CONGRATULATIONS!

Mines and Geosciences Bureau Regional Office No. 1

BS EN ISO 9001:2015 Quality Management System
BS EN ISO 14001:2004 Environmental Management System
BS CHSAS 18001:2007 Health & Safety Management System

certified firm

MID-YEAR REPORT 2018

www.region1.mgb.gov.ph
MANDATE, MISSION AND VISION

MANDATE

The Mines and Geosciences Bureau is the primary government agency under Department of Environment and Natural Resources (DENR) responsible for the conservation, management, development and proper use of the country’s mineral resources including those in reservations and lands of public domain. In pursuing the mandate, it envisions a mining and 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 the government’s program on revitalizing the minerals industry and contribution to the general economic well-being of the nation.

MISSION

The MGB, 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 geo-scientific technologies.

VISION

MGB 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 Bureau serving the public and nation with scientific reliability.
FUNCTIONAL STATEMENT
MINES AND GEOSCIENCES BUREAU REGIONAL OFFICE NO. 1

OFFICE OF THE REGIONAL DIRECTOR
The Office of Regional Director shall implement the pertinent laws, policies, rules and regulations and programs; exercise the management functions of planning, organizing, directing and controlling; undertake Information, Education and Communication campaign; and perform such other duties and functions as may be provided by law or delegated by the Director.

FINANCE AND ADMINISTRATIVE DIVISION
The Finance and Administrative Division (FAD) shall provide general administrative services pertaining to human and financial resources and property and records management.

GEOSCIENCES DIVISION
The Geosciences Division (GSD) shall undertake land and marine geoscientific surveys including mineral exploration, geological mapping, geohazard assessment, groundwater resource exploration and vulnerability assessment, and engineering geological and geoenvironmental studies and provide geological laboratory and information services.

MINE MANAGEMENT DIVISION
The Mine Management Division (MMD) shall undertake initial evaluation of mining and mining-related applications, monitoring of the disposition and utilization of mineral lands and resources, and survey of mineral lands.

MINE SAFETY, ENVIRONMENT AND SOCIAL DEVELOPMENT DIVISION
The Mine Safety, Environment and Social Development Division (MSESDD) shall conduct the evaluation and monitoring of implementation of programs and investigate incidents/complaints on mine safety and health, environmental management and social development.
We, at the Mines and Geosciences Bureau Region 1 want to ensure sustainability not just for the present but most importantly for the future generations. We strongly support our Environmental Secretary Roy A. Cimatu in strengthening environmental, social and economic reforms in the mining sector.

Therefore, this 2018, we have been constantly conducting activities and events for our intensified environmental protection and conservation. Early this year, Sec. Cimatu has announced DENR’s priority programs which are geared towards the attainment of clean air, clean water, solid waste management, geo-hazard, groundwater assessment and responsible mining, forest and watershed management, intensified forest protection and anti-illegal logging, enhanced biodiversity conservation, scaling up of coastal and marine ecosystems, improved land administration and management and coastal clean-up.

And to strengthen the enforcement of mining and environmental laws in the community and provincial level, MGB I deployed four (4) personnel to the Provincial Environment and Natural Resources Offices in the Ilocos Region. The said personnel shall be the bureau’s counterpart on mining and geological concerns in the community and provincial offices of the DENR. Further, the public shall have easy access to the bureau’s frontline services to sustain efforts towards responsible mining and disaster-resilient communities.
We have also supported *Tayo ang Kalikasan* which is inclined with the bureau’s vision of a minerals industry that is not only prosperous but also socially, economically and environmentally sustainable, and progressively assisting in the government’s program on poverty alleviation and contributing to the general economic well-being of the nation. This program is a citizen’s movement towards environmental stewardship and sustainable development, engaging the citizenry’s active participation in environmental protection and conservation.

The year is not yet over. Much has still to be accomplished and attained. Yet, we are positive on making progress and bringing good news. And most especially, we can overcome challenges.

We are pro-people, pro-development and pro-environment mining.

CARLOS A. TAYAG
OIC, Regional Director
The Region has fully complied with all the requirements of the conditions of Good Governance by posting the Transparency Seal on the MGB-I Regional Website which consists of the mandate and function of the Office, List of personnel, approved Work and Financial Plan, Annual Procurement Plan and PHILGEPS certification; the Citizens’ Charter and each divisions SECSIME were also posted in a conspicuous area in the office;

The Human Resource and Management Service maintains records of 37 permanent, 5 Co-Terminus with the Incumbent (CTI) and 25 Contract of Services.

Various trainings were coordinated, attended/ conducted for bettering the performance, gaining more knowledge of individuals and sharpening their skills.

All plantilla personnel submitted their respective Statement of Assets, Liabilities and Networth (SALN) for CY 2017 in compliance to Section 8 of Republic Act No. 6713 otherwise known as “Code of Conduct and Ethical Standards for Public Officials and Employees”, updated Personal Data Sheet (PDS), Individual Performance Commitments Review (IPCR), among other as required by the Civil Service Commission.
The Department of Budget and Management (DBM), through the General Appropriations Act (GAA) has released P51,343,000.00 budget for CY 2018, P28,109,000.00 for Personnel Services (PS) and P23,234,000.00 for Maintenance and Other Operating Expenses (MOOE). Personnel Services (PS) has P1,177,000.00 for Administration of Personnel Benefit (Terminal Leave Benefit) of Ms. Natividad Fabella, Mining Claims Examiner III who will be retiring on December 25, 2018. Additional budget for Other Professional Services amounting P513,108.36 Maintenance and Other Operating Expenses (MOOE) was released by MGB Central Office, for the Integration of MGB Programs and staff to PENROs and CENROs. An allotment of P1,000,000.00 budget was granted for the conduct of National Mineral Reservation Program under SAGF Fund338. Thus, the total allotment as of June 30, 2018 amounted to P52,856,108.36.

As of June 30, 2018, Budget Utilization Rate (BUR 1) (Obligation/Allotment) for MOOE have reached 48%, Obligation of P24,784,613.87. Budget Utilization Rate (BUR 2) (Disbursement/Obligation) reached 97%, Disbursement of P24,426,633.90. A new Budget Utilization Rate (BUR 3) (Disbursement/Cash Allocation) to measure financial performance of an operating unit was introduced by DBM. As of June 30, 2018, Budget Utilization Rate (BUR 3) (Disbursement/Cash Allocation) reached 100%, Cash Allocation of P24,429,063.39 for the 1st semester.

All advances to special disbursing officers and employees were liquidated and aging of cash advances was verified by Commission on Audit (COA).

An orientation on the Proper Liquidation of Cash Advances of Special Disbursing Officers (SDOs) was conducted by the Mines and Geosciences
Bureau I-Finance and Administrative Division last May 15, 2018 at the Max’s Restaurant in San Fernando City, La Union. This aimed to properly guide the SDOs on the processes and emphasize on the importance of accomplishing timely liquidation reports equipped with the required supporting documents and attachments. This is in line with the Commission on Audit rule that cash advances must be liquidated within the prescribed periods depending upon the nature and purpose of the particular cash advance, as provided under COA Circular No. 97-002 dated February 10, 1997, restating with amendments (the rules and regulations on the granting, utilization and liquidation of cash advances).

Also, it served as a venue to achieve improvements in accountability and government performance by combining transparency with participation and collaboration, through partnerships to lay down the true cost and benefit of government activities.
Budget and Financial Accountability Reports (BFARs) were submitted accurately and timely to MGB Central Office, COA and DBM. Budget Proposals, Cash Programs, Monthly and Quarterly Financial Reports were all prepared and submitted. Likewise, activities such as processing of vouchers and payrolls, reports preparation, and other related financial matters were 100% accomplished.

PLANNING MANAGEMENT SERVICES

Monthly Physical Accomplishment Reports, Performance Information Report and Fund Utilization Reports were regularly submitted to MGB Central Office.

To improve the reporting of accomplishments of every Division as well as records filing and keeping, planning coordinators were designated in the respective divisions to effectively coordinate with the planning officer for the timely submission of reports.

Periodic assessment of accomplishments vis-à-vis target is conducted and timely feedbacks are provided to the division concern for immediate and appropriate course of action.
On May 28 to June 1, 2018, Mr. Ralph Vasquez and Ms. Marietta Tan of MGB-CO Planning, Policy International Affairs Division (PPIAD) conducted the validation of the 2017 accomplishments. The objective of the activity is to validate the reported 2017 accomplishments; to determine actions taken on the recommendations of the validation of 2016 accomplishments; and to determine other concerns in the implementation of plans and programs.

Presentation of the Results of Validation.
001: NATURAL RESOURCES SUSTAINABLY MANAGED - PROGRAM 1: MINERAL RESOURCES ENFORCEMENT AND REGULATORY PROGRAM

MINERAL INVESTMENT PROMOTION PROGRAM

Issuance of Mining Permits/Contracts

The Mining Tenement Evaluation Section (MTES) issued four (4) Industrial Sand and Gravel (ISAG) Permits, a total of eighty (80) Ore Transport Permits, sixty-five (65) Mineral Ore Export Permits (MOEP), and two (2) Certificates of Accreditation.

Four (4) Certificate of Environmental Management and Community Relations Record (CEMCRR) covering the application for renewal of MPP of Northwest Luzon Mining Corporation, expansion of operations of Northern Cement Corporation and ISAG renewal applications of San Hai Aggregates and Construction Corporation and Felix P. Sanchez together with one (1) Certificate of Exemption of the new ISAG application of Mark Bradley A. Salcedo were issued.

Approval and issuance of Industrial Sand and Gravel Permits (ISAG)
Use it or Lose It Policy

In compliance to the Department Memorandum Order No. 2010-04 “Reforms in the Department Mining Tenement System”, which directs the Bureau to expedite the grant of mining contracts and permits, cleanse and process all pending mining applications and strengthen all compliance requirements, the Office have issued four (4) Industrial Sand and Gravel Permit.

<table>
<thead>
<tr>
<th>Tenement ID</th>
<th>Tenement Holder</th>
<th>Date Approved</th>
</tr>
</thead>
<tbody>
<tr>
<td>92-002 (IPA-20)</td>
<td>Conrado V. Ignacio</td>
<td>January 23, 2018</td>
</tr>
<tr>
<td>018-002(IPA000332)</td>
<td>Matthew O. Liis</td>
<td>February 6, 2018</td>
</tr>
<tr>
<td>96-001 (IPA-07)</td>
<td>North Point Aggregates, Inc.</td>
<td>May 7, 2018</td>
</tr>
<tr>
<td>IP 92-001 (IPA-19)</td>
<td>Benito Y. Co</td>
<td>June 20, 2018</td>
</tr>
</tbody>
</table>

Field Validation on the application for Mineral Ore Export Permit (MOEP)
Review of the Performance of Existing Mining Operations per EO No. 79

Approval of SHES Program

a) Environmental Protection and Enhancement Program (EPEP)

Four (4) Environmental Protection and Enhancement Program (EPEP) were approved.

The approved EPEPs are for the ISAG permit renewal applications of William K. Dy, Efhrain B. Balitao, Ignacio B. Balitao and Delia B. Dizon

b) Annual Environmental Protection and Enhancement Program/Care and Maintenance Program (AEPEP/CMP)

The 2018 Annual Environmental Protection and Enhancement Programs (AEPEP) of thirty five (35) contractors/permit holders involving seven (7) MPSA contracts and twenty eight (28) ISAG permits including one (1) Care and Maintenance Program were approved for the 1st Semester 2018.

c) Social Management and Development Program/Community Development Program (SDMP/CDP)

The Section had evaluated and issued Certificate of Approval (CA) on five (5) SDMP’s and two (2) CDP’s for a total of seven (7) Certificates of Approvals for the period against the target of two (2) CA’s for 350% accomplishments. Very high accomplishment was recorded because some of the Programs were evaluated last year but undergone some rectification/revision and approved only during the period in review.
d) **Annual Social Development and Management Program (ASDMP) evaluation and issuance of certificate of approval.**

The Section had evaluated and issued Certificate of Approval (CA) on thirty eight (38) ASDMP’s for the period against the target of eighteen (18) CA’s for 211% accomplishments. Very high accomplishment was recorded because seventeen programs by Permit Holders operated by Omnico Natural Resources, Inc. (ONRI) and other newly approved mining permits which are not included in the universe had their ASDMP’s approved during the period in review.

e) **Annual Safety and Health Program (ASHP)**

Thirty nine (39) ASHP’s were evaluated and approved for the 1st semester.

f) **Environmental Work Program endorsed to MMD (EWP)**

One (1) EnWP was endorsed to Mine Management Division for the renewal of the Exploration Period of Cunickel Mining and Industrial Corporation.

g) **National Greening Project**

Two (2) Consolidated Quarterly National Greening Program (NGP) Reports were submitted for the period in review. The said reports belonged to Holcim Phils, Inc., Northern Cement Corporation and Heirs of Elias E. Olegario which are holders of Mineral Production Sharing Agreement Contracts located in Bacnotan, La Union and Agno, Pangasinan, Sison, Pangasinan and Mangatarem, Pangasinan, respectively.
The Provincial Mining Regulatory Board conducts regular meetings per province. The four (4) provinces, Ilocos Norte, Ilocos Sur, La Union and Pangasinan imparted their concerns and issues to the board for deliberation and action. The Provincial Mining Regulatory Board among others, accept, process and evaluate applications and determine administrative charges and fees for Quarry, Sand and Gravel, Guano, Gemstone Gathering and Small-Scale Mining Permits.
MINING INDUSTRY AND DEVELOPMENT PROGRAM

Monitoring/Audit of Mining Permits/Contracts/Leases/Claims/JOAs (including those within Mineral Reservations) as to compliance with the Terms and Conditions/Requirements and implementation of approved Work Program/Safety, Health, Environmental and Social Development Programs

a) Monitoring of Work Program

The Monitoring and Technical Services Section (MTSS) is primarily responsible for validation of mineral reserves of mining operations, mineral statistical analysis and monitoring of the disposition and utilization of mineral lands and resources. It aims to monitor existing contracts and permits once a year to ensure full compliance of the contractors, permittees and permit holder to the terms and conditions of the approved mining contracts/permits, and other applicable mining laws, rules and regulations. Compliance monitoring also emphasizes on the implementation of the approved work program, timely submission of reportorial requirements, attendance to fiscal obligations and even employment equity. For the period in review, MTSS has audited a total of sixteen (16) contracts and permits. These include eight (8) MPSA Contracts, one (1) FTAA Contract, one (1) Mineral Processing Permit, and six (6) Industrial Sand and Gravel Permits.
One of the parameters being monitored is the implementation of the work program particularly the mode of quarrying within the permit area. As seen during the monitoring of the industrial sand and gravel operation of R. J. Flores Construction along Naguillian River, they are undertaking systematic quarrying wherein extraction starts upstream and moving downstream.

Aside from quarrying, the other half of an industrial sand and gravel operation is the processing of the extracted river aggregate materials from the permit area. It was noted during monitoring of the crushing operation of Engr. Felix P. Sanchez at Barangay Acao, Bauang, La Union that he is compliant to the work program as far as the establishment of a processing plant is concerned.
b) **Integrated-Safety, Health, Environmental and Social Development Program Monitoring**

For the First Semester of 2018, a total of twenty seven (27) contracts/mining permits were monitored relative to the physical and financial compliance of their approved Safety and Health Program (SHP), Environmental Enhancement and Protection Program/Annual Environmental Enhancement and Protection Program (EPEP/AEPEP) and Social Development Management Program/Annual Social Development and Management Program (SDMP/ASDMP).

![Image 1](image1)

*The active limestone quarry area of Heirs of Elias Olegario*

![Image 2](image2)

*Bench No. 2 of the zeolite quarry of the Holcim Mining And Dev’t Corporation.*
The monitored areas involved one (1) Financial and/or Technical Assistance Agreement, thirteen (13) Mineral Production Sharing Agreement, one (1) Mineral Processing Permit and eleven (11) Industrial Sand and Gravel Permit.

c) Monitoring of Mining Forest Program

One (1) Consolidated Semi-Annual Mining Forest Program (MFP) Report was submitted for the period in review. The said report belonged to Holcim Phils, Inc., Northern Cement Corporation and Heirs of Elias E. Olegario which are holders of Mineral Production Sharing Agreement Contracts located in Bacnotan, La Union and Agno, Pangasinan, Sison, Pangasinan and Mangatarem, Pangasinan, respectively.

Monitoring on the implementation of Social Development and Management Programs of Mining Companies
Nursery and reforestation area of HMDC located in Bacnotan, La Union and Agno, Pangasinan, respectively.
Occupational Safety and Health Inspection

Occupational Safety and Health Inspection (OSHI) is divided into two (2) activities the quarterly conduct of OSHI for large scale mining companies (HMDC comprising of 5 MPSA areas, NCC and HEEO) and the semestral conduct of OSHI in all MGB issued Permit Holders. For the 1st and 2nd quarter, the MSHS accomplished fourteen (14) and sixteen (16) OSHI, respectively.

Mechanical and Electrical Inspections and Permit Issuance

This activity is a client dependent. For the 1st semester, the MSHS conducted four (4) ME/EE inspections on mining companies that filed their intention to renew permit to operate mechanical/electrical installation namely:

Nelson C. Chan (NCC) issued with one (1) Permit to Operate Internal Combustion Engine (ICE), one (1) Permit to Operate Mechanical Equipment/Machinery Installation and one (1) Certificate of Electrical Inspection.
Naguilian Aggregates and Development Corporation (NADECO) issued with one (1) Permit to Operate Internal Combustion Engine (ICE), one (1) Permit to Operate Mechanical Equipment/Machinery Installation and two (2) Certificates of Electrical Inspection.

Destiny Mighty Rock Corporation (DMRC) issued with one (1) Permit to Operate Mechanical Equipment/Machinery Installation and one (1) Certificate of Electrical Inspection.
RJ Flores Construction (Sudipen, La Union Plant) had a pending release of one (1) Permit to Operate Mechanical Equipment/Machinery Installation and one (1) Certificate of Electrical Inspection. The pending issuance of permit and certificate is subject to submission of compliance report.
Resolution of Complaints/Cases/Conflicts

1. Complaint on the alleged Illegal mining/ Treasure Hunting at Brgy. Ora West, Bantay, Ilocos Sur;

2. Unsystematic Extraction of Sand and Gravel along Bolo River within the municipalities of Bangui, Pagudpud and Dumalneg, Ilocos Norte;

3. Alleged Small Scale Mining Operation inside MAYKAN RESTAURANT, Brgy. Bautista, Caba, La Union;

4. Alleged Illegal Beach Mining along the seashore of Brgy. Quirino, Bacnotan, La Union;
5. Complaint against Mary Ann Calica re: CSAG operations in Brgy. Baraoas Norte, Naguilian, La Union;
6. Investigation on the complaint against HBMA and Mr. Primo Mariano located at Comilias South, Cervantes, Ilocos Sur and the present situation of Libeg Bridge;


9. Alleged Illegal Mining Activity at Brgy. Amaronan, Umingan, Pangasinan
Anti-Illlegal Mining Campaign

Cease and Desist Orders issued/implemented

As a result of the field investigation made by the Office and pursuant to the provisions of the Republic Act No. 7942, otherwise known as the “Philippine Mining Act of 1995”, and its Revised Implementing Rules and Regulations, as amended; or Republic Act No. 7160, also known as the ‘Local Government Code of 1991”, fourteen (14) persons were issued Cease and Desist Order (CDO) due to their engagement in the extraction of sand, gravel and other loose and unconsolidated materials along Bolo River without necessary permit from MGB-I or from the Office of the Provincial Government of Ilocos Norte.

The sand and gravel quarrying activities along the said river system were found to be undertaken irresponsibly, unsystematically and not in accord with the concept and parameters promoting responsible mining.
### SYSTEMATIC PLAN OF EXTRACTING THE RIVER AGGREGATES WERE DISREGARDED.

### EXCAVATIONS WERE LEFT UNRESTORED.

<table>
<thead>
<tr>
<th>Name</th>
<th>Permit No.</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within the Municipality of Bangui, IN.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Castillo, Joseph</td>
<td>2017-03</td>
<td>Under Renewal</td>
</tr>
<tr>
<td>2. Castillo, Praxedes</td>
<td>2017-42</td>
<td>Under Renewal</td>
</tr>
<tr>
<td>3. Dy, Florencio (LGU-ISAG)</td>
<td>2014-08</td>
<td>Producing</td>
</tr>
<tr>
<td>4. Faylogan, Marino</td>
<td>2017-57</td>
<td>New</td>
</tr>
<tr>
<td>5. Garvida, Analiza</td>
<td>2015-46</td>
<td>Under Renewal</td>
</tr>
<tr>
<td>6. Garvida, Denton</td>
<td>2017-51</td>
<td>Under Renewal</td>
</tr>
<tr>
<td>7. Palima, Eugenia</td>
<td>2017-22</td>
<td>Under Renewal</td>
</tr>
<tr>
<td>8. Acio, Joseph</td>
<td>2018-04</td>
<td>Producing</td>
</tr>
<tr>
<td>10. Tagaoa, Rovelyn</td>
<td>2017-50</td>
<td>Under Renewal</td>
</tr>
<tr>
<td>Within the Municipality of Pagudpud, IN.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Benemerto, Rajan</td>
<td>2017-17</td>
<td>Under Renewal</td>
</tr>
<tr>
<td>2. Palma, Eugenia</td>
<td>2017-55</td>
<td>Producing</td>
</tr>
<tr>
<td>3. Uba, Edimar (LGU-ISAG)</td>
<td>2016-48</td>
<td>Producing</td>
</tr>
<tr>
<td>Within the Municipality of Dumalneg, IN.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Bacon, Estrella</td>
<td>2016-63</td>
<td>Under Renewal</td>
</tr>
</tbody>
</table>
Charges filed with the Provincial/City Prosecutors Office

1. Criminal complaints filed for violation of BP Blg. 265 and for theft of minerals pursuant to Section 103 of R.A. No. 7942 against individuals namely: **Lida B. Ayala**, Filipino, of legal age and **Mr. Francisco B. Aguinaldo**, Jr., Filipino, of legal age who are both residents address at Bgy. Magallanes, Luna, La Union in extracting / removing / performing other activities such as buying those 100 sacks of Luna pebbles (minus 5mm sizes) and 180 sacks of Luna pebbles (20-30 mm sizes) from the beach/es of Brgy. Magallanes, Luna, La Union without any permit to do so.

2. Complaints filed as to the violation of Section 103 of R.A. 7942 against **TERESITA N. SIY** and her driver **JOHNNY PASCUAL y CLAVERIA** in the extracting of minerals (500 sacks of white coralline sand) from the beaches of Burgos, Ilocos Norte and on the process of disposing the same by transporting it en route to Novaliches, Quezon City where Siy’s client is located.

**Strengthen Multi-partite monitoring system**

**MMT Operationalized**

<table>
<thead>
<tr>
<th>Multi-partite Monitoring Team</th>
<th>Date of Inspection 1st Qtr</th>
<th>Date of Inspection 2nd Qtr</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. MMT-Heirs of Elias E. Olegario</td>
<td>March 20-22, 2018</td>
<td>June 26-27, 2018</td>
</tr>
<tr>
<td>2. MMT-Holcim Philippines, Inc.</td>
<td>February 19-23, 2018</td>
<td>June 4-8, 2018</td>
</tr>
<tr>
<td>3. MMT-Pangasinan Group 3 &amp; 5</td>
<td>February 21-23, 2018</td>
<td>May 15-17, 2018</td>
</tr>
<tr>
<td>4. MMT-Pangasinan Group II</td>
<td>February 8-9, 2018</td>
<td>May 10-11, 2018</td>
</tr>
<tr>
<td>5. MMT-Pangasinan Group IV</td>
<td>February 27-28, 2018</td>
<td>May 24-25, 2018</td>
</tr>
<tr>
<td>6. MMT-ISAG La Union</td>
<td>February 27-March 2, 2018</td>
<td>June 5-6, 2018</td>
</tr>
<tr>
<td>7. MMT-ONRI</td>
<td>February 7-9, 2018</td>
<td>May 2-4, 2018</td>
</tr>
<tr>
<td>8. MMT-ISAG Ilocos Sur</td>
<td>February 13-16, 2018</td>
<td>May 8-11, 2018</td>
</tr>
<tr>
<td>9. MMT-Pangasinan Group 1 &amp; 6</td>
<td>February 6-7, 2018</td>
<td>May 3-4, 2018</td>
</tr>
<tr>
<td>10. MMT-Northern Cement Corporation</td>
<td>January 30-31/ February 1-2</td>
<td>April 17-20, 2018</td>
</tr>
</tbody>
</table>
001: NATURAL RESOURCES SUSTAINABLY MANAGED – PROGRAM 2: MINERAL RESOURCES AND GEOSCIENCES DEVELOPMENT PROGRAM

COMMUNICATION PLAN FOR MINERAL RESOURCES AND GEO SCIENCES DEVELOPMENT

Conduct of Awareness and Advocacy on Mineral Resources and Geosciences Development (MRGD)

| Dialogues with Sangguniang Panlalawigan / Bayan / Panlungsod/Barangay: |

As part of its mandate, the MGB Regional Office No. 1 continue to build productive partnerships with its counterparts from the Local Government Units. Confidence building initiatives are vigorously pursued, being aware of their role in good governance.

Moreover, the Office also duly - recognizes the role of the LGUs in promoting the rational development and utilization of the region’s mineral resources as well as in the enforcement of various Environment and Natural Resources laws, rules and regulations. Bringing - in their expertise and “clout” in the
program implementation process ensures a higher degree of success in the attainment of the desired and pre-programmed results and objectives of mineral-based initiatives within their areas of operations.

For the period under review, awareness and advocacy on mineral resources were made with the different LGUs in the region to heighten their awareness and understanding on the minerals industry.

1. LGU - Aguilar, Pangasinan.

Unsystematic and indiscriminate mineral resources utilization had prompted the Local Government of Aguilar, Pangasinan to pass an Ordinance prohibiting the extraction of sand and gravel along its major creeks and rivers. Land degradation resulting in the erosion and siltation of farmlands is another concern.

During the regular session of the Sanggunian Bayan, the following discussion points were explained and discussed for the information of the Honorable SB Members relative to the Ordinance prohibiting sand and gravel quarrying within their territorial jurisdiction, viz:

A. To prohibit sand and gravel extraction along the creeks and river systems in the municipality shall not help the problem of unsystematic and indiscriminate mineral extraction in the area. The Ordinance only increases the incidents of illegal mining activities in the area. The better option therefore is for these quarry operators operating in a “guerilla” manner to be legalized for the LGU to have a better control over them.
B. Unsystematic and indiscriminate quarrying can be properly addressed by implementing an efficient monitoring protocols. The rule of law must prevail, excepting no one. It was stressed that it is only in this manner that illegal quarrying can be curbed, and the MGB may take a greater role in empowering the local officials and residents in terms of effecting apprehension and confiscation of illegally mined, extracted, removed and disposed sand mineral resources in their area.

C. The prohibition runs counter to the constitutional provision as enunciated in the declaration of policy mandating the state to promote the exploration and rational development of the country’s mineral resources at the same promoting environmental protection and preserving options of future generations.

2. LGU – Cervantes, Ilocos Sur.

Honorable Mayor Benjamin Maggay III and the entire Sanggunian Bayan Members of the municipality were present. The discussion is focused on the opposition of the residents of the municipality to the application for exploration permit of Cordillera Exploration Company, Inc. (CExCI), the area of which covers nine (9) barangays.

Mayor Maggay informs the MGB of the following adverse impacts the application had cause to the local community, viz:

1. It has caused “division” among the local residents, thus, he urgently requests the MGB to temporarily hold the processing of said application until such time that the issue has been resolved at the local level.

2. The issue may cause disruption of the peace and order being enjoyed in the area.
3. The sentiments of the residents may be heard and given weight, letting to them to decide, considering that it is their fate and destiny that are at stake.

The MGB shares the sentiments of the Honorable Mayor, the entire membership of the Sanggunian Bayan and the people of Cervantes.

However, it was explained that the issue which concerns the settlement of the opposition raised by the Indigenous Peoples of Cervantes, Ilocos Sur is within the mandate of the National Commission on the Indigenous Peoples. The MGB is a mere “observant”.

As to the request for the temporary holding of the application, the Honorable Mayor was informed that the MGB has no legal basis to do so considering that the Philippine Mining Act of 1995 does not provide for it. The Honorable Mayor and his group was however, assured that their issues, complaints, protests and oppositions against application for Exploration Permit must have to be resolved prior to its approval.

3. LGU – Bangui, Ilocos Norte (2x)

The observations of the Honorable Secretary of the DENR on the sand and gravel quarrying/processing along Bolo River was the major point of discussion.
The LGU Officials headed by Honorable Mayor Fidel A. Cimatu was informed of the events that had transpired and which led to the issuance of Cease and Desist Orders. To date fourteen (14) Cease and Desist Orders were issued to various quarry/crushing plant operators along the said river system. The seriousness of the Honorable Secretary in protecting the river systems was echoed to the local officials.

The 2nd dialogue with Honorable Mayor Fidel A. Cimatu and the member of the Sanggunian Bayan is very engaging, informative and productive for the reason that the major focus is the preservation of the aesthetic and ecological value of the Bolo River. DENR officials led by Regional Director Reynulfo A. Juan led the discussion and provided insights on the effects of the sand and gravel quarrying in the area without due to regard to the environment thereby placing in harm’s way the lives, limbs and properties of local residents.

Among the matters discussed were:

A. The proposed Bolo River Quarry Development Plant (BRQDP);
B. The protocol for the possible lifting of the CDOs;
C. The creation of a 24/7 monitoring team;
D. The conduct of deputation seminar; 24/7 monitoring personnel;
E. The conduct of a seminar on acceptable and prescribed quarrying methodologies to promote Responsible Mining.
4. **LGU – San Fabian, Pangasinan**

The appearance of personnel from the MGB Regional Office No. I before the Members of the Sanggunian Bayan of San Fabian, Pangasinan was precipitated by the “ban” on sand and gravel quarrying in Brgy. Binday, San Fabian, Pangasinan issued by the MGB, Regional Office No. I.

A query was posed by the local officials on the following:

a. Unabated extraction of sand and gravel in the area despite the existence of the “ban”;

b. The level of coordination between the MGB and Provincial Government of Pangasinan in terms of monitoring the sand and gravel quarrying in the area;

c. The participation of the LGU in the processing, issuance and approval of sand and gravel permits, specifically in the issuance of the required Endorsement; and

d. Possible entry points of the LGU in addressing the issue on illegal mining; and

e. Sharing of the proceeds derived from the sand and gravel quarrying in the area; and

f. Status of the boundary dispute the Municipalities of San Fabian and San Jacinto.

It was clarified that there is no ban issued by the MGB. Instead a Suspension Order was issued to certain quarry operators in the area for violations to the terms and conditions of their permits.
The dialogue was attended together with DENR PENRO Raymund Gayo of the Province of Pangasinan, DENR CENRO Celso Salazar of Dagupan City, Mr. Mixon Flores of the Environment and Natural Resources Office/Natural Resources Regulatory Group of the Province of Pangasinan.

**Dialogue with other groups (Religious Groups, CSO, Academe, etc.)**

The MGB Regional Office No. I is cognizant of the role played by the civil society in the implementation of mineral – based programs and projects and in the enforcement of Environment and Natural Resources laws, rules and regulations. The need to continuously solicit their pro-active participation, unwavering support and cooperation is therefore imperative.

For the period under review, three (3) dialogues were conducted.

1. **Quarry Operators and Concerned Residents in the Municipality of Bangui, Ilocos Norte.**

   A dialogue explaining to the quarry/crushing plant operators the impacts of their respective quarry operations to the Bolo River ecosystem and to the local residents residing within the immediate vicinity of said river system was made.

   An urgent call was made requiring them to immediately rehabilitate the disturbed areas within their respective permit areas. It was emphasized that sand and gravel quarrying may only resume after the necessary rehabilitation measures had been implemented and the same had been properly validated by DENR PENRO Ilocos Norte and MGB Regional Office No. I personnel.

   The quarry/crushing plant operators agreed to the terms laid out to ensure Responsible Mining is carried out in their subsequent quarrying/crushing operations.
2. Selected College Students of Pangasinan State University.

The college students were treated to a presentation on the following:

a. Operational structure of the MGB Regional Office;

b. Programs and projects and their impacts to the target beneficiaries;

c. A profile of the minerals industry in the region and its direct contributions to local and regional and national economy;

d. Linkages and networking strategies to widen the backbone of participation of the civil society in the mineral development and utilization process.

e. Problems and opportunities faced by the industry; and initiatives aimed at making it a catalyst for economic development at the grass root level.


A dialogue was done with personnel of the National Commission on Indigenous Peoples – Ilocos Sur Province (NCIP-IS) in relation to the status of the Free and Prior Informed Consent (FPIC) being secured by Cordillera Exploration Corporation, Inc. (CExCI), of which most of the area is in the Municipality of Cervantes, Ilocos Sur.

Initially, the Local Government of Cervantes, Ilocos Sur passed a number of Resolutions expressing their opposition to the application of CExCI for Exploration Permit.

Led by Atty. Jonathan Bansigan, OIC – Regional Director of NCIP, he informed the body of the retraction of the “YES” votes of some of the affected barangays to the proposed exploration activity. And considering that the issue has become very intense and at times
resulted in the misunderstanding between and among the residents, the NCIP has decided to momentarily stop the processing of the FPIC.

The MGB for its part committed to call CExCl to a technical conference to get some information in relation to the extent and coverage of the “ground works” they are doing in the area.

MGB RI Regional Director Carlos A. Tayag stressing a point during the discussion with local officials headed by Mayor Fidel A. Cimatu regarding the stoppage of sand and gravel quarrying along the Bolo River.
A dialogue with the quarry/crushing plant operators and some of the affected residents was made to impress upon them the impact of the unsystematic and indiscriminate sand and gravel being done in the area and so with the actions and interventions being done by the DENR/MGB/EMB Regional Offices. DENR PENRO Victor Dabalos of the Province of Ilocos Norte giving an inspirational talk. Also present were Engr. Roland Fravalde, Atty. Mario S. Timario, Engr. Paula Blessie Morante, Engr. John Rhod Sonsos, the mining engineer embedded in the Province of Ilocos Norte and Engr. Darryl Sagid of EMB RI.

THE PROPOSED BOLO RIVER QUARRY DEVELOPMENT PLAN (PBRQDP) CALLS FOR:

1. THE SUBDIVISION OF THE ENTIRE STRETCH OF BOLO RIVER INTO REGULAR LOTS TO BE ALLOCATED TO ALL EXISTING PERMIT HOLDERS.
3. MGB-RI IN COORDINATION WITH DPHW SHALL DETERMINE THE LAY-OUT OF THE QUARRY LANE.
4. EMB-RI SHALL ISSUE THE CORRESPONDING ECC.
5. THE DMRB-ILOCOS NORTE SHALL FACILITATE THE PERMITTING PROCESS.
6. A MULTI-SECTORAL TEAM SHALL BE CREATED TO MONITOR THE IMPLEMENTATION.
The findings led to the issuance of CEASE AND DESIST ORDERS.
The MGB Regional Office No. I in close coordination with the Local Government Units takes a greater role in the monitoring on the level of compliance to the Cease and Desist Orders earlier issued. Non-compliance means non-lifting of the CDO.

Honorable Mayor Fidel A. Cimatu and some local officials were briefed on the proposed Bolo River Quarry Development Project, an initiative of the MGB regional Office No. I to address the issue on indiscriminate and unsystematic quarrying along the Bolo River.
Radio/TV Guestings

A total of six (6) Radio/TV Broadcast/Guesting were completed for the semester.

Generation/Publication/Dissemination of Information and IEC Materials:

MGB-1 Website [www.region1.mgb.gov.ph](http://www.region1.mgb.gov.ph) is being maintained by the Office for better and easier access of clients to the services being offered by the Office;

Ten (10) articles posted on the Website;
Two (2) IEC materials were produced, reproduced and distributed during fora, conferences, dialogues and meetings. Some were requested by walk-in clients;

Sixteen (16) Statistical Reports were prepared and submitted to MGB-Central Office;

Twelve (12) updating of tenement maps which is done on a bi-monthly basis; and

Eighteen (18) MRGS reports were prepared. These are the databases of the Mining Tenement Statistics Report, SHES Database Management, Mining Tenement Database, Mine Rehabilitation Fund Report.
Capacity Building

For MGB Personnel

1. Seminar on the Standardization Checklist for the Monitoring of Tenements, Safety, Environment and Social Development Programs;

2. 6th Mines Adjudication Board and Panel of Arbitrator’s Seminar-Workshop on Mining Conflict/Dispute Resolution;
3. 5th Mining Engineer’s Convention;

For LGUs and other stakeholders (NGAs, CSOs, etc.)

1. 17th Regional Mining Summit;

2. Orientation Seminar on the Standardization Checklist for the Monitoring of Tenements, Safety, Environment and Social Development Programs;

3. IEC on Centralized Records Systems of Various Mining Permits/Contracts issued by LGU and PMRB
For small-scale miners

1. 17th Regional Mining Summit;

National Linkages

- Linkages with NEDA
- Linkages coordinated with OCD
- Linkages coordinated with DOST (ICIEERD)
- Linkages coordinated with LGU
- Linkages coordinated with I-MINE
- Linkages coordinated with PSEM-NLC
- Linkages coordinated with ENR-SECOM
Geohazard Assessment - Identification and Mapping of Geohazards for Critical Land Areas

a) **Vulnerability and Risk Assessment (VRA) and Updating of 1:10,000 Geohazard Maps**

MGB-I is continuously undertaking the Vulnerability and Risk Assessment (VRA) and Updating of 1:10,000 Geohazard Maps in order to complete the targeted 12 municipalities for CY 2018. For the first semester, the VRA team has accomplished seven (7) municipalities, namely:

- Alcala, Pangasinan;
- Binmaley, Pangasinan;
- San Emilio, Ilocos Sur;
- Sta. Catalina, Ilocos Sur;
- San Vicente, Ilocos Sur;
- Naguillian, La Union; and
- Aringay, La Union.

This is in connection with the government’s continuous effort to mitigate the adverse effects of natural hazards; mainly floods and rain-induced landslide and to quantify the vulnerability of cities and municipalities based on their exposure to hazards. In addition, it aims to determine the extent of the possible impacts or damages of these natural hazards to the elements at risk (e.g., people and infrastructures).
The project’s main objective is to produce risk exposure maps and technical reports and to update the existing 1:10,000 scale geohazard maps. These exposure maps contain substantial information about the overall exposure of elements at risk to a specific hazard present in an area. Furthermore, the project’s final output can be used by the local, provincial and regional sector for their disaster preparedness and awareness, as well as their management, mitigation and land use plan.

In order to achieve the above-mentioned objective, specific methodologies were employed. These include gathering of spatial and demographic data from the key persons of the LGU, anecdotal accounts/ interview with the barangay officials and residents regarding the hazards present in the area and actual ground assessment. These data acquired can now generate exposure maps through GIS processing.
b) **Ground Subsidence Assessment**

The Mines and Geosciences Bureau (MGB) of the Department of Environment and Natural Resources Regional Office No. 1 (DENR Region 1) has expanded its National Geohazard Mapping and Assessment Program to include Karst Subsidence Mapping and Hazard Assessment in areas of the country that are characterized by Karst topography. Thus, during the period, March 16-26, 2018 and April 16 to May 7, 2018, Karst Subsidence Mapping and Hazard
Assessment was conducted in the Municipality of Bolinao, province of Pangasinan.

A solution sinkhole located at Purok 2 in Barangay Patar. Situated inside Costa Del Fuego Resort and within the intersection of geographic coordinates 16°18’13.5’N latitude and 119°46’47.9’E longitude. Presence of underground river channel was observed in the photo with multiple cave windows.

The main objective of the said survey and assessment is to identify and locate existing sinkholes as well as to delineate areas of possible sinkholes, in order to produce sinkhole inventory and Karst subsidence susceptibility map. It also aimed to increase awareness on sinkholes and other Karst subsidence hazard, and to issue threat advisories to LGUs and recommend possible prevention and mitigation relative to the hazard.
c) Production of Geohazard Maps

d) Geohazard IEC Materials Dissemination

IEC materials consisting of maps (120), posters (610), VCD (35), pamphlets and/or flyers (422) on “BAHA” and “GUHO” were distributed to LGUs, students and clienteles. Geohazard maps with a scale of 1:10,000 scale were uploaded in the website. Advisories were likewise re-issued to all cities and municipalities in the region.

e) Capacity Building

1. Geosciences Workshop
2. Training On Basic Safety Of Life At Sea (Solas)
3. Geovia Surpac
4. Basic And Advance Gis Mapping
5. Seminar Workshop on Strategic Planning for Marine Geological Survey and Research
f) Conduct of IEC

SEMINARS/ WORKSHOPS FOR LGUs

In order to increase awareness and provide additional technical input to the LGU regarding Risk Exposure Analysis and its importance to attain sustainable development through comprehensive land-use, development and disaster risk management planning, Information, Education and Communication Campaign for VRA project was conducted.

IEC ON VULNERABILITY RISK ASSESSMENT (VRA) MAPS

<table>
<thead>
<tr>
<th>MUNICIPALITY</th>
<th>DATE</th>
<th>NUMBER OF BARANGAYS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Vigan City, Ilocos Sur</td>
<td>April 26-28, 2018</td>
<td>39</td>
</tr>
<tr>
<td>2. Candon City, Ilocos Sur</td>
<td>April 19-21, 2018</td>
<td>42</td>
</tr>
<tr>
<td>3. Santa, Ilocos Sur</td>
<td>April 23-25, 2018</td>
<td>26</td>
</tr>
<tr>
<td>4. Urdaneta, Pangasinan</td>
<td>May 24-26, 2018</td>
<td>34</td>
</tr>
<tr>
<td>5. Villasis, Pangasinan</td>
<td>May 9-11, 2018</td>
<td>21</td>
</tr>
<tr>
<td>6. Alaminos City, Pangasinan</td>
<td>May 29-31, 2018</td>
<td>39</td>
</tr>
</tbody>
</table>
LECTURES PRESENTED

- Lecture on Geohazards last January 17-19, 2018 at Barangay Namalangan, Rizal, Sacuya, Santa Ilocos Sur as part of their Development of Mining Technology and Geosciences (DMTG) of Ms Jennifer Bantolina. (Socrates G. Gaerlan/Randie Ceasar A. Apilado);

- Ms. Vilma A. Vecino attended as Lecturer / Learning Service Provider to discuss on the topic "Geohazard Assessment Groundwater Assessment and Responsible Mining" which is scheduled on February 15, 2018 as per invitation of PENRO La Union who will be conducting a Learning Event on Environmental and Natural Resources (ENR) Concerns on February 13-15, 2018 at Puerto San Juan Resort, San Juan, La Union;

- Ms. Vilma A. Vecino attended as lecturer/ speaker re: “Understanding Geological Hazards and Understanding Landslides and Subsidence Hazards” on the Two-day DRRM Course for Cooperative Sector for the Province of Ilocos Norte held at Rivermount Hotel and Resort, Brgy. 18, San Isidro, Sarrat, Ilocos Norte last February 22-23, 2018;
• Ms. Vilma A. Vecino attended as lecturer/speaker re: “Understanding Geohazards” and “Geohazard Map Reading” and “Rain Induced Landslides” on the One Day DRRM Management Course for Women Sector for the Province of La Union held at Oasis Country Resort, San Fernando City last March 6, 2018;

• Mr. Socrates G. Gaerlan attended as Resource Speaker re: “Building Climate Change Resiliency in the Coastal and Marine Environment: Focus on Coastal Geohazards, its Prevention, and Management” last April 4-5, 2018 at Leisure Coast Resort, Dagupan City, Pangasinan;

• Mr. Socrates G. Gaerlan attended as Resource Speaker on the “Workshop for the Formulation of Foreshore Area Management and Development Plan RE: Resource Profiling and Mapping” to discuss the results of geologic analysis of the region which will be used as part of the baseline data for the foreshore baseline mapping last April 12-13, 2018 at Dagupan Village Hotel, Dagupan City;

• Ms. Vilma A. Vecino attended as Subject Matter Expert/Lecturer re: "Understanding Geological Hazards and Understanding Landslides and Subsidence Hazards" on the two-day Disaster Risk Reduction and Management (DRRM) Course for Workers in the Informal Sector of the Province of Ilocos Norte on May 3-4, 2018 at Rivermount Hotel, Sarrat, Ilocos Norte;
• Ms. Vilma A. Vecino attended as Subject Matter Expert (SME) to discuss the topics on “Understanding Geological Hazards and Understanding Landslides and Subsidence Hazards” on the One-day Basic Disaster Risk Reduction and Management Training for Youth and Student Sector scheduled on May 23, 2018;

• Ms. Vilma A. Vecino attended as Resource Speaker in the DRRM Training Course for Senior Citizens in Dagupan City and facilitate topics for the World Vision’s Training on Disaster Preparedness in Lingayen last June 18-20, 2018; and

• Ms. Vilma A. Vecino attended as Subject Matter Expert (SME) to discuss the topics on “Understanding Geological Hazards and Understanding Landslides and Subsidence Hazards” on the One-day Disaster Risk Reduction and Management Training for the Victims of Disaster Sector of Ilocos Norte (June 25-27, 2018).
g) Geohazard Operation Center

h) Coastal Geohazard

Mines and Geosciences Bureau – Regional Office No.1 Coastal Geohazard Assessment and Mapping Team is conducting surveys along the coastal area/barangays in the province of Ilocos Norte.

The general purpose of this study is to investigate the coastal erosion, accretion and other coastal geohazards that could cause vulnerable impacts on the residents situated along the coastal areas. Thus, this study creates an effort to help or at least mitigate the possible effects of these hazards identified in the area. In this manner, the observations of the residents are collected through interview to further establish a conclusion that could define the past coastal setting in their area.

The historical accounts are also collected during the survey which includes the coastal geohazards that are present in the area and personal view of the residents about hazard mitigations. The Beach Profiling Program was also done by the team to determine the present outline or slope of the beach through the implementation of Emery Method. The data collected are used
to compare the beach slope to other areas. The beach profiling program was done only in areas where beach are exposed both in the mainland and island barangays.

The study shall benefit the local residents and Local Government Units in promoting awareness to the Coastal Hazards in their area and also possible mitigations that could lessen the effects of identified coastal vulnerabilities.

The fieldwork started last February, and as of June, six (6) coastal municipalities of Ilocos Norte were surveyed and given threat advisories. These municipalities are:

- Badoc, Ilocos Norte;
- Currimao, Ilocos Norte;
- Bangui, Ilocos Norte;
- Pagudpud, Ilocos Norte;
- Burgos, Ilocos Norte; and
- Pasuquin Ilocos Norte.
i) Geologic Mapping

Geologic quadrangle mapping is one of the priority projects of the Government under the Geological Assessment Program of the Mines and Geosciences Bureau (MGB) Regional Office I. This project is being conducted in order to produce and complete geological maps of the Region I.

The generated 1:500 scale geologic maps will serve as the base map for other geological surveys like geo-hazard assessment, hydrogeological survey and other geological resources mapping and can be used for land use development planning of the local government units (LGUs).

There are two (2) quadrangles that were surveyed for the first semester of the year; these are Sinait and Solsona Quadrangle. The first geological mapping was conducted in Sinait Quadrangle dated on March 20-28, 2018 and then followed on the areas of Solsona Quadrangle which was surveyed on April 17 to May 15, 2018 inclusive. In contrast, Sinait quadrangle is updating and/or checking area whereas Solsona quadrangle has no data.
Sinait Quadrangle is bounded by geographical coordinates of North 17° 50' 00" – 18° 00' 00" Latitude and East 120° 15' 00" – 120° 30' 00" Longitude while Solsona Quadrangle is surrounded by geographical coordinates of 18° 00' 00" - 18° 10' 00" latitude and 120° 45' 00" - 121° 00' 00" longitude.

The procedure applied during fieldwork includes identification of rocks and minerals exposed along the rivers, roads, and agricultural lands, mapping of geological structures (e.g. faults, fracture and joints), collection of rock samples and checking mineralization (metallic and non-metallic) present in the area.
Based on the correlation between the previous and recent geological data derived from Sinait Quadrangle, it was confirmed that all inferred lithologic units in the area are still present and stratigraphically correct. The formational units that were verified in the quadrangle are the following (arranged from oldest to youngest): Ilocos Peridotite, Laoag Formation, Uplifted Corals and Quaternary Alluvium.

Meanwhile, Solsona quadrangle comprises of eight (8) formational units namely; Metavolcanics, Diorite Complex, Dacite, Andesite, Schist, Baruyen-Bangui Formation, Dagot Limestone and Quaternary Alluvium.

In terms of mineral resource potential, there is no significant mineralization found in Sinait quadrangle and there are no mining activities reported in the area. In contrast, Solsona quadrangle shows surface manifestation of
probably copper mineralization. Abundant sulfide minerals predominantly pyrite was observed in diorite outcrops occurring as disseminated and fracture fills. However there are no recent mining activities reported in the area.

j) Mineral Resource Inventory

![Mineral Resource Inventory Map of Region I](image)

k) Groundwater Resource Assessment

For the Calendar Year 2018, Special Order No. 2018-89, with the subject “AUTHORIZING CERTAIN PERSONNEL OF THE MINES AND GEO SCIENCES BUREAU REGIONAL OFFICE NO. 1 TO CONDUCT HYDROGEOLOGICAL ASSESSMENT SURVEY IN THE PROVINCE OF ABRA, CORDILLERA ADMINISTRATIVE REGION”
tasked the MGB RO1 Hydrogeological Team to assess the twenty-seven municipalities of Abra Province. The team accomplished nine (9) municipalities namely: San Isidro (April 2018), Tubo (April 2018), Luba (April 2018), Daguioman (April 2018), Bucloc (April 2018) Tineg (May 2018), Lacub (May 2018), Malibcong (June 2018), and Licuan-Baay (June 2018).

The objective of the project is to determine the availability and quality of groundwater in the various rock units / geologic formations in the entire country; establish the quality/chemistry of groundwater in groundwater basins; establish the potentials and limitations of available groundwater in the various groundwater basins; delineate areas with groundwater resource potential; and assess groundwater vulnerability of aquifers in the country.

Methodologies used in the survey consists of Well/Spring Inventory, Hydrogeological Mapping and Water Sampling. Inventory of springs or wells
was conducted with the use of a Global Positioning System (GPS) to locate its geographic position. Measurement of well depth and groundwater level was carried out with the use of a battery operated water level indicator that emits sound upon reaching the water surface. Mapping method is done through the use of a topographic map which serves as guide or base map of the study area, brunton compass to measure the strike and dip of the structures encountered during the field, and a sample pick to gather rock samples to identify physical properties of the rock. Water samples collected from pump wells, dug wells and springs were subjected to water quality analysis using a Hach meter. The in-situ test determines the temperature, pH, electric conductivity, total dissolved solids (TDS) and salinity of the water sample.

Pump well and dug well were measured by using a battery operated water level indicator to measure the well depth and depth to groundwater.

The rainy season makes assessing the mountainous areas quite challenging. Thus, some sitios of the far flung barangays were not included in the survey.
The team was able to inventory a total of seventeen (17) for dug/pump wells and 122 springs during the field work.

I) **Miscellaneous Geological Services**

- Geological Site Scoping on the proposed Sanitary Landfill Site located at Barangay Tangaoan, Sta. Maria, Ilocos Sur last January 4-6, 2018.


- Geological Site Scoping on the proposed Engineered Sanitary Landfill facility located at Barangay Saoay, City of San Fernando, La Union last January 30-31, 2018.

- Hydrogeological and Georesistivity Survey at Sentinella Hill of Bangui, Ilocos Norte as per request of Mayor Flidel Cimatu of Bangui, IN last February 13-16, 2018.


- Geological assessment and test pit inspection in the proposed sanitary landfill site in the City of San Fernando City, La Union last March 1, 2018.


The assessed expansion site of the Sanitary Landfill of Agoo is located along the northwest of the SLF. As can be seen, leachate and gas pipes are already installed, and dumping of waste materials was already conducted.

- Geological Site Scoping on the proposed Sanitary Landfill Site located at Barangay San Miguel, Burgos, Pangasinan last April 4-5, 2018.

- Geological Site Scoping on the proposed Sanitary Landfill Site located at Infanta, Pangasinan last April 6-7, 2018.

- Geohazard Identification Survey for the proposed Housing Project located at Cabaroan, Tagudin, Ilocos Sur last May 2-4, 2018.
- Geological Site Scoping for the proposed Sanitary Landfill Site in Barangay Pugaro, Municipality of Manaoag, Province of Pangasinan last May 16-18, 2018.

Soil Sampling on the proposed site to see if the clay is enough for a liner.

- Geological Assessment for the proposed Sanitary Landfill site located at Barangay Agpay, Burgos, La Union last May 31-June 2, 2018.
WOMEN MAKE CHANGE – In celebration of the National Women’s Month 2018, personnel from the Mines and Geosciences Bureau Regional Office No. 1 actively participated in the walk for gender equality organized by the Region 1 Advocates for Gender Equality (R.A.G.E.) on March 2, 2018 at the Don Mariano Marcos Memorial State University-Mid La Union Campus. The theme, “We make change. Work for Women” highlights the empowerment of women as active contributors to and claimholders of development. This theme is constant from 2017-2022 where it also showcases the pursuit of development anchored in the commitment of “Malasakit at Pagbabago” or true compassion or real change.

SAN FERNANDO CITY, La Union – Department of Environment and Natural Resources-I, Mines and Geosciences Bureau-I and Environmental Management Bureau-I conducted a forum showcasing women exemplar in the field of natural resources on March 15, 2018 at the DENR-1 Social Hall.

Along with this, a bazar featuring products from different people’s organizations in the region was established in the parking area of the DENR-1 building. This also includes services and products of persons with disabilities (PWDs). The ribbon cutting ceremony was led by ARD Gwendolyn Bambalan,
ARD Leduina Co, EMB-1 Regional Director Ma. Victoria Abrera and Director Lourdes Wagan.

TRAINING ON ENHANCED GENDER MAINSTREAMING EVALUATION FRAMEWORK ON APRIL 2-6, 2017 AT THE MICROTEL BY WYNDHAM IN DILIMAN, QUEZON CITY

The Mines and Geosciences Bureau through the GAD Focal Point System (GFPS) conducted the said 5-day training which also included members of the GAD Regional Technical Working Group.

It aimed to increase the knowledge of the participants on the GMEF which is a tool to measure the extent of the gender mainstreaming efforts of organizations, National Government Agencies and Local Government Units. It is also meant to assist the GFPS members in measuring gains and success, as well as pinpoint areas for improvement in the way they mainstream the gender and development in their organization.
MGB 1 personnel undergo Gender Sensitivity Training

The Mines and Geosciences Bureau Region 1 conducted another Gender Sensitivity Training (GST) for more or less 20 personnel last March 27, 2018 at the Oasis Country Resort in San Fernando City, La Union. The said training aimed to mainstream gender concerns to make women’s and men’s concerns as an integral dimension of the design, implementation, monitoring and evaluation of the policies and programs as mandated under Republic Act. No. 9710 or the Magna Carta of Women.