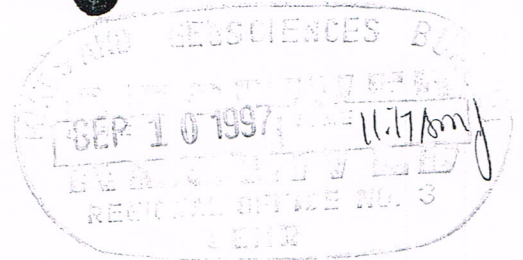


ANNEX "A"

**CORPORATE SECRETARY'S
CERTIFICATION**

REPUBLIC OF THE PHILIPPINES)
MAKATI CITY) S.S.




SECRETARY'S CERTIFICATE

I, **REGINO A. MORENO**, of legal age, the duly elected and qualified Secretary of **FILIPINAS MINING CORPORATION** with principal office at at 15th Floor, Sagittarius Condominium, H.V. dela Costa Street, Salcedo Village, Makati, Metro Manila, do hereby certify that at the special meeting of the Board of Directors of the Corporation on May 20, 1997 at its principal office, where a quorum was present, the following resolutions were unanimously adopted:

"RESOLVED, to grant full authority to Carmen Luz Herlihy and/or Michael Luz Herlihy to take all steps necessary and proper for the filing of application for Mineral Production Sharing Agreement over areas covered by the Mining Lease Contract of Filipinas Mining Corporation;

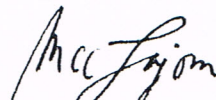
"RESOLVED, FURTHER, that Carmen Luz Herlihy and/or Michael Luz Herlihy be authorized to sign and execute any and all papers and documents which may be necessary to accomplish the foregoing purposes."

IN WITNESS WHEREOF, I have hereunto set my hand this 7th day of August 1997 at Makati City.


REGINO A. MORENO
Corporate Secretary

SUBSCRIBED AND SWORN to before me this 7th day of August 1997 at Makati City; affiant exhibited to me his CTC No. 11880557E, issued at Villasis, Pangasinan on July 25, 1997.

Doc. No. 278;
Page No. 56;
Book No. 1;
Series of 1997.

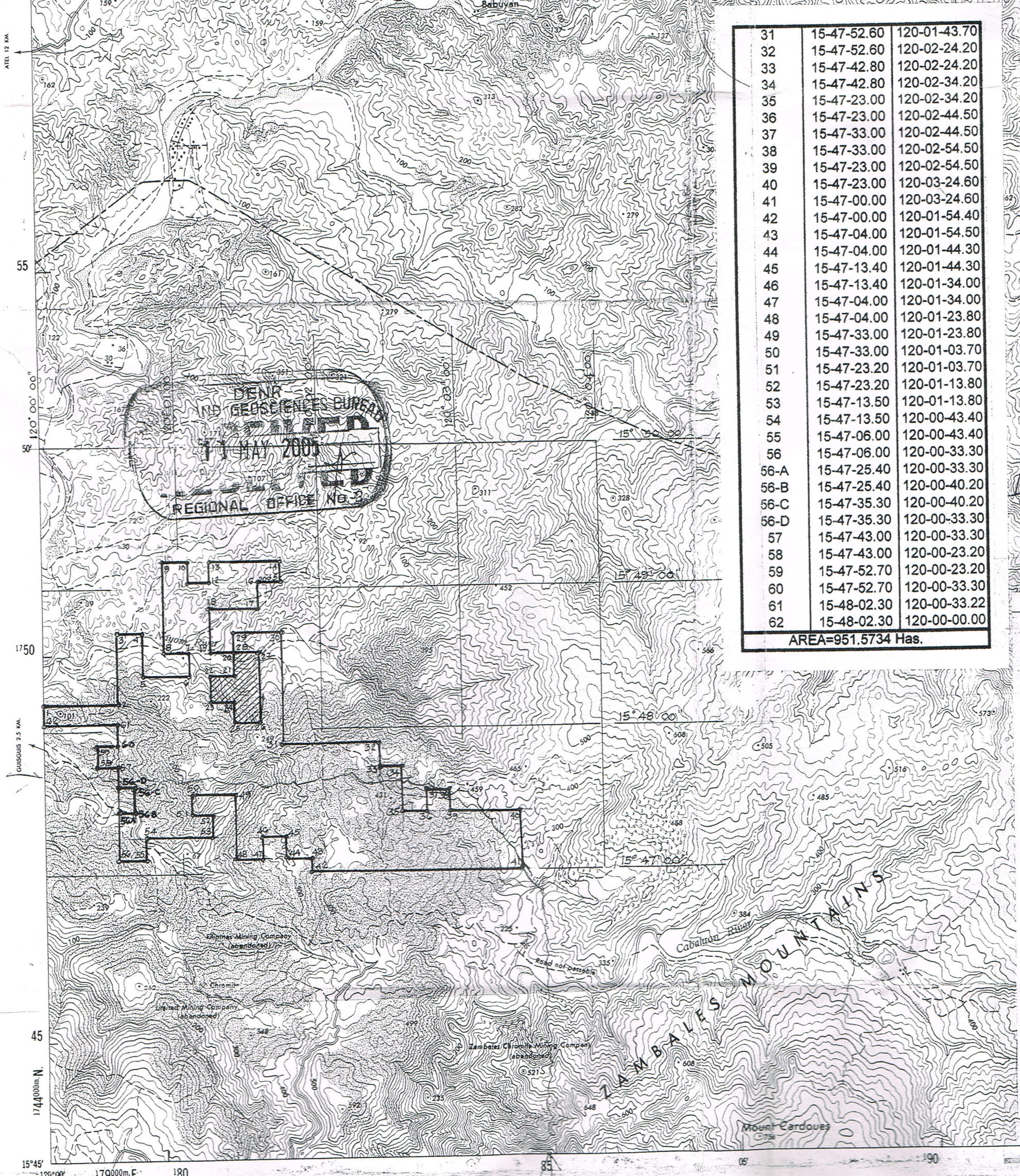

MA. CARMELA C. LAJOM
Notary Public
Until December 31, 1998
PTR No. 8036298/1-24-97/Makati

ANNEX "B"

Location Map/Sketch Plan

31	15-47-52.60	120-01-43.70
32	15-47-52.60	120-02-24.20
33	15-47-42.80	120-02-24.20
34	15-47-42.80	120-02-34.20
35	15-47-23.00	120-02-34.20
36	15-47-23.00	120-02-44.50
37	15-47-33.00	120-02-44.50
38	15-47-33.00	120-02-54.50
39	15-47-23.00	120-02-54.50
40	15-47-23.00	120-03-24.60
41	15-47-00.00	120-03-24.60
42	15-47-00.00	120-01-54.40
43	15-47-04.00	120-01-54.50
44	15-47-04.00	120-01-44.30
45	15-47-13.40	120-01-44.30
46	15-47-13.40	120-01-34.00
47	15-47-04.00	120-01-34.00
48	15-47-04.00	120-01-23.80
49	15-47-33.00	120-01-23.80
50	15-47-33.00	120-01-03.70
51	15-47-23.20	120-01-03.70
52	15-47-23.20	120-01-13.80
53	15-47-13.50	120-01-13.80
54	15-47-13.50	120-00-43.40
55	15-47-06.00	120-00-43.40
56	15-47-06.00	120-00-33.30
56-A	15-47-25.40	120-00-33.30
56-B	15-47-25.40	120-00-40.20
56-C	15-47-35.30	120-00-40.20
56-D	15-47-35.30	120-00-33.30
57	15-47-43.00	120-00-33.30
58	15-47-43.00	120-00-23.20
59	15-47-52.70	120-00-23.20
60	15-47-52.70	120-00-33.30
61	15-48-02.30	120-00-33.22
62	15-48-02.30	120-00-00.00

AREA=951.5734 Has.

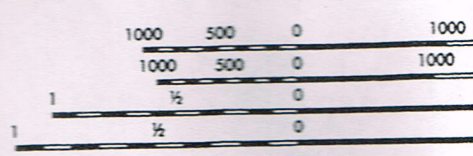


UTM ZONE 51
BINAGBAG 2 KM.
Users noting errors on this map are requested to notify the National Mapping and Resource Information Authority (NAMRIA), Fort Andres Bonifacio, Makati, Metro Manila.

LEGEND

MAP INFORMATION AS OF 1977
A LANE IS GENERALLY CONSIDERED AS BEING 2.4 METERS (8 FEET) IN WIDTH
THERE ARE NUMEROUS IDENTICALLY NAMED VILLAGES PORTRAYED ON THIS GRAPHIC.

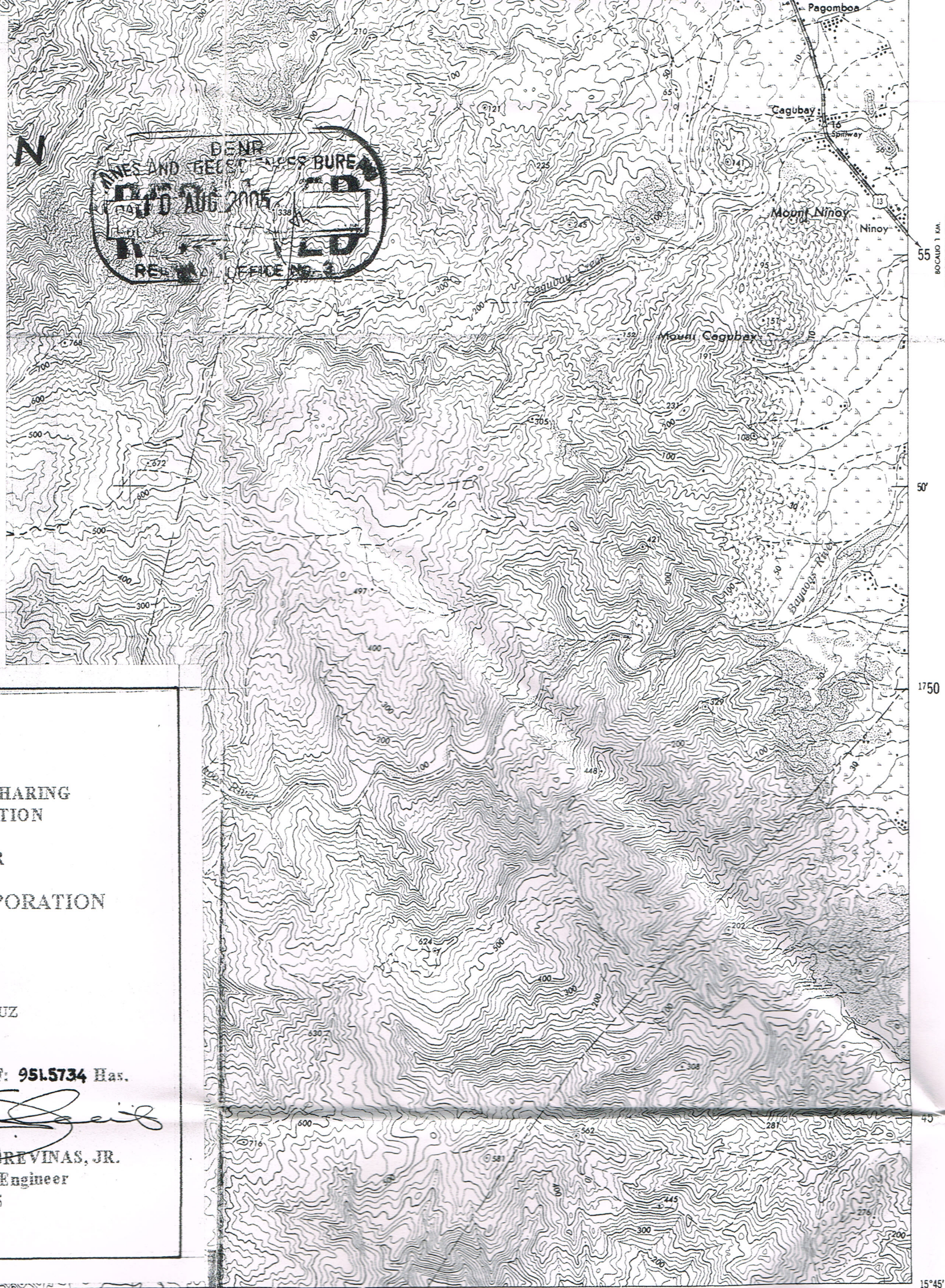
- ROADS**
- All weather, hard surface, divided highway with median strip
 - All weather, hard surface, two or more lanes wide
 - All weather, loose or light surface, two or more lanes wide
 - All weather, hard surface, one lane wide
 - All weather, loose or light surface, one lane wide
 - Fair or dry weather, loose surface
 - Track; trail
 - Route markers: Primary; Secondary
- RAILROADS**
- Broad gauge, single track; multiple track; Station
 - Normal gauge, single track multiple track; Station 1.27 M. (3'6 1/8")
 - Narrow gauge, single track; multiple track
 - Airfield; Runways; hard surface, loose surface
 - First-order administrative division
 - Second-order administrative division
 - Military reservation boundary
 - Built-up area; Village
- Footbridge
 - Ferry
 - Ford
 - Masonry dam carrying road
 - Road on levee
 - Masonry dam; Earthen dam
 - Large rapids
 - Large falls
 - Office: Province or chartered city; Municipality
 - Cemetery: Christian; Mohammedan; Hebrew
 - located object
 - Church; Chapel; Shrine; Mosque
 - School; Hospital
 - Well; Tank
 - Mine; active, abandoned
 - Horizontal control point
 - Bench mark
 - Spot elevation in meters: Checked; Unchecked



SPHEROID
PROJECTION
VERTICAL DATUM
HORIZONTAL DATUM
CONTROL BY

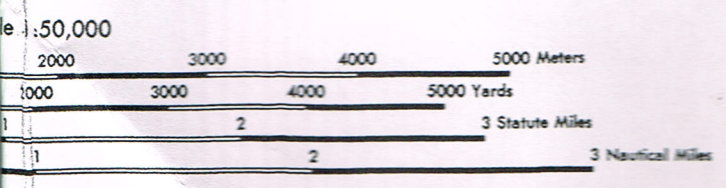
DELINEATION OF INTERNAL ADMIN

TECHNICAL DESCRIPTION		
CORNER	LATITUDE	LONGITUDE
1	15-48-12.30	120-00-00.00
2	15-48-12.30	120-00-33.22
3	15-48-41.46	120-00-33.09
4	15-48-41.46	120-00-43.30
5	15-48-21.90	120-00-43.30
6	15-48-21.90	120-01-03.42
7	15-48-31.70	120-01-03.37
8	15-48-31.70	120-00-53.29
9	15-49-10.90	120-00-53.30
10	15-49-10.70	120-01-03.30
11	15-49-01.00	120-01-03.30
12	15-49-01.00	120-01-13.50
13	15-49-10.70	120-01-13.50
14	15-49-10.70	120-01-43.80
15	15-49-01.00	120-01-43.80
16	15-49-01.00	120-01-33.70
17	15-48-51.30	120-01-33.70
18	15-48-51.30	120-01-13.50
19	15-48-31.60	120-01-13.50
20	15-48-31.60	120-01-23.70
21	15-48-21.80	120-01-23.70
22	15-48-21.80	120-01-13.50
23	15-48-12.10	120-01-13.50
24	15-48-12.10	120-01-23.70
25	15-48-02.40	120-01-23.70
26	15-48-02.40	120-01-33.80
27	15-48-31.60	120-01-33.80
28	15-48-31.60	120-01-23.70
29	15-48-41.40	120-01-23.70
30	15-48-41.40	120-01-43.70



AMENDED
 SKETCH MAP OF
 MINERAL PRODUCTION SHARING
 AGREEMENT APPLICATION
 AS PREPARED FOR
 FILIPINAS MINING CORPORATION
 SITUATED IN THE
 BARANGAY OF: GUISGUIS
 MUNICIPALITY OF: STA CRUZ
 PROVINCE OF: ZAMBALES
 ISLAND OF: LUZON
 CONTAINING AN AREA OF: 951.5734 Has.

[Signature]
 REGINO L. SOBREVINAS, JR.
 Geodetic Engineer
 PTR No. 6067505
 Date: 1-10-05



CLARKE 1866
 TRANSVERSE MERCATOR
 MEAN SEA LEVEL
 LUZON DATUM
 AND GEODETIC SURVEY, 29TH ENGINEER BATTALION AND
 PHILIPPINE COAST AND GEODETIC SURVEY

BOUNDARIES ON THIS MAP IS APPROXIMATE

UTM ZONE 51
 1975
 G-M ANGLE
 6° (10 MILS)
 TO CONVERT A
 MAGNETIC AZIMUTH
 TO A GRID AZIMUTH
 ADD G-M ANGLE
 TO CONVERT A
 GRID AZIMUTH TO A
 MAGNETIC AZIMUTH
 SUBTRACT G-M ANGLE
 GRID CONVERGENCE
 0°47' (14 MILS)
 FOR CENTER OF SHEET

ELEVATION GUIDE

ADJOINING SHEETS

6975 III	7075 III	7075 II
6974 I	7074 IV	7074 I
6974 II	7074 III	7074 II

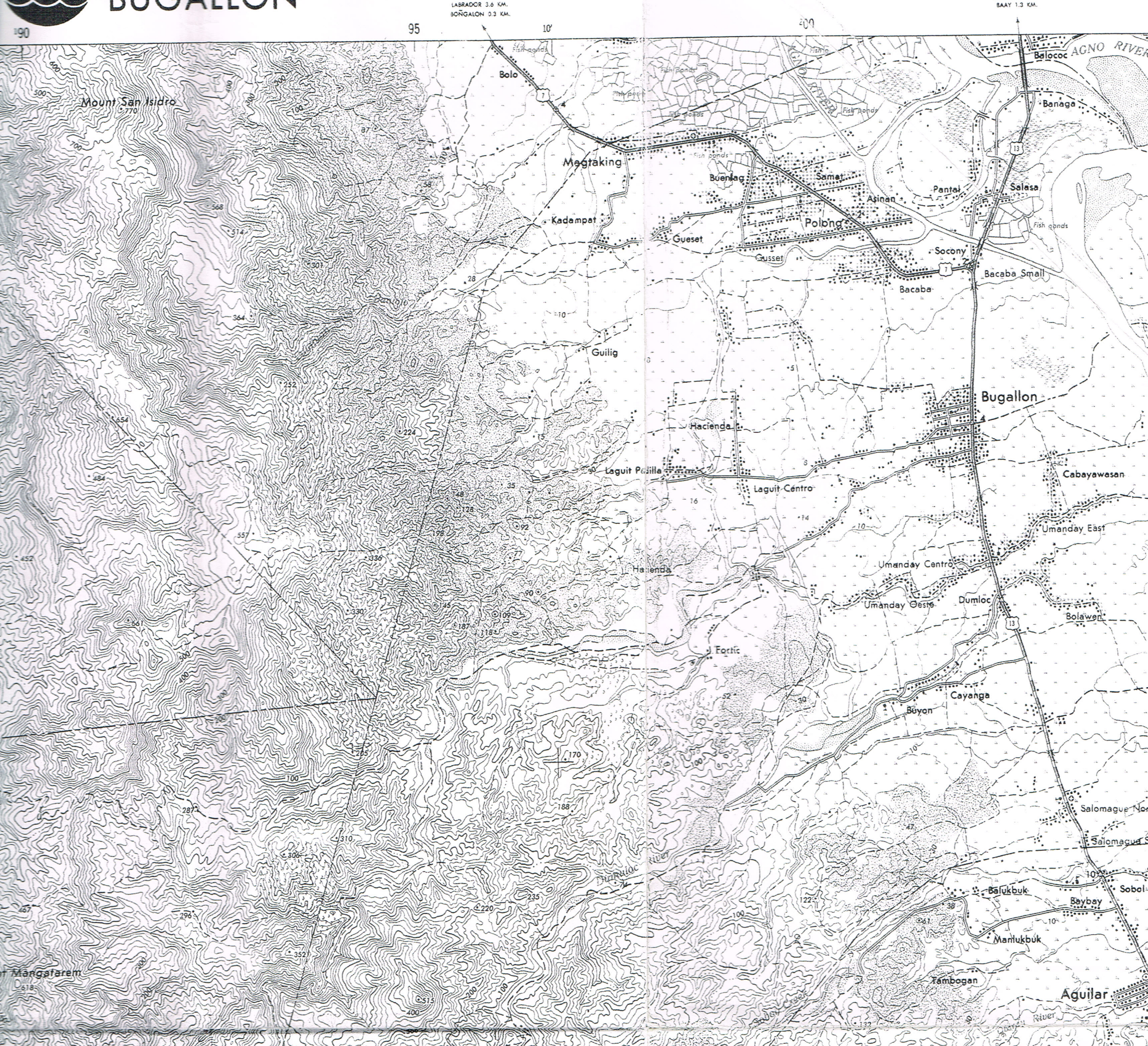
BOUNDARIES

A. Pangasinan Province
 1. Dasol Municipality
 2. Mabini Municipality
 3. Sual Municipality
 4. Labrador Municipality
 5. Infanta Municipality
 6. Bugallon Municipality
 7. Lingayen Municipality
 8. Aguilay Municipality
 9. Mangataram Municipality
 10. San Carlos Municipality
 B. Zambales Province
 11. Santa Cruz Municipality



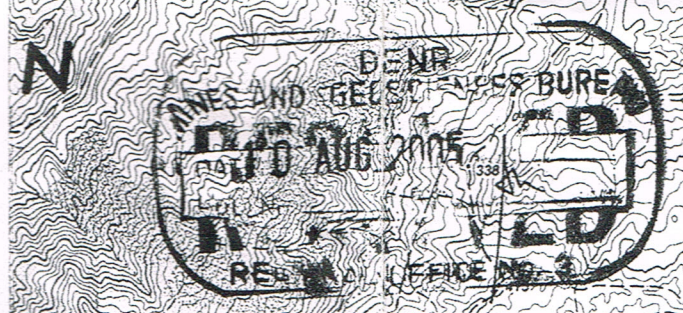
BUGALLON

EDITION 1-DMATC SERIES S701
 LINGAYEN 4 KM.
 BAAAY 1.3 KM.



2.60	120-01-43.70
2.60	120-02-24.20
2.80	120-02-24.20
2.80	120-02-34.20
3.00	120-02-34.20
3.00	120-02-44.50
3.00	120-02-44.50
3.00	120-02-54.50
3.00	120-02-54.50
3.00	120-03-24.60
3.00	120-03-24.60
3.00	120-01-54.40
3.40	120-01-54.50
3.40	120-01-44.30
3.40	120-01-44.30
3.40	120-01-34.00
3.40	120-01-34.00
3.40	120-01-23.80
3.00	120-01-23.80
3.00	120-01-03.70
3.20	120-01-03.70
3.20	120-01-13.80
3.50	120-01-13.80
3.50	120-00-43.40
3.50	120-00-43.40
3.50	120-00-33.30

TECHNICAL DESCRIPTION		
CORNER	LATITUDE	LONGITUDE
1	15-48-12.30	120-00-00.00
2	15-48-12.30	120-00-33.22
3	15-48-41.46	120-00-33.09
4	15-48-41.46	120-00-43.30
5	15-48-21.90	120-00-43.30
6	15-48-21.90	120-01-03.42
7	15-48-31.70	120-01-03.37
8	15-48-31.70	120-00-53.29
9	15-49-10.90	120-00-53.30
10	15-49-10.70	120-01-03.30
11	15-49-01.00	120-01-03.30
12	15-49-01.00	120-01-13.50
13	15-49-10.70	120-01-13.50
14	15-49-10.70	120-01-43.80
15	15-49-01.00	120-01-43.80
16	15-49-01.00	120-01-33.70
17	15-48-51.30	120-01-33.70
18	15-48-51.30	120-01-13.50
19	15-48-31.60	120-01-13.50
20	15-48-31.60	120-01-23.70
21	15-48-21.80	120-01-23.70
22	15-48-21.80	120-01-13.50
23	15-48-12.10	120-01-13.50



ANNEX "C"

**EXPLORATION WORK
PROGRAM**

Republic of the Philippines
 Department of Environment and Natural Resources
MINES AND GEOSCIENCES BUREAU
 North Avenue, Diliman, Quezon City

TWO- YEAR EXPLORATION WORK PROGRAM

NICKELIFEROUS LATERITE DEPOSIT

1.0 NAME AND ADDRESS OF COMPANY/PROPONENT

1.1 Name of Project : APSA No. 000213-III

1.2 Name of Company : **FILIPINAS MINING CORPORATION**
 No. 551 Ma. Cristina Street, Ayala
 Alabang Village, Muntinlupa City
 Metro Manila

Tel. No. +63(2) 772-8006

Fax No. +63(2) 772-8003

1.3 Contact Person : **SEAN MICHAEL LUZ HERLIHY**
 Senior Vice-President-COO

2.0 LOCATION OF THE PROJECT

The proposed contract area is situated within the Municipality of Sta Cruz, Province of Zambales. It covers an aggregate area of *Nine Hundred Fifty-One and 5734/10,000 Hectares* (951.5734 has.) encompassing Barangay Guisguis. The area is bounded within the following geographical coordinates:

CORNER	LATITUDE	LONGITUDE
1	15-48'12.30"	120-00'00.00"
2	15-48'12.30"	120-00'33.22"
3	15-48'41.46"	120-00'33.09"
4	15-48'41.46"	120-00'43.30"
5	15-48'21.90"	120-00'43.30"
6	15-48'21.90"	120-01'03.42"
7	15-48'31.70"	120-01'03.37"
8	15-48'31.70"	120-00'53.29"
9	15-49'10.90"	120-00'53.30"
10	15-49'10.70"	120-01'03.30"
11	15-49'01.00"	120-01'03.30"
12	15-49'01.00"	120-01'13.50"
13	15-49'10.70"	120-01'13.50"
14	15-49'10.70"	120-01'43.80"
15	15-49'01.00"	120-01'43.80"
16	15-49'01.00"	120-01'33.70"
17	15-48'51.30"	120-01'33.70"
18	15-48'51.30"	120-01'13.50"
19	15-48'12.30"	120-01'00.00"

20	15-48'31.60"	120-01'23.70"
21	15-48'21.80"	120-01'23.70"
22	15-48'21.80"	120-01'13.50"
23	15-48'12.10"	120-01'13.50"
24	15-48'12.10"	120-01'23.70"
25	15-48'02.40"	120-01'23.70"
26	15-48'02.40"	120-01'33.80"
27	15-48'31.60"	120-01'33.80"
28	15-48'31.60"	120-01'23.70"
29	15-48'41.40"	120-01'23.70"
30	15-48'41.40"	120-01'43.70"
31	15-47'52.60"	120-01'43.70"
32	15-47'52.60"	120-02'24.20"
33	15-47'42.80"	120-02'24.20"
34	15-47'42.80"	120-02'34.20"
35	15-47'23.00"	120-02'34.20"
36	15-47'23.00"	120-02'44.50"
37	15-47'33.00"	120-02'44.50"
38	15-47'33.00"	120-02'54.50"
39	15-47'23.00"	120-02'54.50"
40	15-47'23.00"	120-03'24.60"
41	15-47'00.00"	120-03'24.60"
42	15-47'00.00"	120-01'54.40"
43	15-47'04.00"	120-01'54.50"
44	15-47'04.00"	120-01'44.30"
45	15-47'13.40"	120-01'44.30"
46	15-47'13.40"	120-01'34.00"
47	15-47'04.00"	120-01'34.00"
48	15-47'04.00"	120-01'23.80"
49	15-47'33.00"	120-01'23.80"
50	15-47'33.00"	120-01'03.70"
51	15-47'23.20"	120-01'03.70"
52	15-47'23.20"	120-01'13.80"
53	15-47'13.50"	120-01'13.80"
54	15-47'13.50"	120-00'43.40"
55	15-47'06.00"	120-00'43.40"
56	15-47'06.00"	120-00'33.30"
56-A	15-47'25.40"	120-00'33.30"
56-B	15-47'25.40"	120-00'40.20"
56-C	15-47'35.30"	120-00'40.20"
56-D	15-47'35.30"	120-00'33.30"
57	15-47'43.00"	120-00'33.30"
58	15-47'43.00"	120-00'23.20"
59	15-47'52.70"	120-00'23.20"
60	15-47'52.70"	120-00'33.30"
61	15-48'02.30"	120-00'33.22"
62	15-48'02.30"	120-00'00.00"
AREA: 951.5734 Hectares		

3.0 MINERAL COMMODITY APPLIED

Nickeliferous Laterite and other associated mineral deposits.

4.0 DESCRIPTION OF THE PROJECT AREA

Below is a brief description of the project area and its vicinity focusing on the physiography, location and access, drainage system, vegetation and land use. Data used in the description is based on literature researches and through actual and or preliminary geological and topographic surveys.

4.1 *Terrain and Physiography*

The proposed contract area lies along the northwestern flank of the Zambales Range. One of the six (6) major terrains or tectonic elements delineated in the northern Philippines, having origins far from their present sites and having moved large distances with respect to adjacent terrains (Karig, 1981). The Zambales Range or better known now as the *Zambales Ophiolite Range* can be followed southwards from Subic Bay, beneath the sea floor on magnetic and gravity profiles, to Ambil Island in Mindoro and adjacent Islands where it is tipped up steeply, along a west-northwesterly strike and juxtaposed against the metamorphic terrain of Lubang and Northern Mindoro (Karig, 1981).

Gently rolling slopes to rugged topography generally characterizes the proposed contract area. Most of the claim areas lies in a plateau-like area with elevation varying between 200 meters to about 350 meters above mean sea level.

4.2 *Accessibility*

Municipality of Sta. Cruz is accessible to all types of vehicles using various road networks in going to this western section of Zambales. Victory Liner, a public bus transport has a frequent service between Manila and Olongapo City via the North Luzon Expressway, thence thru Zambales-Bugallon Road up to the town of Sta. Cruz.

The claim area could be reached through the Guisguis-Guinabon Road by about 30 kilometers of gravel road east the town.

4.3 *Drainage System*

The headwaters and tributaries of Nayom and Sta Cruz River Systems drain the northern section of the proposed contract area. Whereas, the headwaters and tributaries of Cabatuan River System drain the central section, while Luis River System drain the southern section of the area. All these river systems empty its load towards the South China Sea.

4.4 *Vegetation*

The area is characterized by secondary growth vegetation. It has been largely denuded of primary forest due to past commercial logging and subsequent slash-and-burn farming. Flatlands/lowlands some distant away from the applied area are

Other areas not devoted to seasonal crops are sparsely vegetated with second growth trees that can be found mostly in moderately elevated sedimentary formations. The ubiquitous cogon is present in most of the mentioned other areas.

Pine trees such as Agoho and Mindoro Pines grow in central and southeastern sections of the proposed contract area. These are the products of the reforestation initiatives of the previous mining and exploration activities in the area.

4.5 *Land Use Classification*

Based from the Municipal Planning and Development Office of Sta. Cruz, through its 1996 Municipal Planning and Development Program, the applied area is classified as *Forest Land*. Though a few numbers of families settled in the vicinity of the former Acoje Mines, there is still no other significant or observable land utilization in the area. The other portion of the applied area, especially at the low lying areas, are seasonally planted to cash crops and covered with cogon and other tropical grasses.

5.0 DESCRIPTION OF EXPLORATION PROGRAM

The program hereby presented outlined and details the schedule of activities, specific targets, objectives, outputs and budget requirements.

The main objective of this exploration program is to **characterize and assess fully the nickel, iron, cobalt and other associated mineral contents of the nickeliferous laterite deposit in the subject area in order to delineate a sizeable resource that can be economically developed as well as exploited in the near future.** It also aims at geologically documenting the nature, type and depositional character of the laterite deposit so that this can well serve as basis or model for further exploration work in other areas of similar geologic setting.

This program aims at defining the reserve potential through a progressive drilling campaign from 200 meter x 200 meter grid interval to a final 50 m x 50m or 25 m x 25 m. grid patterns.

5.1 Exploration Work Program

Below is the exploration work program intended to be carried-out within the proposed contract area and consists of the following phases:

5.1.1. Preliminary Exploration Activity

- a. Literature/Research Work
- b. Data collation and compilation

5.1.2. Reconnaissance Geological & Geo-chemical Soil Survey

- a. Geological Mapping
- b. Re-sampling of Old Workings
- d. Hand Auger and Winkie Drilling

5.1.4. Topographic and Ground Control Survey

5.1.5. Follow-up / Detailed Survey

- a. **Geological Mapping**
- b. Geochemical Soil Survey
- c. Trenching & Test Pitting
- d. Hand Auger and Winkie Drilling

5.1.6 Project Feasibility Study, Volume & Reserve Estimation and Environmental Impact Assessment Study

5.1.1 *Preliminary Exploration Activity*

Prior to the actual fieldwork, compilation of all available data will be conducted to gather a better understanding of the geology, structure and mode of occurrence of the laterite deposits in the area. Previous test pits and drilling data including location, geologic logs and corresponding assays, shall be reviewed. A re-assessment of the method used in sampling and calculations of previous reserve is also important to be studied. **Preliminary topographic and base maps shall be prepared with promising sites and or targets shall be plotted.** After all the necessary literature researches and data base have been accomplished, the supplies and materials for the field survey shall now be purchased.

Below are the previous works carried out in the ***proposed area and vicinity*** during and under the old tenement rights such as Commonwealth Act No. 137 and Presidential Decree No. 463:

In 1967, Global Mining Resources, Inc. (Global) laid claim to over 70 sq. kilometers of mineral land adjacent to the proposed applied area for nickeliferous laterite deposit. Also in the 1960's and early 1970's, Benguet Consolidated, Inc. (BCI) through an operating agreements with several mining companies such as Zambales Chromite Mining Company, **Filipinas Mining Corporation** and Consolidated Mines, Inc. covering a total area of about 35 sq. kilometers conducted an integrated and an extensive exploration activities over the respective claim areas of the said companies.

During the said exploration periods, undertaken by Global and BCI on their respective areas, extensive geological mapping, ground control surveys and subsurface investigations were conducted by both companies for the verification of the commercial content of the nickel deposit. The BCI on its 1972 Progress Report to **Filipinas Mining Corporation**, delineated

conducted "a total of 63 test pits with an aggregate of 299 meter advance or an average depth of 4.7 meters." The test pits accordingly were sunk at 100-m distance from and as in-fill of the 1971 Phase I test pits at 200-m centers. The report also indicated that the test pits were not deep enough and were not able to penetrate the saprolite zone. An additional surface geological mapping was reportedly conducted.

In 1976, after the necessary evaluation and assessment of all exploration data on the nickel deposit gathered by the said two exploration companies, Falconbridge Nickel Mines of Toronto, Canada (Falconbridge) signed up with Global and BCI to further explore the properties and came up with a feasibility study for the joint venture project. From 1977 to 1983, Falconbridge dug test pits on a 100-m center grid spacing in the more prospective areas where nickel ore (laterite and saprolite) averages 1.7% Ni.

Falconbridge stopped the project in August 1983 due to low nickel metal prices, increasing operating costs and unstable political conditions in the country. BCI relinquished then its right to operate in the area and dropped or returned the mineral claims to the original claimowners.

As of May 1983, the aggregate total proven probable and possible reserves for all the properties explored was placed 56.9 Million DMT of 1.7% Ni (average grade). About 11.9 Million DMT of this is within the Insular Chromite Reservation Parcel 3.

5.1.2 *Reconnaissance Geological and Geo-Chemical Soil Survey*

On the basis of the data and information gathered and generated during the previous activities, a reconnaissance to re-orient geological mapping and soil and when necessary, rock sampling shall be conducted. All the different rock types will be mapped out and characterize accordingly. Nickel laterite deposit which is the target commodity will be given the utmost consideration in the conduct of the survey. Likewise, rocks that are related or associated to nickel laterite deposition will also be given attention, since they can be utilized in further understanding of the laterite characterization in the area. Route (roads, rails) mapping and traverses along stream channels and on areas where suitable rock exposures can be noted will be carried-out. A topographic map of scale 1:50,000 will be used as base map. A sampling density of around two (2) samples per square kilometer will be implemented.

Rock samples of interest will be sent to the laboratory for chemical and petrographic analyses

Simultaneous with geological site selection and sampling is a survey to orient the geochemical sampling medium or media and procedures. This activity shall be conducted purposely to check and verify the best sampling medium and the best soil horizon to sample. From the previous studies conducted by several private and government exploration groups in the early 80's, both soil and stream sediment having minus 80 mesh (BSS, 177 micron opening) fraction of both media was shown to provide adequate contrast. *The company is bent on using soil as the sampling medium for its geochemical survey.*

This activity shall be carried-out by a geochemist and two (2) geo-technicians or aides for a month. The density of base of slope and ridge soil geochemical sampling is 3 to 5 samples per square km. This sampling density may be increased to 7-10 samples in areas with widespread and thick laterite occurrences.

5.1.3 *Semi-Detailed Survey*

Data gathered from rapid reconnaissance and from previous data acquired during "BCI" days shall be incorporated to come up with a survey suited for a 1:25,000 to 1:10,000 scale mapping.

A total of 50 previously dug test pits (old workings) with elevated nickel values shall be rehabilitated and re-sampled. Channel sampling on excavated faces shall be implemented. Samples generated from each sampling points shall include original/primary sample, duplicate and standard sample. These samples shall then be subjected to Quality Control Testing Procedures. Sampling shall be done in a systematic way so that possible trends in the chemical character of the deposit may be determined.

A hand auger drilling shall also be conducted as an advance drilling campaign to explore the soft laterite profile to delineate potential areas within the proposed tenement area. Drill holes with encouraging assay values are then to be deepened using "winkie" drill machine from soft laterite zone to the hard saprolite horizon. Around 2-3 kg of primary samples shall be collected for initial sample preparation.

Initial sampling preparations includes systematic logging and labeling, sun drying, crushing using mallet to approximately 5mm of about 2 kg of dried samples, blending/splitting (~1.7 kg for duplicate sample and 0.3kg for sample to be sent and analyzed in the laboratory, that requires further preparations), re-labeling and storage.

Approximately 100 samples will be analyzed for Ni, Fe, Co, MnO and Al₂O₃ by Atomic Absorption Spectrometry

(AAS) to verify and better understand the quality or values of the commodities of interest.

5.1.4. *Topographic and Location Surveys*

A topographic and location survey of the delineated areas is indeed necessary in mine development planning and design and for the establishment of legal boundaries. The resulting topographic map is useful in accurate design of grid pattern for test pits, trenches or simply random grab sampling. This is likewise necessary in planning the site for drill holes during drilling activity.

The specific survey activities to be carried-out are the following:

- a. Establishment of grid lines or pattern for geochemical survey and geological mapping survey. The grid lines shall from 200 m x 200 m to 100 meters x 100 meters or 50 m. x 50 m. intervals. Based from the above grid lines, sampling points is normally set at either 50 meters or much closer apart at 25 meters, particularly on areas with nickel laterite enrichment;
- b. Establishment of control (vertical and horizontal) baselines at various strategic areas of the proposed exploration site based from the cadastral and land survey control stations. Generation of topographic map for semi-detailed to detailed surveys in scale of 1:5,000 and 1:2,500, respectively with contour interval from 10 down to 2 meters;
- c. Determination of the true geographic position, horizontal and vertical control and true elevation of mineralized areas, trenches, test pits and drill holes; and
- d. Establishment of legal boundaries of the area applied for.

This activity shall be conducted for three (3) months by a team of surveyors and aides consists of two (2) Geodetic Engineers, five (5) surveying aides and 3 guides/brushers. A "Total Station" surveying instrument shall be used for this activity.

5.1.5 *Follow-Up/Detailed Survey*

After pinpointing/delineating potential target area encountered during the previous activities, a detailed or follow-up survey shall be designed and conducted. A smaller map scale shall be used for the purpose depicting more details of the findings or data gathered. A 1:5,000 and a 1:2,500-map scale shall be utilized.

This time, the focus of survey will be concentrated only on areas with the most promising deposits. Unlike the previous survey it covers the entire area and its vicinity. Sites having good exposures will be sampled in greater detail using transit in grid pattern.

The sampling will be done in a systematic way so that a possible trend in the nickel values may now be accurately determined.

Geochemical Soil Survey

Together with the conduct of geological mapping is the geochemical survey. The sampling medium of this survey is soil. Soil samples are normally taken from pits dug in the ground. The depth of sampling horizon is based from the orientation survey to be conducted prior to the full exploration activities. But normally, it is being taken at the B Horizon – the zone of metal accumulation. The most appropriate sampling will be from base-of-slope, ridge, and spurs. Sampling shall be carried out at intervals of 50 m to 100 m or at change in lithology. The sampling is being conducted using either a shovel or a sample pick.

If the depth of sampling cannot be tackled by a shovel, then a hand auger shall be used.

A pre-numbered, high- wet-strength kraft paper envelope measuring about 10 cm x 20 cm. shall be used to keep the samples. In order to reduce weight during sampling, a wet-sieving procedure (approx. 30 mesh BSS) shall be used during the traverse.

During this phase, test pitting and trenching shall be carried out in a number of sites to determine the lateral and subsurface continuity and character of nickel enrichment/mineralization. On this stage, sampling will be done horizontally and vertically to identify any appreciable changes or variation in the essential chemical constituents of the materials of interest. In-fill drillings using auger and "winkie drill machines shall also be carried out.

Grid mapping and closely space sampling shall be undertaken on areas where the physical and chemical character appears too variable. All samples taken will be analyzed for petrographic and ASS.

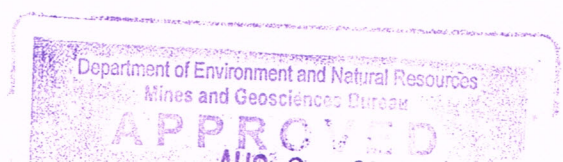
Approximately 1,500 soil samples and about fifty rock samples shall be collected. The same field sampling preparation procedures as presented under item Semi-Detailed Phase shall also be implemented.

A team of 2 exploration geologists and a geochemist, 6 geo-technicians/geologic aides and varying numbers of

support personnel (locals) shall compose the exploration team.

5.1.6 Feasibility Studies

After the deposits have been block accurately, a resource estimation and a mine feasibility study shall be undertaken to determine the economic viability of the project. This will be followed by a mine planning and design. Simultaneous with the preparation of the mine feasibility study, is the Environmental Impact Assessment Study (EIA) which, gather and establish baseline information on various critical environmental aspects and to better safeguard and support the proposed project.



7.0 TOTAL ESTIMATED EXPLORATION COST

Below is the total budgeted cost for the proposed two -year exploration work program for Nickeliferous Laterite and other associated mineral deposits and summarized as follows:

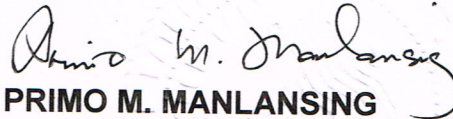
<u>YEAR 1</u>	<u>COST</u>
Literature Research	P 500,000.00
Reconnaissance Survey	
•Geological & Geo-Chem. Surveys	150,000.00
•Rock & Soil Sampling	30,000.00
Semi-Detailed Survey	
•Geological & Geo-Chem. Surveys	300,000.00
•Test Pitting/Trenching	650,000.00
•Auger & Core ("Winkie") Drilling Including Laboratory Analyses	1,500,000.00
Topographic, Ground Control & Location Surveys	300,000.00
Detailed Survey	
•Geological & Geo-Chem. Surveys	650,000.00
•Test Pitting/Trenching	750,000.00
•Auger & Core ("Winkie") Drilling Including Laboratory Analyses of samples	<u>2,500,000.00</u>
	PHP 7,330,000.00
<u>YEAR 2</u>	<u>COST</u>
Follow-Up/Detailed Survey	
•Geological & Geo-Chem. Surveys	650,000.00
•Test Pitting/trenching	750,000.00
•Auger & Core ("Winkie") Drilling Including Laboratory Analyses of Samples	1,500,000.00
Topographic, Ground Control & Location Surveys	500,000.00
Volume and Reserve Computation	300,000.00
Mine Feasibility Study	1,500,000.00
Environmental Impact Assessment (EIA) Study	<u>2,000,000.00</u>
	PHP7,200,000.00
<u>Grand Total for Year 1&2</u>	PHP14,530,000.00

8.0 SIGNATURE OF PROPONENT

I hereby certify that all facts and information contained herein to support our application for Mineral Production Sharing Agreement relative to the above-mentioned project are true and correct to the best of my knowledge and belief.

Done this _____ day February 2008 at Quezon City, Metro Manila.

Prepared By:



PRIMO M. MANLANSING

Geologist

PRC License No. 0036

PTR No. 5802803

Issued on: Jan 4, 2007

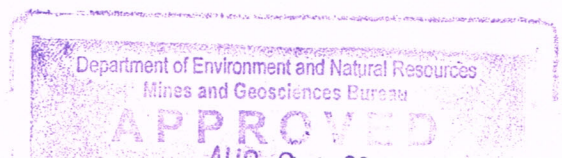
At: Baco or Cavite

Conforme:

FILIPINAS MINING CORPORATION:



SEAN MICHAEL LUZ HERLIHY
Senior Vice-President- COO



ANNEX "D"

**ENVIRONMENTAL WORK
PROGRAM**

Republic of the Philippines
 Department of Environment and Natural Resources
MINES AND GEOSCIENCES BUREAU
 North Avenue, Diliman, Quezon City

ENVIRONMENTAL WORK PROGRAM

1.0 Name And Address Of Company/Proponent

- 1.1 Name of Project : APSA No. 000213-III
- 1.2 Name of Company : **FILIPINAS MINING CORPORATION**
 No. 551 Ma. Cristina Street, Ayala
 Alabang Village, Muntinlupa City
 Metro Manila
- Tel. No. +63(2) 772-8006
 Fax No. +63(2) 772-8003
- 1.3 Contact Person : **SEAN MICHAEL LUZ HERLIHY**
 Senior Vice-President-COO

2.0 Type and Nature of Project

The company's objective arises to explore the area in order to prove the mineral potential by using the best method in the discovery of economic mineral deposits with minimal impact on the environment and a satisfactory relation with the communities in the project area.

As described in the work program this activity covers the first two (2) years period of the exploration work proposed to be undertaken with a total anticipated expenditures amounting to PHP14,530,000.00. This environmental work program has estimated environmental cost of PhP 1,500,000.00.

The type of the project is a mineral exploration located for nickel laterite other associated mineral deposits within the applied Mineral Production Sharing Agreement (MPSA).

3.0 Location and Area of the Project

The proposed contract area is situated within the Municipality of Sta Cruz, Province of Zambales. It covers an aggregate area of *Nine Hundred Fifty-One and 5734/10,000 Hectares* (951.5734 has.) encompassing Barangay Guisguis. The area is bounded within the following geographical coordinates:

CORNER	LATITUDE	LONGITUDE
1	15-48'12.30"	120-00'00.00"
2	15-48'12.30"	120-00'33.22"
3	15-48'41.46"	120-00'33.09"
4	15-48'41.46"	120-00'43.30"
5	15-48'21.90"	120-00'43.30"

7	15-48'31.70"	120-01'03.37"
8	15-48'31.70"	120-00'53.29"
9	15-49'10.90"	120-00'53.30"
10	15-49'10.70"	120-01'03.30"
11	15-49'01.00"	120-01'03.30"
12	15-49'01.00"	120-01'13.50"
13	15-49'10.70"	120-01'13.50"
14	15-49'10.70"	120-01'43.80"
15	15-49'01.00"	120-01'43.80"
16	15-49'01.00"	120-01'33.70"
17	15-48'51.30"	120-01'33.70"
18	15-48'51.30"	120-01'13.50"
19	15-48'31.60"	120-01'13.50"
20	15-48'31.60"	120-01'23.70"
21	15-48'21.80"	120-01'23.70"
22	15-48'21.80"	120-01'13.50"
23	15-48'12.10"	120-01'13.50"
24	15-48'12.10"	120-01'23.70"
25	15-48'02.40"	120-01'23.70"
26	15-48'02.40"	120-01'33.80"
27	15-48'31.60"	120-01'33.80"
28	15-48'31.60"	120-01'23.70"
29	15-48'41.40"	120-01'23.70"
30	15-48'41.40"	120-01'43.70"
31	15-47'52.60"	120-01'43.70"
32	15-47'52.60"	120-02'24.20"
33	15-47'42.80"	120-02'24.20"
34	15-47'42.80"	120-02'34.20"
35	15-47'23.00"	120-02'34.20"
36	15-47'23.00"	120-02'44.50"
37	15-47'33.00"	120-02'44.50"
38	15-47'33.00"	120-02'54.50"
39	15-47'23.00"	120-02'54.50"
40	15-47'23.00"	120-03'24.60"
41	15-47'00.00"	120-03'24.60"
42	15-47'00.00"	120-01'54.40"
43	15-47'04.00"	120-01'54.50"
44	15-47'04.00"	120-01'44.30"
45	15-47'13.40"	120-01'44.30"
46	15-47'13.40"	120-01'34.00"
47	15-47'04.00"	120-01'34.00"
48	15-47'04.00"	120-01'23.80"
49	15-47'33.00"	120-01'23.80"
50	15-47'33.00"	120-01'03.70"
51	15-47'23.20"	120-01'03.70"
52	15-47'23.20"	120-01'13.80"
53	15-47'13.50"	120-01'13.80"
54	15-47'13.50"	120-00'43.40"
55	15-47'06.00"	120-00'43.40"
56	15-47'06.00"	120-00'33.30"
56-A	15-47'25.40"	120-00'33.30"
56-B	15-47'25.40"	120-00'40.20"
56-C	15-47'35.30"	120-00'40.20"
56-D	15-47'35.30"	120-00'33.30"

58	15-47'43.00"	120-00'23.20"
59	15-47'52.70"	120-00'23.20"
60	15-47'52.70"	120-00'33.30"
61	15-48'02.30"	120-00'33.22"
62	15-48'02.30"	120-00'00.00"
AREA: 951.5734 Hectares		

4.0 Description of the Existing Environment

Below is a brief description of the project area and its vicinity focusing on the physiography, location and access, drainage system, vegetation and land use. Data used in the description is based on literature researches and through actual and or preliminary geological and topographic surveys.

4.1 Terrain and Physiography

The proposed contract area lies along the northwestern flank of the Zambales Range. One of the six (6) major terrains or tectonic elements delineated in the northern Philippines, having origins far from their present sites and having moved large distances with respect to adjacent terrains (Karig, 1981). The Zambales Range or better known now as the *Zambales Ophiolite Range* can be followed southwards from Subic Bay, beneath the sea floor on magnetic and gravity profiles, to Ambil Island in Mindoro and adjacent Islands where it is tipped up steeply, along a west-northwesterly strike and juxtaposed against the metamorphic terrain of Lubang and Northern Mindoro (Karig, 1981).

Gently rolling slopes to rugged topography generally characterizes the proposed contract area. Most of the claim areas lies in a plateau-like area with elevation varying between 200 meters to about 350 meters above mean sea level.

4.2 Accessibility

Municipality of Sta. Cruz is accessible to all types of vehicles using various road networks in going to this western section of Zambales. Victory Liner, a public bus transport has a frequent service between Manila and Olongapo City via the North Luzon Expressway, thence thru Zambales-Bugallon Road up to the town of Sta. Cruz.

The claim area could be reached through the Guisguis-Guinabon Road by about 30 kilometers of gravel road east the town.

4.3 Drainage System

The headwaters and tributaries of Nayom and Sta Cruz River Systems drain the northern section of the proposed contract area. Whereas, the headwaters and tributaries of Cabatuan River System drain the central section, while Luis River System drain the southern section of the area. All these river systems empty its load towards the South China Sea.

4.4 Vegetation

logging and subsequent slash-and-burn farming. Flatlands/lowlands some distant away from the applied area are seasonally planted to cash crops such as rice and vegetables. Other areas not devoted to seasonal crops are sparsely vegetated with second growth trees that can be found mostly in moderately elevated sedimentary formations. The ubiquitous cogon is present in most of the mentioned other areas.

Pine trees such as Agoho and Mindoro Pines grow in central and southeastern sections of the proposed contract area. These are the products of the reforestation initiatives of the previous mining and exploration activities in the area.

4.5 Land Use Classification

Based from the Municipal Planning and Development Office of Sta. Cruz, through its 1996 Municipal Planning and Development Program, the applied area is classified as *Forest Land*. Though a few numbers of families settled in the vicinity of the former Acoje Mines, there is still no other significant or observable land utilization in the area. The other portion of the applied area, especially at the low lying areas, are seasonally planted to cash crops and covered with cogon and other tropical grasses.

5.0. Description of Exploration Work

The program hereby presented outlined and details the schedule of activities, specific targets, objectives, outputs and budget requirements.

The main objective of this exploration program is to characterize and assess fully the nickel, iron, cobalt and other associated mineral contents of the nickeliferous laterite deposit in the subject area in order to delineate a sizeable resource that can be economically developed as well as exploited in the near future. It also aims at geologically documenting the nature, type and depositional character of the laterite deposit so that this can well serve as basis or model for further exploration work in other areas of similar geologic setting.

This program aims at defining the reserve potential through a progressive drilling campaign from 200 meter x 200 meter grid interval to a final 50 m x 50m or 25 m x 25 m. grid patterns.

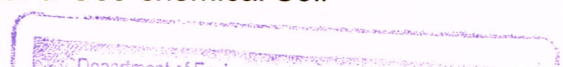
5.1 Exploration Work Program

Below is the exploration work program intended to be carried-out within the proposed contract area and consists of the following phases:

5.1.1. Preliminary Exploration Activity

- a. Literature/Research Work
- b. Data collation and compilation

5.1.2. Reconnaissance Geological & Geo-chemical Soil Survey



- a. Geological Mapping
- b. Re-sampling of Old Workings
- d. Hand Auger and Winkie Drilling

5.1.4. Topographic and Ground Control Survey

5.1.5. Follow-up / Detailed Survey

- a. Geological Mapping
- b. Geochemical Soil Survey
- c. Trenching & Test Pitting
- d. Hand Auger and Winkie Drilling

5.1.6 Project Feasibility Study, Volume & Reserve Estimation and Environmental Impact Assessment Study

5.1.1 *Preliminary Exploration Activity*

Prior to the actual fieldwork, compilation of all available data will be conducted to gather a better understanding of the geology, structure and mode of occurrence of the laterite deposits in the area. Previous test pits and drilling data including location, geologic logs and corresponding assays, shall be reviewed. A re-assessment of the method used in sampling and calculations of previous reserve is also important to be studied. Preliminary topographic and base maps shall be prepared with promising sites and or targets shall be plotted. After all the necessary literature researches and data base have been accomplished, the supplies and materials for the field survey shall now be purchased.

Below are the previous works carried out in the ***proposed area and vicinity*** during and under the old tenement rights such as Commonwealth Act No. 137 and Presidential Decree No. 463:

In 1967, Global Mining Resources, Inc. (Global) laid claim to over 70 sq. kilometers of mineral land adjacent to the proposed applied area for nickeliferous laterite deposit. Also in the 1960's and early 1970's, Benguet Consolidated, Inc. (BCI) through an operating agreements with several mining companies such as Zambales Chromite Mining Company, **Filipinas Mining Corporation** and Consolidated Mines, Inc. covering a total area of about 35 sq. kilometers conducted an integrated and an extensive exploration activities over the respective claim areas of the said companies.

During the said exploration periods, undertaken by Global and BCI on their respective areas, extensive geological mapping, ground control surveys and subsurface investigations were conducted by both companies for the verification of the commercial content of the nickel deposit. The BCI on its 1972 Progress Report to Filipinas Mining Corporation, delineated substantial reserve averaging less than 1.3% Ni. BCI conducted "a total of 63 test pits with an aggregate of 299 meter advance or an average depth of 4.7

distance from and as in-fill of the 1971 Phase I test pits at 200-m centers. The report also indicated that the test pits were not deep enough and were not able to penetrate the saprolite zone. An additional surface geological mapping was reportedly conducted.

In 1976, after the necessary evaluation and assessment of all exploration data on the nickel deposit gathered by the said two exploration companies, Falconbridge Nickel Mines of Toronto, Canada (Falconbridge) signed up with Global and BCI to further explore the properties and came up with a feasibility study for the joint venture project. From 1977 to 1983, Falconbridge dug test pits on a 100-m center grid spacing in the more prospective areas where nickel ore (laterite and saprolite) averages 1.7% Ni.

Falconbridge stopped the project in August 1983 due to low nickel metal prices, increasing operating costs and unstable political conditions in the country. BCI relinquished then its right to operate in the area and dropped or returned the mineral claims to the original claimowners.

As of May 1983, the aggregate total proven probable and possible reserves for all the properties explored was placed 56.9 Million DMT of 1.7% Ni (average grade). About 11.9 Million DMT of this is within the Insular Chromite Reservation Parcel 3.

5.1.2 Reconnaissance Geological and Geo-Chemical Soil Survey

On the basis of the data and information gathered and generated during the previous activities, a reconnaissance to re-orient geological mapping and soil and when necessary, rock sampling shall be conducted. All the different rock types will be mapped out and characterize accordingly. Nickel laterite deposit which is the target commodity will be given the utmost consideration in the conduct of the survey. Likewise, rocks that are related or associated to nickel laterite deposition will also be given attention, since they can be utilized in further understanding of the laterite characterization in the area. Route (roads, rails) mapping and traverses along stream channels and on areas where suitable rock exposures can be noted will be carried-out. A topographic map of scale 1:50,000 will be used as base map. A sampling density of around two (2) samples per square kilometer will be implemented.

Rock samples of interest will be sent to the laboratory for chemical and petrographic analyses.

Simultaneous with geological site selection and sampling is a survey to orient the geochemical sampling medium or media and procedures. This activity shall be conducted purposely to check and verify the best sampling medium and the best soil horizon to sample. From the previous studies

groups in the early 80's, both soil and stream sediment having minus 80 mesh (BSS, 177 micron opening) fraction of both media was shown to provide adequate contrast. *The company is bent on using soil as the sampling medium for its geochemical survey.*

This activity shall be carried-out by a geochemist and two (2) geo-technicians or aides for a month. The density of base of slope and ridge soil geochemical sampling is 3 to 5 samples per square km. This sampling density may be increased to 7-10 samples in areas with widespread and thick laterite occurrences.

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Data gathered from rapid reconnaissance and from previous data acquired during "BCI" days shall be incorporated to come up with a survey suited for a 1:25,000 to 1:10,000 scale mapping.

A total of 50 previously dug test pits (old workings) with elevated nickel values shall be rehabilitated and re-sampled. Channel sampling on excavated faces shall be implemented. Samples generated from each sampling points shall include original/primary sample, duplicate and standard sample. These samples shall then be subjected to Quality Control Testing Procedures. Sampling shall be done in a systematic way so that possible trends in the chemical character of the deposit may be determined.

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Approximately 100 samples will be analyzed for Ni, Fe, Co, MgO and Al by Atomic Absorption Spectrometry (AAS) to verify and better understand the quality or values of the commodities of interest.

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A topographic and location survey of the delineated areas is indeed necessary in mine development planning and design and for the establishment of legal boundaries. The resulting topographic map is useful in accurate design of grid pattern

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- c. Determination of the true geographic position, horizontal and vertical control and true elevation of mineralized areas, trenches, test pits and drill holes; and
- d. Establishment of legal boundaries of the area applied for.

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A team of 2 exploration geologists and a geochemist, 6 geo-technicians/geologic aides and varying numbers of support personnel (locals) shall compose the exploration team.

5.1.6 Feasibility Studies

After the deposits have been block accurately, a resource estimation and a mine feasibility study shall be undertaken to determine the economic viability of the project. This will be followed by a mine planning and design. Simultaneous with the preparation of the mine feasibility study, is the Environmental Impact Assessment Study (EIA) which, gather and establish baseline information on various critical environmental aspects and to better safeguard and support the proposed project

6.0 Identification of Potential Environmental Effects

6.1 On Land

6.1.1 Surface Disturbance Off the Mineral Property

Road Construction - Earth moving activities during road construction will displace rocks and soil along road cuts, which could later be transported by run-offs into existing watercourses.

Dusts coming from motor vehicles that travel along roads in built-up areas can pose health hazards to people who have taken up residences nearby.

Silts and other forms of sediments that are carried by surface run-offs may be deposited in watercourse that could adversely affect water quality and increase turbidity. This could also affect the groundwater recharge and/or percolation thus adversely affects drinking water supply, in the nearby community of lands downstream.

Photosynthetic processes of the useful aquatic flora in the affected waterways may be reduced and could negatively affect whatever benthic activities of marine organisms and other aquatic habitats that could still be present.

Migration of forest habitat as a result of the noise and other disturbances created by equipment and exploration activities.

The construction of exploration access roads to various sites could increase accessibility to the remaining forest cover and thus open these areas to the exploitation of man, i.e., slash-and-bum kaingin farmers.

Temporary camps can generate organic and inorganic waste that may contaminate creeks and/or rivers.

6.1.2 Surface Disturbance On the Mineral Property

Road Construction - Earth moving activities during road construction will entail removal of the vegetative cover, no matter how limited. The affected area will then be subjected to the erosion processes by the torrential rains and/or run-offs. However, during exploration, the clearing and brushing of foot trails will create only minimal disturbance on vegetation.

Holes and/or depressions are created in the ground during trenching, test-pitting and aditting sampling. However, only a minimal number of test pits and trenches will be introduced during the exploration period.

Survey Traverse and Stations - a survey program to locate the boundaries, monuments and drill holes will be

clearing minor negative environmental effect on the vegetation covers.

Field camp facilities - temporary campsite will be located at least 100 meters away from creeks and/or river system and will be provided with proper latrine facilities. A waste segregation scheme will be introduced to encourage recycling and to lessen the volume of waste generation. Biodegradable waste will be dumped in pits which will be covered with soil and re-vegetated before site abandonment.

Waste / rock dumps - during the course of exploration, very minimal amounts of rock or waste will be produced. It is projected that only the channeling, trenching or test pitting activities will be introduced in the area on a limited basis, there will be slight no adverse effects on land during the exploration period.

6.2 On Hydrology and Water Quality

6.2.1 Potential Generation of Acid Mine

Due to the nature of the minerals to be explored, acid generation potential is nil. Acid Mine or Acid Rock generations are likely to occur in areas where concentration of sulphide deposits or mineralization is present. The proposed area is underlain largely with rocks having **ultrabasic** in composition.

The proposed exploration activity may not generate acid mine even during test pitting or trenching or even during drilling. However, stockpiled materials having sulphide minerals or have sulphidic ores may generate acid run-off when exposed to air and water. Oxidation is the main chemical reaction and reason for an acid drainage.

6.2.2 Siltation and Pollution of Surface Waters

Silts and other forms of sediments that are carried by surface runoffs may be deposited in watercourses which could adversely affect water which will result in changes to the drainage patterns and even induce minor flash floods in some low areas. We shall provide proper drain channels and direct the flow to siltation / sediment traps.

6.2.3 Changes in Hydrology

With the very limited surface work area and shallow excavations, significant changes on hydrology are not expected. The drainage pattern, the flow rate and the capacity of stream channels will not be affected with this exploration work.

6.3 On Ecology

change the original land from which could adversely affect the natural aesthetic view of the area.

Migration of forests habitats as a result of noise and other disturbances created by equipment and exploration activities pose a serious environmental concern. Effects of noise on the ecology is likewise nil as the use of drilling machines will be managed by providing rubber pads to minimize vibrations, appropriate muffler to regulate noise level and proper lubrications of all moving parts.

Dusts coming from motor vehicles that travel along roads in built-up areas can pose health hazards to people that have taken up nearby residences.

Displacement and/or loss of flora and fauna may occur as a result of clearing operation and noise generation.

6.4 On Socio-economic Effects

6.4.1. In this regard, avenues of change in living conditions could be opened with the creation of new opportunities like employment and other income generating activities with accompanying provisions for education, health, business and other mobility-related activities which overall carries a positive environmental effect.

7.0 Environmental Management Measures Including Costs

From the preceding discussions it was clearly predicted and identified the possible impacts of the exploration activities. From such prediction and identification the proponent likewise prepared and laid-out corresponding mitigating measures to minimize if not totally eliminate all the impacts the project may generate. From the facts presented, it can be noted that most are of short- term duration.

Below are the following measures that the proponent will undertake:

7.1 Progressive Rehabilitation of Disturbed Land

As a management measure, adequate design will be implemented for any new road construction required giving emphasis to soil condition, drainage and proximity to waterways. Roads that are properly laid out and constructed on moderate gradient will result in fewer incidences of soil disturbance. Planning of new roads will give consideration to host areas to be accessed first. New and existing roads permanently monitored during rain periods, so that appropriate measure can immediately be implemented to protect and/or minimized erosion and siltation of water courses. Whenever necessary, road sections that are likely to be eroded by surface run-off will be amply protected by rip-rap or retaining walls to prevent erosion. Trees will also be planted at roadsides. We shall use existing access track as much as possible.

7.2 Maintenance of Soil Stockpile

It is important that the excavated soil shall be stockpiled properly in

waters. The sub-soil and the top soil shall be properly separated for easy and proper backfilling. Small drainage canal shall be constructed to divert running water in coming to the stock file materials.

7.3 Maintenance of Roads to Minimize Dust

Dust emissions on roads are maybe confined outside the proposed contract area. The site is traversed with network of trails that are more than enough to conduct geological mapping and rock sampling. These trails are partly vegetated with tropical grasses that serve and prevent dust emissions. Established roadways can only be found at the approached of the claim area, however, this roads will be sprayed with water to minimize dust, especially during the height of dry season which can truly affects local residents.

7.4 Handling of Toxic and Hazardous Materials

Only during drilling that chemicals maybe used. As per previous discussion, the company will not be using toxic or hazardous chemicals in the conduct of drilling. An alternative water based fluids and mud will be utilized instead. Fuel and oil that will be used by the drill equipment will be properly stored away from water-courses to prevent contamination. A drain catch will be constructed so that in case a spillage happens it will be confined in certain area only. In addition, the drill machine is equipped with drill platform that can handle spillage of 3-5" of liquid.

7.5 Accommodation of other Economic Activities in the Area

With the exploration activities in the area, an initial livelihood program may be planned- out to help add income to the residents.

7.6 Alternative Plans, if Special Habitat of Flora and Fauna are Affected

Based from previous discussion on the Biological environment, the area of interest has some wildlife species but not the rare ones. This will also hold through with the floral system of the area. Plant nursery will be put up in certain area of the proposed site to support the rehabilitation program and reforestation of the disturbed areas.

7.7 Socio-economic Mitigating Measures

A courtesy call to the people in authority in the area shall be carried-out prior to any exploration activity in the area. Acquaintances and consultative meetings to discuss the proposed exploration works with the proper persons and the people of the community will be conducted.

Preference will be given to the local residents in hiring personnel during the entire program.

7.8 Abandonment

The progressive rehabilitation conducted during the exploration works will provide answer to the abandonment plan since it will

readily and immediately rehabilitate the area. The adaptation period is very short which in turn very effective and appropriate.

The following are the proposed measures and procedures in the conduct of an abandonment and rehabilitation programs affected by the exploration:

A. Camp Site:

All temporary facilities and or structures shall be removed and disposed off in a proper manner. Re-usable materials shall be kept or be donated for some noble use.

Compacted surface area of the camp shall be cultivated and planted with appropriate vegetational covering common to the area. Temporary garbage pit for organic wastes shall be backfilled properly to restore disturbed surface.

B. Drill Site:

All drill sites shall be restored in an environmentally acceptable manner. Sedimentation ponds or drill sumps shall be back-filled. Disturbed soil shall be restored and re-vegetated.

Empty drums or containers shall be removed, returned or resale to suppliers for further use if applicable. Safe containers can be donated to the local community.

Oil spillages is projected to be nil or minimal due to the drill platform that will be employed. It is capable of collecting 3-5 inches of spilled liquid within the influence of drill equipment.

Disturbed surfaces after each drilling, shall be re-vegetated immediately to adopt promptly to the local surrounding.

C. Access Road:

Haul roads for drill machine and its accessories contributes largely to areas projected to be disturbed during detailed stages of exploration. Drill machine shall be carried-out along sledge pulled by several numbers of carabaos. Sledge trails shall be re-vegetated after being used.

D. Unstable slopes:

The proposed project area has an approximate slope gradient between 5-10%. During the course of exploration study, any subsurface activity with resultant unstable slopes shall be immediately remedied with a geotechnical engineering works and replanted with fast growing trees and other vegetative covers to ensure stability. Significant areas having unstable slopes not related the exploration shall be noted and appropriately informed authorities of its potential risk.

E. Control Measures for Acid Mine/Rock Drainage

In the exploration period, sources of acid run-off are outcrops subject to subsurface investigation such as test pits, trenches and even drill holes. The following are the control measures in the generation or occurrence of acid rock drainage.

1. In trenches or test pits:

Stockpiled materials having sulphide minerals or have sulphidic ores coming from the outcrops may generate acid run-off when exposed to air and water. Oxidation is the main chemical reaction and reason for an acid drainage. To control occurrence, is to neutralize potential acid materials (*pam*) with lime or limestone. Other measures intended to be carried-out is to bury or isolate *pam* with clay cover to prevent entry of air and water. But the best measure to be implemented is the immediate back filling and restoration of these ground openings before any significant chemical reaction take place.

2. In Drill Holes:

All drill holes after an extensive study shall be appropriately plug to prevent contact of sulphidic ores, *should there be any*, with air and water. Selected holes for future study shall be properly cemented and inserted with plastic pipe with cap. These holes may serves as monitoring well and avenues for several studies to be conducted in the future specially in the conduct of an environmental impact assessment.

8.0 ENVIRONMENTAL MANAGEMENT COST ESTIMATES

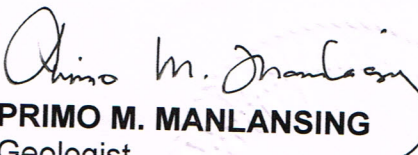
For the whole work involved, the environmental management cost estimate is
PhP 1,500,000.00

9.0 Attachment

**Environmental Matrix, Schedule of Activities and Budget
NAMRIA MAP in scale of 1:50,000**


10.0 Name and Signature of Applicant or Person preparing the Environmental Work Program

Prepared By:

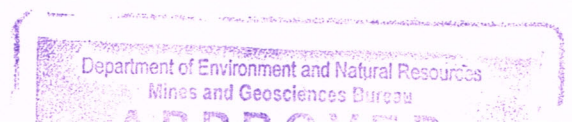

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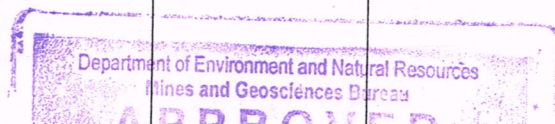
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SUMMARY MATRIX IMPACT AND MITIGATING MEASURES

Activity	Impact	Mitigating Measures	Timing	Cost
Construction/restoration or upgrading of access roads	Loss of vegetation	<ul style="list-style-type: none"> Use existing access tracks as much as possible 		<p>The amount of PhP 1,500,000.00 representing more than the 10% cost of exploration is allotted for the implementation of this work program.</p> <p>The amount will be apportioned to each item of the work program.</p>
	Siltation/Turbidity	<ul style="list-style-type: none"> Put up settling ponds and/or sediment traps 	Immediately upon implementation of earth works	
	Erosion	<ul style="list-style-type: none"> Minimize slope stockpile Provide drain tunnels Minimize stockpiling and accumulation of unwanted debris or waste Promote growth of grasses/shrubs over the stockpile to prevent erosion Conduct regular road maintenance 	- same as above-	
Excavations	Depression of selected areas due to excavation	<ul style="list-style-type: none"> Backfill the area immediately after target completion 	Implement after completion	
	Entrapment of stray animals or children	<ul style="list-style-type: none"> Fencing off of excavations using ropes and twigs Provide warning device and safety reminders to passersby 	Immediate implementation upon start of activity	
	Erosion	<ul style="list-style-type: none"> Topsoil should be stockpiled separate from subsoil and maintain low angles Stockpiles or erosion prone areas should be provided with drain channels to prevent erosion Stockpiled should be put at low prone erosion areas 	Implement as project progresses	
	Soil Compaction	<ul style="list-style-type: none"> Ripping the contour to promote natural plant growth Ensure that slope are stabilized to prevent erosion 	Done simultaneously with activity	

		<p>stockpiled topsoil</p> <ul style="list-style-type: none"> Established a nursery during the exploration program for progressive rehabilitation maintain the natural specie of the area 	- same as above-
Hydrology and Water Quality			
Excavation	Acid Rock drainage	<ul style="list-style-type: none"> Immediate backfilling of test pits and plugging of drill holes after study is completed Test pits and trenches will be provided with canvass to prevent water from seeping into the excavation and create adverse chemical reaction 	Done simultaneously with on-going project
Use of Drilling Chemicals	Water and Soil Contamination	<ul style="list-style-type: none"> Will use biogradable fluids Refueling areas shall be provided with bunds and lined with impervious materials to prevent soil contamination 	-same as above-
Clearing of Vegetation	Siltation/Turbidity	<ul style="list-style-type: none"> Provide silt/sediment traps Provide temporary siltponds and permit the release of clear water only. Desiltation should be done regularly to make ponds efficient. Mixed silt materials with soil stockpiled 	Done simultaneously with project
Camping	Contamination of river due to generation of human waste	<ul style="list-style-type: none"> Locate campsite at least 100 meters away from creek/river system and provide proper latrine Introduce waste segregation 	Implement immediately upon start of operation

		avoided and noise generation kept to barest minimum		
Waste generation	Foul odor, health problem, water pollution, visual nuisance, displaced sensitive flora and fauna	<ul style="list-style-type: none"> A specific site away from any source of water will be designated for waste dumping, organic waste will be buried in pits, inorganic waste collected and taken out of site for possible recycling 	Implemented immediately upon start of operation/program	
Site Clearing	Loss of rare specie of flora and fauna	<ul style="list-style-type: none"> Areas identified as special habitat of flora and fauna will be avoided and its existence will be reported to government agencies 	-same as above-	
Socio-economic Effects				
Project Implementation	Displacement of socio-economic activities	<ul style="list-style-type: none"> Promote employment opportunities by giving priority on available job Provide just compensation to residents on private areas disturbed by the project 		
Misinformation on project implementation	Disharmonious relationship between the residents and contrators	<ul style="list-style-type: none"> Conduct IEC activities before the project implementation to keep the personnel & staff, residents and LGU well informed of the programs of the company Keep an open communication with the community through regular meetings to give an update on the project status Meet the community after the project has been accomplished to give them information with regard to the findings and future company plans involving the area 	Progressively implemented to keep abreast with the program	



		<p>should be regularly done</p> <ul style="list-style-type: none"> • Roads should be sprayed with water during summer period • Provide table drains at water prone areas to prevent erosion 		
Unsafe working condition	Health hazards to workers	<ul style="list-style-type: none"> • Provide all employees with protective equipment and medical attention • All workers should be required to submit medical certificate prior to hiring so that they are fit to work 	Implemented throughout the life of the project	
Increase of migration				
Increase of migration	Disharmonious relationship with residents and lost of tradition or culture	<ul style="list-style-type: none"> • Limit the hiring of non-resident workers to technical personnel • Priorities for employment shall be given to all resident of the concerned municipality 		