IEC 17025:2005 Requirements which includes:

- the responsibilities with respect to performing tests and/or calibrations;
- the responsibilities with respect to the planning of tests and/or calibrations and evaluation of results;
- the responsibilities for reporting opinions and interpretations;
- the responsibilities with respect to method modification and development and validation of new methods;
- expertise and experience required (based on seniority of position);
- qualifications and training programs (dependent on the position's technical requirements);
- managerial duties (for the Laboratory Head)

The education and competence requirements which are required to perform accountable quality duties (performance of sampling and testing, acceptance of samples, issuance of reports) are indicated in the position description files, including the accountable duties. These are all evaluated by the MGB Selections and Promotions Board for compliance with Civil Service Commission Requirements.

5.3 Accommodation and Environmental Conditions

The MGB-CAR Laboratory Section identifies and evaluates accommodation and environmental conditions based on statutory and regulatory requirements especially in the areas of testing facilities, energy sources, lighting and ergonomics and housekeeping. This is done through the evaluation of compliance procedure which indicates the identified environmental conditions stated per reference document and monitors and evaluates the current compliance so as to ensure that said conditions do not adversely affect the required quality of measurement.

The organization does not conduct testing activities other than the official laboratory section and its facilities to ensure compliance with Clause 5.3 Requirements of the ISO/IEC 17025:2005 Standard. The parameters required (dust, humidity, temperature, pest control, etc.) shall be indicated in the Needs and Requirements Monitoring Tool of the Evaluation of Compliance so as to not jeopardize service quality and integrity.

Isolation of activities are practiced to prevent cross-contamination of noncompatible activities and this is supported by access restrictions and authorizations to performance areas. Guidelines for Basic 5S and Housekeeping are also followed.

5.4 Test Methods and Validation

The MGB-CAR Laboratory Section has existing procedures for sampling, handling, transport, storage and preparation of items to be tested, and references for estimation of the measurement uncertainty as well as statistical techniques for analysis of test data.

There are available equipment manuals for the laboratory equipment and sufficient training has been given to the users of the said equipment as indicated by the Human Resource 201 Files. The test and sampling methods are based on the Manual on Standard Analytical Procedures of the Mines and Geosciences Bureau Laboratory (Revised Edition; Diliman Quezon City; 2001). Method of Testing is indicated in the request for analysis based on the implementation scope of nickel, iron and lime sampling and testing.

The applicability of equipment manuals, sampling and testing methods, accommodation and environmental conditions, and statistical guidelines are based on external reference documents which are reviewed regularly for the applicability and version control. This is to prevent obsolescence of performed methodologies and applied metrics concerning laboratory practices.

In case of no method specifications from the customer, the laboratory personnel will advise the client on current prescribed methods and communicate in documentation through the signed request for analysis the method to be actually applied.

In case of client prescribing obsolete method, the laboratory personnel will inform them of such obsolescence and prescribe nationally accepted methods based on external reference documents so as to ensure validity of delivered results.

The Laboratory Section of MGB-CAR does not apply laboratory developed methods and non-standard methods due to the nature of the regional office being the implementor of the MGB Central Office Mandates and Directives which cannot be superseded by the regional office. Thus, all methods applied by the organization are dependent upon the approval and promulgation of the MGB Central Office through the Manual on Standard Analytical Procedures which is implemented in concession with the Department of Science and Technology.

Records of sampling and testing are recorded in the Sampling and Testing Logbook as indicated in the procedure for Receiving of Samples / Issuance of Test Reports. This is for the purpose of validation of the mother laboratory (MGB Central Office) and as reference for Traceability of Results.

The estimation of the uncertainty of measurement is based on external reference documents especially the Manual on Standard Analytical Procedures to provide rigorous, metrologically and statistically valid, calculation of uncertainty of measurement. Training for Uncertainty of Measurement (e.g. Measurement Systems Analysis and Statistical Process Control) are included in the Training Plan for employees in the MGB-CAR Laboratory.

Control of Data is implemented through the appropriate use of software by the organization as indexed by the Administrative Division. The software used by the laboratory is recommended by the MGB Central Office and hardware used is maintained using the Maintenance Procedure. Authorizations for use of said hardware are identified for proper data safekeeping and confidentiality.

5.5 Equipment

The MGB-CAR Laboratory Section uses established procedures for maintenance and calibration of equipment. Equipment is uniquely identified with a property acknowledgement receipt and the status of maintenance is recorded by the laboratory personnel for monitoring of preventive and corrective maintenance activities to be implemented upon request to the Administrative Division.

Newly Purchased Equipment undergoes bidding before purchase to ensure compliance of supplier to defined metrics and parameters and, upon arrival, are subjected to Inspection with details of the Quality Control Check detailed in the Inspection Report. This is to ensure requirements are met for equipment that will have a significant impact on test results.

Equipment shall be operated by authorized personnel. Up-to-date instructions on the use and maintenance of equipment (including any relevant manuals provided by the manufacturer of the equipment) shall be readily available for use by the laboratory personnel. Records for equipment compliance shall include the following:

- a) the identity of the item of equipment and its software;
- b) the manufacturer's name, type identification, and serial number or other unique identification;
- c) checks that equipment complies with the specifications set by the laboratory;
- d) the current location, where appropriate;
- e) the manufacturer's instructions;
- f) dates, results and copies of reports and certificates of all calibrations, adjustments, acceptance criteria, and the due date of next calibration;

- g) the maintenance plan and current maintenance activities;
- h) any damage, malfunction, modification or repair to the equipment.

Equipment that has been subjected to overloading or mishandling, gives suspect results, or has been shown to be defective or outside specified limits, shall be taken out of service. It shall be isolated to prevent its use or clearly labelled or marked as being out of service until it has been repaired and shown by calibration or test to perform correctly.

The maintenance procedure also includes details for safe handling, transport, storage, use and planned maintenance of measuring equipment to ensure proper functioning and in order to prevent contamination or deterioration.

In case of the equipment is pulled out of the laboratory, calibration will be required before it is returned to service in the event of its return. Authorizations for all equipment are established to ensure there are no unrecorded adjustments that would invalidate results.

5.6 Measurement Traceability

All equipment used for tests, including equipment for subsidiary measurements having a significant effect on the accuracy or validity of the result of the test or sampling shall be calibrated before being put into service. The MGB-CAR Laboratory has an established procedure for the calibration of its equipment.

Suppliers of calibration services for the equipment of the Laboratory of MGB-CAR shall all be accredited to ISO/IEC 17025 as a supplier requirement for engagement of services.

For interlaboratory comparative testing services, the partner laboratory shall be accredited to ISO/IEC 17025 for purposes of assurance of validity of results.

Reference Standards used for testing shall also be tested beforehand by an ISO/IEC 17025 accredited testing facility.

For reference materials and actual inputs and outputs, SI Units will be the medium used to ensure proper translation and integration with nationally and internationally approved references.

Intermediate checks are performed as required by the equipment manual based on its specifications. Transport and Storage for samples are evaluated and integrated into laboratory requirements to prevent contamination or alteration of the sample.

5.7 Sampling

The MGB-CAR Laboratory Section uses an established procedure for sampling based on the Manual on Standard Analytical Procedures of the Mines and Geosciences Bureau Laboratory. The procedure on Analysis of Sample is posted in relevant areas and shall indicate the factors to be controlled during the sampling process. The procedure includes the selection, sampling plan, withdrawal and preparation of a sample or samples from a substance, material or product to yield the required information.

Where the customer requires deviations, additions or exclusions from the documented sampling procedure, the laboratory will inform the client that it is not allowed based on the national requirements stemming from MGB Central Office Laboratory and that the organization will not be able to comply with the said request.

Sampling Recording shall include the sampling procedure used, the identification of the sampler, environmental conditions and diagrams or other equivalent means to identify the sampling location.

5.8 Handling of Test Items

The MGB-CAR Laboratory Section establishes processes for the transportation, receipt, handling, protection, storage, retention and disposal of test items, including all provisions necessary to protect the integrity of the test item, and to protect the interests of the laboratory and the customer. These processes are integrated in the Receiving of Samples / Issuance of Test Report procedure, The Test Procedures, and referenced to the Standard Analytical Procedures of the Mines and Geosciences Bureau Laboratory.

The organization identifies test items and this identification shall be retained throughout the life of the item in the laboratory. The system is implemented so as to ensure that items cannot be confused physically or when referred to in records or other documents. The organization also identifies transfer of items within and from the laboratory.

Upon receipt of the test item, abnormalities or departures from normal or specified conditions, as described in the test method, shall be recorded. When there is doubt as to the suitability of an item for testing, or when an item does not conform to the description provided, or the test required is not specified in sufficient detail, the laboratory shall consult the customer for further instructions before proceeding and shall record the discussion.

The laboratory establishes facilities for avoiding deterioration, loss or damage to the test item during storage, handling and preparation. Handling instructions provided with the item shall be followed. When items have to be stored or conditioned under specified environmental conditions, these conditions shall be maintained, monitored and recorded. Where a test item or a portion of an item is to be held secure, the laboratory shall have arrangements for storage and security that protect the condition and integrity of the secured items or portions concerned.

5.9 Assuring the Quality of Test Results

The MGB-CAR Laboratory Section establishes a procedure for the issuance of test reports. The resulting data shall be recorded in such a way that trends are detectable and monitoring shall be conducted on the following:

- a) regular use of certified reference materials
- b) participation in interlaboratory comparison
- c) replicate tests using the same or different methods;
- d) retesting of retained items;
- e) correlation of results for different characteristics of an item.

These trends shall be analyzed and applied with statistical process control to correct or prevent nonconforming results and establish corrective and preventive actions through the Corrective and Preventive Action Procedure.

5.10 Reporting the Results

The MGB-CAR Laboratory Section establishes a procedure for the Issuance of Test Reports to ensure proper documentation and recording. The results of each test carried out by the laboratory shall be reported accurately, clearly, unambiguously and objectively, and in accordance with any specific instructions in the test methods.

The contents of the test report are standardized and should include the following information, unless there is appropriate justification:

- a) a title
- b) The Name of the Laboratory and Address

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- c) unique identification of the test report (such as the serial number), and on each page an identification in order to ensure that the page is recognized as a part of the test report, and a clear identification of the end of the test report;
 - d) the name and address of the customer;
 - e) identification of the method used;
 - f) a description of, the condition of the items tested
 - g) the date of receipt of the test items and the date of performance of the test;
 - h) reference to the sampling plan and procedures used by the laboratory
 - i) the test results
 - j) the names, functions and signatures authorizing the test report
 - k) A statement to the effect that the results relate only to the items tested

In addition to the requirements listed above test reports shall, where necessary for the interpretation of the test results, include the following:

- a) deviations from, additions to, or exclusions from the test method, and information on specific test conditions, such as environmental conditions;
- b) where relevant, a statement of compliance/non-compliance with requirements and/or specifications;
- c) where applicable, a statement on the estimated uncertainty of measurement;
- d) where appropriate and needed, opinions and interpretations;
- e) additional information which may be required by specific methods;

In addition to the requirements listed above, test reports containing the results of sampling shall include the following, where necessary for the interpretation of test results:

- a) the date of sampling;
- b) unambiguous identification of the substance, material or product sampled;
- c) the location of sampling, including any diagrams, sketches or photographs;
- d) a reference to the sampling plan and procedures used;
- e) details of any environmental conditions during sampling that may affect the interpretation of the test results;
- f) any standard or other specification for the sampling method or procedure, and deviations, additions to or exclusions from the specification concerned.

When opinions and interpretations are included, the laboratory shall document the basis upon which the opinions and interpretations have been made. Opinions and interpretations shall be clearly marked as such in a test report.

In the case of transmission of test results by telephone, facsimile or e-mail the requirements stated by the ISO/IEC 17025:2005 Clause 5.10 shall still apply.

The format for test reports are standardized but also allow customization in the portion for the method of the testing and sampling. Material amendments to a test report after issue shall be made only in the form of a further document, or data transfer, which includes a standardized statement and information still adherent to ISO/IEC 17025:2005 Clause 5.10. When it is necessary to issue a completely new test report or calibration certificate, this shall be uniquely identified and shall contain a reference to the original that it replaces.

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