

Administrative Order
No. 34
May 10, 1993

SUBJECT : Nullifying the Authority to Receive Application and Issue Mining/Quarry Permits Covering the Areas Embraced by Presidential Proclamation Nos. 1636 and 1637 without Clearance from the Parks and Wildlife Bureau and the Housing Land Use Regulatory Board.

In order to bring about proper land use and to minimize environmental degradation as a result of mining and quarrying operations as well as to attain the objectives and purposes of Presidential Proclamation Nos. 1636 and 1637, the authority to receive application and issue mining quarry permits covering the areas embraced by said proclamation without clearance from the agency concerned is hereby nullified and revoked.

Henceforth, the Mines and Geo-Sciences Development Service of Region III and IV and the Provincial Governors of Bulacan, Laguna, Quezon and Rizal shall not accept any application for mining rights unless cleared by the Parks and Wildlife Bureau and the Housing Land Use Regulatory Board on areas covered by Presidential Proclamation Nos. 1636 and 1637 respectively.

This order shall take effect immediately.

ANGEL C. ALCALA
Secretary

Administrative Order
No. 45
July 14, 1993

SUBJECT : Establishment of the National and Regional Mining Titles System Centers and Establishing the Responsibility of the Mines and Geosciences Bureau and the Mines and Geoscience Development Service of the Regional Offices on the Mining Titles System Implementation

In order to ensure sustainability and coordination in the implementation of the Mining Titles System, the following guidelines establishing the national and regional centers as well as the responsibilities of the Mines and Geosciences Bureau (MGB) and the Mines and Geosciences Development Service (MSDS) are hereby promulgated for the guidance and compliance of all concerned:

Section 1. Basic Policy and Objectives. It is the policy of the Department to enhance the contribution of our mineral resources for economic and social development and promote equitable access to these resources by different sectors of the population. Towards this end, the System seeks to attain the following objectives:

- 1.1 Increase the efficiency of mining titles management through the establishment of computer-based administrative system for the processing of mining rights applications;
- 1.2 Develop the skills of DENR personnel in computer technology;
- 1.3 Facilitate and provide guidance in the administration of mining rights; and
- 1.4 Create a national database that will improve the reliability of mining titles and enable the purging of invalid files to give greater confidence and security of tenure.

Section 2. Title of the System. This computer-based administrative system shall be known as the Philippine Mining Titles System or MTS.

Section 3. Definition of Terms. For the purpose of this order, the following terms, whether in singular or plural, and abbreviations shall have the following meanings:

- 3.1 **Data Exchange** - refers to the physical transfer of data in magnetic media from the MGDS to MGB and vice-versa;
- 3.2 **Installation Site** - refers to either MGB or MGDS where the MTS has been installed;
- 3.3 **Macro-Regional Center** - refers to any of the three MGDS offices, namely: Regions IV, VII or XI responsible for assisting the regional offices within their respective areas of jurisdiction, as prescribed herein, to achieve a stable operation of the MTS;
- 3.4 **Macro-Region Database Supervisor** - is a staff from the MGDS macro-regional center in charge with the maintenance and ensuring stable MTS operation at installation sites within the macro-region's jurisdiction;
- 3.5 **MGB** - Mines and Geosciences Bureau where the national database center is established;
- 3.6 **MGDS** - Mines and Geosciences Development Service in the DENR regional offices where the MTS is installed;
- 3.7 **MOO** - Mineral Operations Officer of the concerned MGDS office;
- 3.8 **National Database Supervisor** - is a member of the MGB staff responsible for the consolidation of mining tenement databases from MTS installation sites nationwide and providing assistance in troubleshooting system problems in MGDS offices when requested;
- 3.9 **National System Coordinator** - is a member of the MGB staff responsible for the coordination and evaluation of the operations of MTS nationwide;
- 3.10 **Non-Macro Region Database Supervisor** - is a member of the staff of non-macro MGDS office responsible for the operations and maintenance of the MTS in the concerned MGDS office;

- 3.11 **System** - refers to the Philippine Mining Titles System where a specialized computer software is used in the management of mining documents nationwide and operated by trained personnel of MGB or MGDS;
- 3.12 **System Manager** - refers to a duly designated member of the MGB or MGDS staff, holding the position of either as National System Coordinator, National Database Supervisor, Macro-Region Database Supervisor or Non Macro-Region Database Supervisor and trained to manage and maintain the MTS;
- 3.13 **System Operator** - refers to a member of the MGB or MGDS staff trained to handle the MTS software either to input or query data and prepare reports from the system.

Section 4. Establishment of MTS National and Regional Centers and Management of the MTS. For purposes of carrying out the intents of this Order, MTS centers shall be established at MGB as national center and the MGDS Offices as regional centers.

The national center shall have responsibility of coordinating the MTS operations in all regional installation sites including regular updating and maintenance of consolidated regional databases. Upon request by MGDS office(s), it shall assist MGDS regional centers to mitigate problems encountered during the operation of the system.

In the interim and until such time that all MGDS regional offices are fully capable and equipped with the necessary skills to maintain smooth operation of the system, three (3) macro-regional centers based in Regions IV, VII and XI shall be established to oversee and assist the operation of the MTS in other regional offices. These Macro-regional centers shall provide system expertise and service required to attain a stable operation in their respective offices including MGDS offices within their areas of jurisdiction more specifically described as follows:

D E N R Non-Macro Region	Macro-Regional Center In-Charge
CAR	Region IV
Region I	Region IV
Region II	Region IV
Region III	Region IV
Region V	Region VII
Region VI	Region VII
Region VIII	Region VII
Region IX	Region XI

Region X
Region XII

Region XI
Region XI

Services to be rendered by the Macro-regional center(s) to non macro-regions shall include:

- (a) restoration of the system in case of failure, diagnosing, testing and fixing for system faults;
- (b) installation or re-installation of the MTS software;
- (c) recovery or repair of damaged databases;
- (d) programming of utility and customized report modules needed by the office;
- (e) assistance in the selection and evaluation of software and hardware purchases;
- (f) provide information and advice on the development of other mining industry related system; and
- (g) training of staff in the use and management of the system.

Travel expenses, per diem and other related expenses of the system manager providing the above services shall be borne by the requesting office.

Non-Macro MGDS regional offices shall be responsible in the normal operation and safekeeping of the installed MTS in their respective sites. They shall call on their macro-regional centers for assistance in case of system troubles or failure.

The structural hierarchies of responsibility within the national, macro-regional and specific regional MTS centers are shown in Appendix 1. The Director of the MGB and Regional Technical Directors of MGDS are directly responsible in carrying out the tasks required by the Mining Titles System from their respective offices. The National Systems Coordinator shall assist the MGB Director in overseeing system operations at the national level. The Database Supervisors shall be responsible for building up and maintaining the databases, the system software and consumable at their offices. The System Operators shall handle all tasks relating to data entry and report preparation in the Mining Titles System upon the direction of their Database Supervisors.

Section 5. Data Entry and Maintenance. As provided for by existing regulations, MGB and MGDS shall hold jurisdiction over the administration of certain mining titles and applications in the country such as Mineral Production Sharing Agreements (MPSAs) and various forms of mining permits and licenses in mineral and non-mineral reservation areas. They shall be responsible in the entry and maintenance of the corresponding mining tenement data required by the MTS and ensure the timely update and regular backup of these databases in their offices.

Section 6. Data Exchange. In order to ensure availability of mining tenement data at any MTS installation site and achieve the national objective of building up a nationwide database, the following standard operating procedures shall be observed:

- 6.1 MGB shall maintain the National MTS Center where all existing mining tenement data in every installation site are forwarded, consolidated and maintained;
- 6.2 Each MGDS installation site shall send a complete copy of a pre-determined set of regional database files in 3.5" high density disk(s) to the MGB as of the close of business hours on the last business day of each month. It shall likewise submit the required number of disks as determined by MGB to be used in copying the appropriate data from the national database for its own use;
- 6.3 MGB shall consolidate all databases submitted by MGDS installation sites into a national database. After consolidating these databases, MGB shall provide every MGDS installation site, as much as practicable, with the appropriate files of the national databases for data query purposes. These national database files shall be copied by MGB in the disk(s) provided by MGDS concerned.

The DENR offices/attached agencies, other than MGB and MGDS, may be provided with the same databases under similar disk exchange scheme through written request with the MGB, subject to evaluation and approval of the MGB Director and prior clearance from the DENR Secretary.

- 6.4 All dispatches of these databases must be sent through fastest available means of delivery such as private courier(s) or parcel service(s) so that receipt of the same can be achieved within 48 hours. In order to avoid delays, MGB should immediately alert regions whose transmittals have not been received on the fifth (5th) regular business day of the succeeding month.

- 6.5 MGB and MGDS should ensure that the packaging and transmission of databases are protected from any damage. All database package(s) must bear the security seal of either the office or the courier to discourage tampering. If the seal is broken, the receiver must immediately notify the sender and the magnetic media should not be utilized.

Section 7. Security and Maintenance of the System. MGB shall devise a standard security strategy and procedure to be enforced in all installation sites. Only authorized users as determined by the MGB Director for the national center and the MGDS Technical Directors for the regional installation sites can enter, amend, delete or update data in the system. Manipulation, processing or copying of databases other than that intended for the current version of the MTS shall not be allowed without prior written consent of the MGB Director.

The following measures shall be observed to ensure proper maintenance of the system.

7.1 **Hardware**

All MTS computer hardware(s) and equipment donated under the Natural Resources Management and Development Project (hereinafter, NRMDP) shall be used exclusively for the Mining Titles System or its related systems to be developed under the direction of MGB;

It shall be the responsibility of the office concerned (MGB or MGDS) to plan for the maintenance of the computer hardware(s) and other equipment installed for the MTS. They shall regularly plan ahead and allocate sufficient budget to meet both preventive and breakdown maintenance cost for these equipment/hardware. Where maintenance becomes impractical against replacement, MGB or MGDS concerned shall plan and initiate the acquisition of new hardware;

There should be a semi-annual inventory of all equipment used by the MTS. Serial number(s), location and physical condition of the equipment should be recorded as part of the inventory process. MGDS offices should provide a copy of this inventory to the National MTS Database Centre.

All MTS hardware and equipment should be placed and installed in a physically secured and pleasant working environment within the MGB or MGDS office to prevent theft, vandalism or unauthorized use and to provide appropriate protection from dust, heat, humidity and direct sunlight.

Subject to existing accounting and auditing requirements, breakdown maintenance should be done as much as possible by the accredited EPSON Computer servicing agents in order to ensure guaranteed performance and hardware efficiency.

7.2 Software

In order to achieve a standard output and operation of the system at any installation site and to prevent unnecessary maintenance expenses for trouble(s) resulting from any deviation on the system adopted, only the official version of MTS software, as certified by the National MTS Center, should be installed in the MTS computer hardware.

The official copy of application softwares provided by NRMDP should be the only softwares to be installed in the MTS hardware. The installation of illegal or pirated software such as video games should not be allowed in the MTS hardware to avoid contamination of the system with software viruses which may damage the MTS databases and its related files. The official virus detection and removal software provided by NRMDP should be installed in the system to minimize database corruption or damage. The MGB and MGDS should exert every effort to procure a copy of the latest and effective virus removal and detection software to protect its accumulated database files in the event that the original software becomes obsolete.

7.3 Consumables

Adequate supply of consumable should be planned ahead and provided to ensure smooth and uninterrupted operation of the MTS. Acquisition of consumables shall be the responsibility of the concerned MTS installation site. A monthly inventory of consumable should be made to control and monitor consumption.

7.4 Call For System Support and Assistance

Normal software problems should be reported immediately to the Macro-Region Database Supervisor. The circumstances describing how the problem occurred should be clearly documented in a step list fashion including a printout of error messages appearing on the monitor screen, if possible. If a telephone facility is available, this report should be relayed immediately to the macro-regional centre so that an early solution to the problem could be recommended. A courier or fax service would be more appropriate if a detailed documented report is available. If the Macro-Region Database Supervisor may not be able to figure out some solutions to the problem, the National MTS Centre should be consulted for

advice. In any case, all software problems encountered at installation sites should be reported by Regional Database Supervisors to the MGB to serve as basis for formulating plans and actions to anticipate similar problems likely to be encountered by other sites.

7.5 Training of System Managers and Operators

As part of the strategy to make the MTS sustainable in the long term, the MGB or MGDS Directors should initiate and organize the conduct of training of selected members of the staff from their offices to produce a pool of trained personnel qualified to manage and operate the system in case of resignation, long periods of absences or inavailability of existing system managers and operators. In their order of importance, selection criteria should be based on the commitment of the individual to accept responsibility as a system manager or operator, computer programming background (for system managers), knowledge about mine titling administrative procedures and an acceptable level of aptitude.

7.6 Enhancement and Modification of the System

Administrative processes or demands for specific information from the MTS may change through the passage of time due to new laws or policies and the desire for procedural improvements from both management and users. Should the MGB and MGDS Directors perceived the relevance of such change(s), a systematic and uniform procedure to incorporate the change(s) in the MTS should be followed.

Proposal(s) for MTS modification(s)/upgrade(s) should be prepared containing the following minimum information:

- a) Title of Proposed Amendment
- b) Purpose of the Amendment
- c) Details of the Amendment
- d) Perceived Benefits of the Amendment

Said proposal(s) should be forwarded to the MGB Director who shall cause the assessment of the proposed change(s) by the national system managers in consultation with the macro-regional centers and other authorities to evaluate its feasibility and implications. If merit for such modification(s)/ upgrade(s) could be established, a recommendation for undertaking the amendment together with a detailed proposal shall be submitted for approval of the MGB Director.

Formal analysis, design and construction of the revised or modified system shall be carried out at the MGB and/or MGDS. The reliability or accuracy of the modified system shall be tested using the existing data prior to implementation at MTS installation sites. Corresponding revisions to the User's and technical Manuals shall be prepared by MGB with the assistance of macro-regional centers.

7.7 System Monitoring

All MTS installation sites (MGDS and MGB) shall submit reports required by the MGB Director in order to effectively monitor, identify problems and evaluate performance of the Mining Titles System for the purpose of improving and refining its current version.

Section 8. Effectivity. This Order shall take effect immediately.

ANGEL C. ALCALA
Secretary

Recommended by:

SALVADOR G. MARTIN
OIC, Director
Mines and Geosciences Bureau

Administrative Order

No. 46

July 15, 1993

SUBJECT : Extension of Mining Production Operations in Areas Covered by Expired Leases, Operating Agreements, Quarry Permits/Licenses and Sand and Gravel Permits Applied for Mineral Production Sharing Agreement (MPSA).

In order to provide continuity of mining production operations in areas covered by expired leases, operating agreements, quarry permits/licenses and sand and gravel permits applied for Mineral Production Sharing Agreement (MPSA) and in line with the thrust of the government to provide remedial measures for the revitalization of the mining industry and support the on-going construction industry, the following rules and regulations are hereby promulgated for the guidance of all concerned:

Section 1. All holders of expired mining leases, operating agreements, quarry permits/licenses and sand and gravel permits covering more than twenty hectares (20) who have voluntarily applied for Mineral Production Sharing Agreements (MPSA) prior to their expiration may continue such operation without securing Interim Mines Permits for a maximum period of one (1) year or until such time that their MPSAs are approved, whichever comes first, subject to the following conditions:

- a. That the production operation is actually going on for at least one (1) year before the expiration of the lease, operating agreement, quarry permit/license and sand and gravel permit.
- b. That the aforesaid holders have no record of any violations of the terms and conditions of the lease, operating agreements or permit/license as well as the existing mining laws, rules and regulations.
- c. That the aforesaid holders have submitted the required work programs and posted the corresponding surety bond as determined by the concerned Regional Technical Director for Mines and Geosciences.
- d. That quarterly progress production report shall be submitted by the holders/operators covering the subject areas for the purpose of computing the share of the Government from production. The MPSA proposal shall be the basis for the interim share of the government provided it is not lower than the prevailing excise tax.

Section 2. This Administrative Order shall not apply to:

- a. Those who have existing Interim Mines Permits, and
- b. Those areas under litigation at the time of issuance of this order.

Section 3. At any point during the extension period of a mining operation, the DENR may order the stoppage of any mining operations with reasonable cause and for violation of any mining and other applicable laws, rules and regulations.

Section 4. All orders, rules and regulations inconsistent with or contrary to the provision of this order are hereby repealed or modified accordingly.

Section 5. This administrative Order shall take effect fifteen (15) days after its publication in a newspaper of general circulation.

APPROVED: July 15, 1993

ANGEL C. ALCALA
Secretary

Recommended by:

JOEL D. MUYCO
Director
Mines & Geosciences Bureau

**Administrative Order
No. 48
July 23, 1993**

**SUBJECT : Standard Costs and Fees for Various
Services of the Mines Sector.**

Pursuant to Executive Order NO. 192 and Memorandum Circular No. 121 of the Office of the President, the following fees and charges for services rendered by the mines and geosciences sector are hereby revised and/or updated:

A.	MINING AGREEMENTS (In Pesos, unless otherwise indicated)	FEES/CHARGES
A.1.	For registering mining documents	
A.1.a.	Per Power of Attorney	100.00
A.1.b.	Transfer or other assignments	150.00
A.1.c.	All other instrument affecting mining rights P.D. 1856, as amended	150.00
A.2.	For filing of Mineral Production Sharing Agreement (MPSA)	
A.2.a.	Filing Fee	100.00/proposal
A.3.	For processing of Mineral Production Sharing Agreement (MPSA) proposal	
A.3.a.	Processing Fee	5,000.00
A.4.	For processing of interim Mines Permit Under Mineral Production Sharing Agreement (MPSA)	
A.4.a.	Processing Fee for interim Mines Permit under Mineral Production Sharing Agreement (MPSA)	100.00/application

A.5.	For filing of application for approval of assignments, Operating Agreement and Service Contracts	6.00/hectare
A.6.	For application for exploration permit	
	A.6.a. Exploration Permit Fee under DENR Adm. Order No. 57	50.00/ha./year
A.7.	Letter request for certification (Legal)	40.00
A.8.	Docketing Charges	
	A.8.a. For filing a protest, adverse claim or any other opposition P.D. 1856, as amended	10.00
	A.8.b. For filing a petition or complaint, falling under category of Mines Special	200.00
	Additional per P.D. 1856, as amended	10.00
	A.8.c. For filing of counter - adverse, claim, counter-protest or counter-opposition	200.00
	Additional per P.D. 1856, as amended	10.00
	A.8.d. For filing a petition or request, for reconsideration or reinstatement of rejected or cancelled application for lease contract	200.00
	Additional per P.D. 1856, as amended	10.00
A.9.	Preparation of Appeal records	

A.9.a.	For preparation and forwarding of appeal records	100.00
	Additional per P.D. 1856, as amended	10.00
A.10.	Financial and/or Technical Assistance Agreement (FTAA)	
A.10.a.	Filing fee, processing fee P.D. 1856 or Phil. currency equivalent	\$ 500.00 -
A.10.b.	Occupation fee	
	Non-reservation	10.00/ha./year
	Reservation	100.00/ha./year
A.10.c.	Regulatory fee for exploration	
	Onshore	10.00/has./year (For first year plus =P5.00 yearly increment for succeeding years)
	Offshore	50.00/has./year
A.10.d.	Registration fee	100.00/FTAA
	P.D.1856, as amended, for registration fee	10.00
B.	Processing of Application for Survey Order, Verification of Survey Returns and Field Verification/Investigation of Mineral Production Sharing Agreement (MPSA) and other Mineral Lands Surveys	
B.1.	Application for Survey Order	
B.1.a.	Processing Fee - =P50.00/block or 81 hectares, plus =P20.00 for the succeeding blocks or a fraction thereof.	

B.1.b. Projection Fee - =P100.00 for the first 100 hectares, plus
P=20.00 for the succeeding 100 hectares or a fraction thereof.

B.1.c. Filing Fee - =P30.00

B.1.d. P.D. 200 - =P10.00

B.2. Verification of Survey Returns

B.2.a. =P200.00 per claim/application, plus =P4.00 per prescribed
set of original and duplicate computation sheets of not more
than 15 stations per sheet.

B.2.b. For resubmitted (correction) and/or additional survey returns
with fieldnoted and/or computation, =P4.00 per new set of
original and duplicate prescribed computation sheets of not
more than 15 stations per sheet; Provided, that the minimum
charges shall be =P250.00 for the first resubmittal, plus
=P250.00 for every subsequent resubmittal.

B.3. For field verification/investigation of mining conflicts.

B.3.a. Boundary survey of MPSA application or other mineral lands
survey, =P1,000.00 per man per day shall be charged, provided
that the minimum charge is =P10,000.00.

B.3.b. In addition to the above charges, the applicant or interested
party shall pay for the transportation of bureau personnel from
official station to the area and return and other incidental
expenses incurred therein.

C. MINING INVESTIGATION AND VERIFICATION FEES/CHARGES
AND OTHER SERVICES

C.1. Valuation of Mining Claims 500.00/man/day
provided that the min.
charge is =P3,000.00

C.2. Investigation of conflicts,
renewal or extension of mining

	lease, permit or license	500.00/man/day provided that the min. charge is =P3,000.00
C.3.	Verification of ore stockfile and umpiring of ore shipments	500.00/man/day provided that the min. charge is =P3,000.00
C.4.	Verification of exploration work done by permittees within gov't. reservations	500.00/man/day provided that the min. charge is =P3,000.00
C.5.	Verification of explosives magazines and blasting schemes	500.00/man/day provided that the min. charge is =P3,000.00
C.6.	Acquisition of small scale mining permit (SSMP) within mineral reservations.	
	C.6.a. Filing of application	500.00/application
	C.6.b. Processing of application	100.00/hectare/ calendar year
C.7.	Registration/Licensing of securities as referred by the Securities and Exchange Commission	1,500.00
C.8.	Rock Mechanics Laboratory Services	
	C.8.a. Unconfined comprehensive (rock ore) Without Strain Measurements	175.00
	With Strain Measurements	300.00
	C.8.b. Discontinuity shear strength (Rock Cores or chucks of size Nx or 6 cm x 6 cm)	500.00

C.8.c.	Triaxial	
	Nx	1,000.00
	Ax	1,000.00
C.8.d.	Tensile (Brazilian)	100.00
C.8.e.	Cutting charges (per square Decimeter)	50.00
C.9.	Processing of Applications:	
C.9.a.	License to Possess Explosives Purchaser's	200.00
C.9.b.	Amendment to license to possess explosives purchaser's	150.00
C.9.c.	Purchase/Transfer/Import explosives	75.00
C.9.d.	Foreman's (Blaster's) license	200.00
C.9.e.	Temporary safety inspector's permit (including renewal)	100.00
C.9.f.	Temporary safety engineer's permit (including renewal)	150.00
C.9.g.	Permanent safety inspector's permit (including renewal)	150.00
C.9.h.	Permanent safety engineer's permit (including renewal)	200.00
C.9.i.	Alien's local employment	300.00
C.9.j.	Electrical Wiring Installation	100.00
C.9.k.	Machinery Installation	100.00
C.9.l.	Mine, Quarry, and Mill Permits	150.00

In addition to the charges under items C.1 to C.5 the applicant or interested party shall pay for transportation of Bureau personnel from official station to the area and return, as well as the expenses for freight, labor, materials, analysis of sample and other requirements that may be needed in the preparation of the report.

D. Lease of Drilling Equipment

D.1. Schedule of Rent for lease of drill machines, pumps and drilling accessories enumerated below, the lessee shall pay monthly rental fee to the DENR, as follows:

D.1.a. Drilling Machine

D.1.a.1.	X-ray Drill	2,500.00
D.1.a.2.	Longyear Model "24" Wireline Drill	5,800.00
D.1.a.3.	Longyear Model "24" Conventional Drill	4,800.00
D.1.a.4.	Longyear Model "34" Wireline Drill	7,800.00
D.1.a.5.	Longyear Model "34" Conventional Drill	6,500.00
D.1.a.6.	Longyear Model "38" Wireline Drill with Automatic Chuck	8,500.00
D.1.a.7.	Longyear Model "44" Wireline Drill with Automatic Chuck	9,500.00
D.1.a.8.	Boyles Model "17" Wireline Drill	8,800.00

D.1.b. Drill Pumps

D.1.b.1.	Longyear Model 315 Pump	800.00
D.1.b.2.	Longyear Model 535 Pump	3,200.00
D.1.b.3.	Longyear Model 520 Pump	2,600.00

D.1.c. Drill

D.1.c.1.	One (1) pc. AQ Rod, 10 ft.	67.00
D.1.c.2.	One (1) pc. BQ Rod, 10 ft.	80.00
D.1.c.3.	One (1) pc. NQ Rod, 10 ft.	95.00

D.1.c.4.	One (1) pc. HQ Rod, 10 ft.	129.00
D.1.c.5.	One (1) pc. AW Rod, 10 ft.	76.00
D.1.c.6.	One (1) pc. BW Rod, 10 ft.	115.00
D.1.c.7.	One (1) pc. NW Rod, 10 ft.	131.00
D.1.c.8.	One (1) pc. HW Rod, 10 ft.	134.00
D.1.c.9.	One (1) pc. EWL Rod, 10 ft.	60.00
D.1.c.10.	One (1) pc. XRT Rod, 10 ft.	50.00

D.1.d. Casings

D.1.d.1.	One (1) pc. AW Casing, 10 ft.	36.00
D.1.d.2.	One (1) pc. BW Casing, 10 ft.	79.00
D.1.d.3.	One (1) pc. NW Casing, 10 ft.	94.00
D.1.d.4.	One (1) pc. HW Casing, 10 ft.	130.00
D.1.d.5.	One (1) pc. EWL Casing, 10 ft.	60.00
D.1.d.6.	One (1) pc. RW Casing, 10 ft.	60.00

D.1.e. Miscellaneous Accessories

D.1.e.1.	One (1) set Triped Sheave Wheel, 24"0 with clevis and bolt	868.00
D.1.e.2.	One (1) set Triped Sheave Wheel, 18"0 with clevis and bolt	605.00
D.1.e.3.	One (1) pc. Heavy Duty Water Swivel Assy. with lifting hail	338.00
D.1.e.4.	One (1) pc. lifting Plug with rod box adapter	125.00
D.1.e.5.	One (1) pc. Snatch Block 6"0	67.00
D.1.e.6.	One (1) set BX Casing Clamp	136.00
D.1.e.7.	One (1) set NX Casing Clamp	152.00
D.1.e.8.	One (1) set HQ Safety Foot Clamp Assy. complete with clamp jaws	388.00

D.2. Bond

To guarantee the faithful compliance with the terms and conditions of the lease, and to answer for any loss and/or damaged of the equipment during the term of the lease, the lessee shall file with the Mines and Geosciences Bureau, a bond which may either be in cash or with a surety satisfactory to the Director the amount of which shall be, as follows:

- =P200,000.00 - For x-ray diamond drill, pump and accessories
- =P450,000.00 - For Longyear Model 24 drill (conventional) pump and accessories
- =P500,000.00 - For Longyear Model 24 wireline drill pump and accessories
- =P700,000.00 - For Longyear Model 34 drill machine (conventional) pump and accessories
- =P750,000.00 - For Longyear Model 34 wireline drill, pump and accessories
- =P900,000.00 - For Longyear Model 38 drill (automatic chuck, wireline) pump and accessories
- =P1,000,000.00 - For Longyear Model 44 drill (automatic chuck, wireline) pump and accessories
- =P 90,000.00 - For additional Longyear 535 pump
- =P 75,000.00 - For additional Longyear 520 RQ pump
- =P 20,000.00 - For additional Longyear 315 RQ pump

D.3. Cash Deposits

The lessee shall replace and/or repair all parts rendered unusable thru breakage, loss or abnormal wear during the term of the lease. All parts missing at the time the equipment is returned shall be replaced within one month from the time such equipment are returned. For this purpose, the lessee shall make the cash deposit at the rates specified as follows:

- =P 15,000.00 - For x-ray diamond drill, pump and accessories

- =P 30,000.00 - For Longyear Model 24 drill
(conventional) pump and accessories
- =P 35,000.00 - For Longyear Model 24 wireline
drill pump and accessories
- =P 40,000.00 - For Longyear Model 34 drill machine
(conventional) pump and accessories
- =P 45,000.00 - For Longyear Model 34 wireline
drill, pump and accessories
- =P 55,000.00 - For Longyear Model 34 drill
(automatic chuck, wireline) pump
and accessories
- =P 65,000.00 - For Longyear Model 44 drill
(automatic chuck, wireline) pump
and accessories
- =P 8,000.00 - For additional Longyear 535 pump
- =P 6,000.00 - For additional Longyear 520 RQ pump
- =P 4,000.00 - For additional Longyear 315 RQ pump
- =P 20,000.00 - For Demobilization of drilling
equipment and accessories

E. PETROLOGICAL, MINERALOGICAL , GEOCHRONOLOGICAL AND OTHER SERVICES

E.1. MEGASCOPIC LABORATORY FEES/CHARGES

- E.1.a. Identification of Rocks, minerals
and ores (including textural, des-
cription, mineral composition, rock
name, used and recommendation),
per sample 40.00
- E.1.b. Qualitative Chemical Analysis

E.1.b.1. Staining test; per mineral
per sample 50.00

E.1.b.2. Microchemical test; per mineral
per sample 50.00

E.2. PETROGRAPHY LABORATORY

E.2.a. Sample Preparation

E.2.a.1. Preparation of thin section; per sample

E.2.a.1.1. Rock and mineral
samples 150.00

E.2.a.1.2. Grain mounts 150.00

E.2.a.1.3. Mounted cutting/
ditch samples 200.00

E.2.a.2. Preparation of polished section; per sample

E.2.a.2.1. Unmounted rock and
mineral samples 150.00

E.2.a.2.2. Mounted rock and
mineral samples 200.00

E.2.a.3. Preparation of polished thin section, per sample

E.2.a.3.1. Rock and mineral
samples 200.00

E.2.a.3.2. Grain mounts 200.00

E.2.a.3.3. Mounted cutting
ditch sample 260.00

E.2.a.4. Preparation of doubly polished
thin section,/wafer, per sample 300.00

E.2.a.5. Cutting and polishing of rock slabs, per
square decimeter or fraction thereof -

E.2.a.5.1.	For soft rock like marble, limestone, serpentinite or other rock softer than marble	
	- cutting only	70.00
	- polishing only	80.00
E.2.a.5.2.	For rock harder than marble	
	- cutting only	90.00
	- polishing only	110.00
E.2.a.6.	Drying, Crushing, Grinding and Sieving; per 500 grams or a fraction thereof -	
E.2.a.6.1.	Drying oven	10.00
E.2.a.6.2.	Crushing, jaw crusher	30.00
E.2.a.6.3.	Grinding, vibrating disc mill	30.00
E.2.a.6.4.	Sieving/screconing; per mesh size	
	Coarse (14 - 150 mesh)	
	dry sample	20.00
	wet sample	30.00
	Fines (170 - 400 mesh)	
	dry sample	30.00
	wet sample	40.00
E.2.a.6.5.	Splitting, Jones splitter	10.00
E.2.a.7.	Specific Gravity Determination	70.00
E.2.b.	Microscopic Analysis	
E.2.b.1.	Qualitative analysis; per sample (including rock name, textural description, mineral composition also paragenesis and environment of deposition if discernible)	
E.2.b.1.1.	Standard Analysis	250.00
E.2.b.1.2.	Rock names and mineral composition only	150.00

E.2.b.2. Qualitative Analysis; per sample

E.2.b.2.1.	Mineral count; per mineral per sample	60.00
E.2.b.2.2.	Grain size determination	80.00
E.2.b.2.3.	Micro hardness; per mineral	100.00
E.2.b.2.4.	Refractive Index	90.00

E.2.c. Fluid Inclusion

E.2.c.1.	Sample Preparation	100.00
E.2.c.2.	Fluid Inclusion petrography (including abundance size, shape, nature of inclusion, etc.)	250.00
E.2.c.3.	Temperature determinations; per inclusion Homogenization	
	Runs 30 - 300 C	50.00
	300 - 500 C	70.00
	above - 500 C	100.00
	Determination of salinity (by salt dissolution)	20.00
	Freezing Runs (exclusive of liquid nitrogen)	
	Determination of freezing temperature	250.00
	Determination of salinity	20.00

E.2.d.	Photomicrography; per exposure (service fee only, exclusive of film development and printing costs)	15.00
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E.3. PALEONTOLOGY GEOCHRONOLOGY LABORATORY

E.3.a. Sample Preparation

E.3.a.1.	Rock slab/blocks (3 x 2 x 1 cm)	150.00
E.3.a.2.	Thin section; per section	150.00
E.3.a.3.	Wash sample; per 200 gms. sample	150.00

	E.3.a.4.	Oriented Fossils; per orientation	200.00
E.3.b.		Paleontological analysis or spot/random and controlled samples; per sample	
	E.3.b.1.	Picking/isolation of fossils	60.00
	E.3.b.2.	Faunal identification and listing	60.00
	E.3.b.3.	Age determination	30.00
	E.3.b.4.	Paleoecology	30.00
E.3.c.		Photomicrography	
	E.3.c.1.	Thin sections; per exposure (service fee only, exclusive of film, developing and printing costs)	15.00
	E.3.c.2.	Whole specimen; three (3) trials for three (3) positions (service fee only, exclusive of film, developing and printing costs)	150.00
E.4.		PETROCHEMISTRY LABORATORY	
	E.4.a.	Sample Preparation	
	E.4.a.1.	Drying, splitting, crushing, sieving of rock, soil and stream sediments, per sample	30.00
	E.4.b.	Analysis of rocks, ores, mineral and similar materials after partial decomposition (numbers enclosed in () indicate detection limits of chemical analysis, in ppm)	

E.4.b.1. Direct measurement by Flame Atomic Absorption Spectrometer (FAAS) after digestion of sample by aqua regia; per element Ag(1) Cd(1) Co(3) Cu(2) Fe(50) Mn(50) Ni(3) Pb(10) Zn(2) First element	45.00
Per additional element in the same solution	15.00
Mo(2)	50.00
Mo(0.4)	50.00
E.4.b.2. FAAS after hydride and vapor generation, per element As(1) Bi(0.1) Hg(0.1)	90.00
E.4.b.3. FAAS Measurement after acidic fusion Cr Li Ni	
(First element)	60.00
Second/additional element	15.00
E.4.b.4 FAAS after hydride and vapor generation per element As(1), Bi(0.1) Sb(0.1) Hg(0.1)	90.00
E.4.b.5. FAAS measurement after acidic fusion Cr, Li, Ni	
(First element)	60.00
Second/additional	15.00
E.4.b.6. Colorimetry with dithiel: W (4)	150.00
E.4.b.7. FAAS measurement after NH ₄ I fusion Sn (1)	150.00
E.4.b.8. Granite Furnace AAS (GF-AAS) after organic extraction	
Ag(0.1) Cd(0.1) Se(0.2) Te(0.1) Tl(0.1)	
First element	300.00
All five elements	600.00

E.4.c. Analysis of rocks, ores, minerals and similar materials after total decomposition. Number in () indicate detection limit or chemical analysis, in ppm

E.4.c.1.	Complete silicate analysis per element	
	SiO ₂ Al ₂ O ₃ TiO ₂	90.00 each
	Fe ₂ O ₃ T MnO	90.00 each
	MgO CaO Na ₂ O	90.00 each
	K ₂ O FeO	90.00 each
	P ₂ O ₅	150.00
	LOI	30.00
	H ₂ O-	30.00
	H ₂ O+	80.00
	all the above elements except for FeO and H ₂ O+	750.00
E.4.c.2.	FAAS measurement for minor & trace elements	
	Ag(1) Be(1) Cd(10) Co(5)	90.00 each
	Cr(5) Cu(2) Li(1) Ni(10)	90.00 each
	Mo(10) Pb(10) Rb(10) Zn(2)	90.00 each
	uBa(25) Sr(20) V(10)	90.00 each
E.4.c.3.	FAAS measurement after hydride and vapor generation per element	
	As(1) Be(0.1) Sb(0.1) Hg(0.1)	90.00 each
E.4.c.4.	FAAS after MIBK extraction per element	
	Au(0.05) Ga(0.02)	180.00 each
E.4.c.5.	GF-AAS analysis after extraction; per element;	
	Au(0.001) Pd(0.002) Te(0.1)	
	Tl(0.1) Se(0.2)	300.00 each
E.4.c.6.	GF-AAS analysis after fire assaying, per element	
	Au(0.002) Pt(0.005)	
	Pd(0.003) Rh(0.5ppb)	
	First element	800.00
	Next element in the same button	100.00

E.4.c.7.	Qualitative Analysis for Pt	200.00
E.4.d.	Chemical Analysis of ground and surface water, in mg/L	
E.4.d.1.	Major cation and anions;	
	Na K Mg Ca	70.00 each
	Cl SO ₄ HCO ₃	70.00 each
	SiO ₂	70.00 each
	F by ISE	100.00
	I by ISE	100.00
	uNO ₃ by spectro	100.00
	HPO ₄ by spectro	100.00
	CN by ISE	500.00
E.4.d.2.	Others, per element	
	pH	30.00
	Total Dissolved Solids	50.00
	Total Hardness	70.00
	Total Alkalinity	70.00
	Total Acidity	70.00
	Turbidity (NTU)	70.00
	Suspended Solids	50.00
E.4.d.3.	Trace elements after AAS measurement per element; detection limits in () in mg/L:	
	Ag(0.,02)	60.00
	Ag(0.002)	90.00
	Ag(0.0002)	120.00
	As(0.005)	90.00
	Al	70.00
	Au	180.00
	Ba	80.00
	Be	80.00
	Bi	90.00
	Cd (0.01)	80.00
	(0.002)	90.00
	(0.0002)	200.00
	Co	80.00
	Cr	80.00
	Cu	80.00
	Fe	80.00

Hg	90.00
Li	80.00
Mn	80.00
Mo (10)	80.00
(0.01)	200.00
Ni	80.00
Pb (0.2)	80.00
(0.005)	90.00
(0.0005)	200.00
Rb	80.00
Se	200.00
Sr	80.00
Te	200.00
V	80.00
Zn	80.00
Discount rate for	
15 Elements/Sample	10%
22 Elements/Sample	15%
44 Elements/Sample	30%

E.5. X-RAY LABORATORY

E.5.1. X-ray Diffractometry (XRD)

E.5.1.a.	Sample preparation, per sample	40.00
E.5.1.a.1.	Drying, Crushing, grinding (-200 to -300 mesh)	
E.5.1.a.2.	Clay Orientation:	
E.5.1.a.2.1.	Air dried	40.00
E.5.1.a.2.2.	Heated	50.00
E.5.1.a.2.3.	Glycolated	30.00
E.5.1.b.	RD Run/Interpretation per sample	300.00

E.5.2. X-ray Fluorescence Spectrometry (XRF)

E.5.2.a.	Sample prep., per sample	
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E.5.2.a.1.	Drying, Crushing, grinding (-200 to -300 mesh)	40.00
E.5.2.a.2.	Briquetting of powdered sample	20.00
E.5.2.a.3.	Glass Bead/fused sample	75.00
E.5.2.b.	XRF Run/Interpretation, per sample, Qualitative	
E.5.2.b.1.	Lik Analyzing Crystal	300.00
E.5.2.b.2.	EDDT Analyzing Crystal	350.00
R.5.2.b.3.	XRF Run/Element, Quantitative Analysis charge depends upon cost of standards	
E.5.3.	Electron Probe upon Micro-Analysis (EPMA)	
E.5.3.a.	Sample preparation, per Sample-section	
E.5.3.a.1.	Polished section	100.00
E.5.3.a.2.	Mounted Polished Section	125.00
E.5.3.a.3.	Thin Section	90.00
E.5.3.a.4.	Carbon coating	60.00
E.5.3.a.5.	Ion Coating (Charge is variable depending on the element to be used for coating and the surface area to be coated)	
E.5.3.b.	Electron microscopy/photography (high magnification aeroview, back scattered electron, secondary electron beam, characteristic x-ray), per photograph	
	per element	300.00
	per additional photograph	75.00
E.5.3.c.	Line Profile Analysis; per 10 mm line per element	350.00

E.5.3.d.	Qualitative Point Analysis; per point	300.00
E.5.3.e.	Quantitative Point Analysis; per element per point	450.00

E.6. GEMSTONE LABORATORY

E.6.a. Gemstone Preparation; per piece

E.6.a.1.	Cabochon: Oval, round, triangle, kite, square, pear & four-sided forms; with hardness up to 7 (Moh's Scale)	
	7 - 18 mm diameter	35.00
	19 - 32 mm diameter	55.00
	with hardness 7 to 9 (Moh's Scale)	
	7 - 18 mm diameter	80.00
	19 - 32 mm diameter	100.00
E.6.a.2.	Cabochon; heart, clover, star, cross, hexagon, octagon and more than four-sided forms; with hardness up to 7 (Moh's Scale)	
	7 - 18 mm diameter	55.00
	19 - 32 mm diameter	80.00
	with hardness from 7 - 9	
	7 - 18 mm diameter	100.00
	19 - 32 mm diameter	130.00
E.6.a.3.	Other shape and forms; teardrop; halfmoon, shark's tooth sphere, cone, cylindrical, and others,	

	with hardness up to 7 (Moh's Scale)	
	7 - 18 mm diameter	105.00
	19 - 32 mm diameter	160.00
E.6.a.4.	Faceting (64 index gear)	
	E.6.a.4.1. Standard brilliant cut (round)	
	with hardness up to 7	105.00
	with hardness from 7 to 9 (Moh's Scale)	235.00
	E.6.a.4.2. Brilliant oval cut or Emerald cut;	
	with hardness up to 7 (Moh's Scale)	130.00
	with hardness from 7 to 9 (Moh's Scale)	300.00
E.6.a.5.	Gemstone drilling	
	E.6.a.5.1. First 10 mm or less	15.00
	E.6.a.5.2. For every 1 mm in excess of 10 mm thereafter, or a fraction thereof	10.00
E.6.a.6.	Tumbling gemstone; per kilo minimum of three kilos)	550.00
E.7.	MINERALOGY LABORATORY	
E.7.a.	Sample Preparation	
	E.7.a.1. Drying, crushing, grinding, sieving	see E-2 - a.6
E.7.b.	Differential Thermal Analysis (DTA) per sample	300.00
E.7.c.	Physical Tests, per sample	
	E.7.c.1. Water of plasticity	50.00

E.7.c.2.	Pyrometric cone equivalent (PCE)	150.00
E.7.c.3.	Swelling test	
	E.7.c.3.1. Unactivated	40.00
	E.7.c.3.2. Activated with soda	70.00
E.7.c.4.	Oil-bleaching test	
	E.7.c.4.1. Unactivated	50.00
E.8.	ISOTOPE GEOCHRONOLOGY LABORATORY	
E.8.a.	¹⁴ C - Age determination per sample	6,000.00
E.8.b.	K-Ar Age Determination per sample	9,000.00
E.8.c.	Rb-Sr Age Determination sample (Fees and charges subject to the discretion of the Director of Mines and Geosciences Bureau upon recommendation of the PETROLAB Manager and the Chief, LGD)	
E.9.	PALEOMAGNETIC GEOCHRONOLOGY LABORATORY	
E.9.a.	Sample Preparation per sample	
	E.9.a.1. Mounting	50.00
	E.9.a.2. Coring	150.00
	E.9.a.3. Cutting	100.00
	E.9.a.4. Grinding	100.00
E.9.b.	Paleomagnetic Analysis; per sample	
	E.9.b.1. Demagnetizing: Thermal	150.00
	Alternating Field	150.00
	E.9.b.2. Magnetic Declination	100.00
	E.9.b.3. Magnetic Inclination	100.00

E.9.b.4.	Magnetic Moment	100.00
E.9.b.5.	Magnetic Susceptibility	100.00
E.9.b.6.	North, East & Vertical Component	80.00
E.9.b.7.	Bedding Correction	80.00
E.9.b.8.	Sample Orientation Correction	80.00
E.9.b.9.	Virtual Geo - magnetic Pole	120.00

E.10. SEDIMENTOLOGY LABORATORY

E.10.a.	Sample Preparation for Grain Size Analysis; per sample	see E-2 - a.6
E.10.a.1.	Drying, Crushing, Grinding, Sieving	
E.10.a.2.	Dilution and Chemical Treatment with H2O2	300.00
E.10.a.3.	Pipetting	300.00
E.10.a.4.	Determination of Weight Loss	60.00
E.10.b.	Mineral Separation per 100 gram sample or a fraction thereof	
E.10.b.1.	By Hand Magnet	70.00
E.10.b.2.	By Isodynamic Magnet Separator per mineral	100.00
E.10.b.3.	By Heavy Media Separation per mineral	300.00
E.10.c.	Analysis	
E.10.c.1.	Grain Size Analysis and Description; per sample	100.00
E.10.c.2.	Identification of Transparent and Translucent detrital minerals: per sample	
E.10.c.2.1.	As received	150.00
E.10.c.2.2.	Grain Mount	110.00
E.10.c.2.3.	Polished Thin Section	100.00

E.10.c.3.	Mineral Counting of translucent and transparent minerals; per mineral per sample	100.00
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F. FIRE ASSAYS, METALLURGICAL TESTS AND CHEMICAL ANALYSIS

F.1. FIRE OR WET ASSAY OF ROCKS, ORES, SANDS OR CONCENTRATES, BULLIONS, ALLOYS INCLUDING LIQUIDS OR SOLUTIONS

F.1.a. Fire Assays - Ore samples submitted for fire assays should weigh at least 250 grams in case of gold, silver or lead assays; and at least one (1) kilogram in case of platinum assay. Bullion drillings in excess of three (3) grams shall be returned to the owner upon request.

F.1.a.1.	Gold or Silver in ores, sand or concentrates, per sample	180.00
F.1.a.2.	Gold & Silver in ores, sands or concentrates, per sample	225.00
F.1.a.3.	Platinum in ores or alloys, per sample	500.00
F.1.a.4.	Fineness determination for gold, in bullion or alloys, per sample	300.00
F.1.a.5.	Fineness determination for silver, in bullions or alloy per sample	180.00
F.1.a.6.	Fineness determination for gold and silver in bullions, per sample	440.00
F.1.a.7.	Bullion sampling, per kilo	1.00
F.1.a.8.	Certification of weight of gold or silver bullions	55.00

F.1.b. Wet assays (Per element submit at least one (1) kilo sample)

F.1.b.1.	Aluminum	90.00
F.1.b.2.	Antimony	100.00
F.1.b.3.	Barium	90.00
F.1.b.4.	Bismuth	100.00
F.1.b.5.	Calcium	85.00
F.1.b.6.	Available Lime	85.00
F.1.b.7.	Chlorine (as Cl ⁻)	90.00
F.1.b.8.	Chromium	250.00
F.1.b.9.	Cobalt	90.00

F.1.b.10.	Copper	90.00
F.1.b.11.	Iron (Total)	85.00
F.1.b.12.	Iron (Metallic, Fe ⁰)	100.00
F.1.b.13.	Iron (Ferrous, Fe ⁺⁺)	100.00
F.1.b.14.	Iron (Ferric, Fe ⁺⁺⁺)	185.00
F.1.b.15.	Lead	90.00
F.1.b.16.	Magnesium	85.00
F.1.b.17.	Manganese	90.00
F.1.b.18.	Molybdenum	100.00
F.1.b.19.	Nickel	90.00
F.1.b.20.	Phosphorous	90.00
	P ₂ O ₅ , water soluble	90.00
	P ₂ O ₅ , citrate soluble	90.00
F.1.b.21.	Potassium (AA)	80.00
F.1.b.22.	Silica	100.00
	Free Silica	100.00
	Insoluble	60.00
F.1.b.23.	Sodium	80.00 (AA)
F.1.b.24.	Sulfur	90.00
F.1.b.25.	Tin	100.00
F.1.b.26.	Titanium	90.00
F.1.b.27.	Zinc	90.00
F.1.c. Specific Gravity		
F.1.c.1.	True	60.00
F.1.c.2.	Apparent	40.00
F.1.c.3.	Bulk Density	40.00
F.1.d.	Moisture, oven-dried (105 ⁰)	50.00
F.1.e.	Moisture, as received only	80.00
F.1.f.	Combined H ₂ O	70.00
F.1.g.	Loss on Ignition	40.00
F.1.h.	Determination by Atomic Absorption Spectrophotometry and Flame Photometry of copper, iron, lead, manganese, sodium, potassium, zinc, per element	80.00

F.2. METALLURGICAL TESTS ON ORES, MINERALS, MILL OR INDUSTRIAL PLANT BY-PRODUCTS, ETC.

(For the following ore dressing processes, a maximum of five (5) kilos may be accepted)

F.2.1.	Crushing; per kilo or fraction of one kilo	8.00
F.2.2.	Grinding; per kilo or fraction of one kilo	15.00
F.2.3.	Screening; Dry, fine sample (Range: 150 mesh to 400 mesh) Per fraction, per kg. or fraction of 1 kg.	12.00
F.2.4.	Screening; Dry, Coarse sample, (Range: 14 mesh to 100 mesh) per fraction, per kg. or fraction of 1 kg.	10.00
F.2.5.	Screening; Wet Coarse or fine sample including filtering and drying	
F.2.5.a.	Coarse Sizing (Range: 14 mesh to 100 mesh) per fraction, per kg. or fraction of 1 kg.	15.00
F.2.5.b.	Fine Sizing (Range: 50 mesh to 400 mesh) per fraction, per kg. or fraction of 1 kg.	18.00
F.2.6.	Sedimentation or elutriation including filtering and drying, per test	30.00
F.2.7.	Grindability	
F.2.7.a.	Coal	220.00
F.2.7.b.	Ore	450.00
F.2.8.	Air- Classification, per test	105.00
F.2.9.	Heavy Media Separation, per gravity	170.00
F.2.10.	Jigging, per test	170.00

F.2.11.	Tabling, per test	170.00
F.2.12.	Flotation	
F.2.12.a.	Bulk Flotation, per test	170.00
F.2.12.b.	Differential Flotation, per test	300.00
F.2.13.	Calcining, per test	250.00
F.2.14.	Roasting	
F.2.14.a.	Using electric furnace (batch), per test	260.00
F.2.14.b.	Using small rotary kiln (continuous), per test	300.00
F.2.15.	Sintering, per test	300.00
F.2.16.	Pelletizing	
F.2.16.a.	Using Pelletizing Drum (batch) per test	150.00
F.2.16.b.	Using Pelletizing Disc (continuous), per test	250.00
F.2.17.	Briquetting, per test	140.00
F.2.18.	Sponge, per test	250.00
F.2.19.	Smelting, per test	700.00
F.2.20.	Amalgamation, per test	380.00
F.2.21.	Cyanidation, per test	630.00
F.2.22.	Magnetic Separation	
F.2.22.a.	Dry, per test	100.00
F.2.22.b.	Wet, per test	125.00

F.2.23. Scrubbing, per test 40.00

F.2.24. Leaching

F.2.24.a.	Percolation leaching, per test	420.00
F.2.24.b.	Acid curing or agitation leaching, per test	290.00
F.2.24.c.	Leaching-precipitation-flotation, per test	520.00
F.2.24.d.	Pressure leaching, per test	750.00

(NOTE: Test includes determination of particle size, percent extraction, lixiviant consumption, lixiviant strength, leaching time, leach and temperature and pressure)

F.2.25. Recovery of chrysotile asbestos,
per sample, 350.00

Per Sample

(NOTE: A minimum of five (5) kilo/sample of asbestos to be split and reduced to about 1 kilo for recovery tests)

F.2.26. Tests on coal, coke, charcoal and other fuels

F.2.26.a.	Heavy media separation and washability of coal, per gravity	250.00
F.2.26.b.	Low and medium temperature carbonization, per test	215.00
F.2.26.c.	High temperature carbonization per test (above 700 ^o C)	290.00
F.2.26.d.	Drying (Determination of drying rates, per test	145.00
F.2.26.e.	Tumbler test for coke, per test	140.00
F.2.26.f.	Bulk density determination for coke	50.00
F.2.26.g.	Porosity, volume of cell spaces of lump coke	70.00
F.2.26.h.	Drop and shatter test for coal and coke	175.00
F.2.26.i.	Tumbler test for coal	160.00
F.2.26.j.	Free swelling index of coal	80.00
F.2.26.k.	Coking property	80.00

(Remarks):

1. The above charges are exclusive of the appropriate chemical, petrographic, numerographic, and microscopic analysis.
2. For a combination of batch processes, charges will be estimated according to the type of processes involved, number of tests to be conducted and cost of chemical analysis. Sample to be submitted should weigh not less than ten (10) kilos.
3. Sample to be submitted for extensive detailed tests and/or pilot plant tests should weigh not less than 100 kilos. Charges will be estimated for each case and job performed on contractual basis.

F.3. ANALYSIS OF WATER AND SOLID FUELS

F.3.A. Water analysis : (Submit a minimum of one (1) gallon)

F.3.1.a.	pH	30.00
F.3.2.b.	Dissolved Oxygen	30.00
F.3.3.c.	Bicarbonate	70.00
F.3.4.d.	Carbonate	70.00
F.3.5.e.	Total solids	50.00
F.3.6.f.	Total suspended solids	50.00
F.3.7.g.	Total dissolved solids	50.00
F.3.8.h.	Total acidity	70.00
F.3.9.i.	Total Alkalinity	70.00
F.3.10.j.	Total Hardness	70.00
F.3.11.k.	Sulfate	70.00
F.3.12.l.	Chloride	70.00
F.3.13.m.	Silica	70.00
F.3.14.o.	Iron	80.00
F.3.15.p.	Lime	70.00
F.3.16.q.	Magnesia	70.00
F.3.17.r.	Sodium	70.00
F.3.18.s.	Potassium	70.00

F.3.B. Coal and Charcoal : (Submit a minimum of one-half kilo sample)

F.3.1.a.	Proximate analysis (FC, VCM, Ash and H ₂ O)	150.00
	FC Only	150.00
	VCM Only	50.00

	Ash Only	50.00
	H ₂ O Only	50.00
F.3.2.b.	Heating Value of Coal and sulfur	350.00
F.3.3.c.	Specific Gravity	60.00
F.3.4.d.	Coal Ash analysis (The Charge per element to be determined in ash is the same as the charge in b), Section 166, However, coal ashing per 500 grams Coal Sample	100.00
F.3.5.e.	Sulfate sulfur	90.00
F.3.6.f.	Pyrite sulfur	90.00
F.3.7.g.	Organic sulfur (together with sulfate and pyritic sulfur	90.00
F.3.8.h.	Organic sulfur only	270.00

G. GEOLOGICAL INVESTIGATION AND VERIFICATION

G.1. Marine Geophysical Survey

G.1.a.	Single-Channel seismic reflection	2,000.00/km.
G.1.b.	Single-Channel seismic reflection + echo-sounder	2,500.00/km.
G.1.c.	Echo-sounder	750.00/km.
G.1.d.	Side-Scan Sonar	2,000.00/km.
G.1.e.	Side-Scan Sonar + echo-sounder	2,500.00/km.
G.1.f.	Survey vessel	30,000.00/day (actual survey)

G.1.g. RPS EXPLORER 20,000.00/day
(mobilization/
demobilization)

Note: Including Radio Positioning (Mini-ranger)
* excluding fuel and scientific staff

G.2. Marine Geological Survey

G.2.a. Piston Coring 1,000.00/sample

G.2.b. Grab Sampling 500.00/sample

G.3. For Geophysical Services

	Man/day Rate	Total Daily Rate
G.3.a. Induced polarization	1,300.00	9,100.00
G.3.b. Resistivity survey	1,300.00	9,100.00
G.3.c. Self Potential		
G.3.c.1. Vertical loop	1,300.00	9,100.00
G.3.c.2. Potable Soil	1,300.00	9,100.00
G.3.d. Seismic Surveys		
G.3.d.1. 12 - channel	2,000.00	12,000.00
G.3.d.2. 12 - channel	2,000.00	12,000.00
G.3.e. Magnetics		
G.3.e.1. Precision Type	1,300.00	8,000.00
G.3.e.2. Fluxgate	1,300.00	8,000.00

In addition to the charges under item 3, the applicant or interested party shall pay for transportation of Bureau personnel from official station to the area and return as well as the expenses for freight, labor, materials and analysis of the samples.

H. CERTIFICATION OF DOCUMENTS

H.1. For each certificate of correctness 10.00

H.2.	Letter Certification	20.00
I. FOR PUBLICATION		
I.1.	Information Circular	
	Remote Sensing and satellite Surveying by Alfredo Magpantay, 1978, (5 pp.)	10.00
	Feldspar in the Philippines by Amable J. Cruz, 1978, (33 pp.)	30.00
	Gypsum in the Philippines by Amable J. Cruz, 1981, (22 pp.)	20.00
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	Report on the Ground Truth Geologic Date Gathering in Nueva Ecija, Ilocos Norte and vicinity for the Lands at Imagery Interpretation of the area by P.D. Cabrera, july 1981, (9 pp. map)	10.00
	Gravimetric Determination of zinc by B.L. Trinidad and Maria Luz Bihis, March 1982 (11 pp.)	15.00
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Geology and Mineral Resources of Abra Province, Philippine Bureau of Mines, April 1976 (14 pp. maps)	15.00
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Zambales Province, by Map and Mineral Resources Compilation Team, June 1979, (101 pp. maps)	70.00
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Analytical distillation of Coal Tar, by R.M. Lozano, 9 pp. 20.00

Mine water audit by Maria L. Bihis and Paulina Quiambao, 19 pp. 25.00

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Other Publication

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- II. All other or rules and regulations or parts thereof, which are in conflict or conflict or inconsistent with any of the provisions of this Order are hereby repealed or modified accordingly.
- III. This order shall take effect fifteen (15) days after its publication in a newspaper of general circulation.

ANGEL C. ALCALA
Secretary