

**ANNEX "A"**

**SECRETARY CERTIFICATE**

## SECRETARY'S CERTIFICATE

I, Jaime G. Lao Jr., of legal age, Filipino and resident of Km. 12 Diversion Road Panacan, Davao City, after being sworn in accordance with law, hereby depose and state:  
1) That I am the duly elected and qualified Corporate Secretary of MT SINAI MINING EXPLORATION & DEVELOPMENT CORPORATION, Philippine corporation duly organized and existing under the laws of the Republic of the Philippines, with office address at Km. 12 Diversion Road Panacan, Davao City.

2) That at the special meeting of the Board of Directors of the Corporation held at Km 12, Diversion Road, Panacan, Davao City on the 20th day of August 2008, the following resolution was unanimously approved, a legal quorum being present and voting :

### Board Resolution No. MSMEDC - 08-10

**"A RESOLUTION AUTHORIZING VICENTE T. LAO TO CONDUCT BUSINESS AND TO ENTER INTO CONTRACT OF WHATEVER NATURE FOR AND IN BEHALF OF MT. SINAI MINING EXPLORATION DEVELOPMENT CORPORATION WITH ANY ENTITY BE PRIVATE OR GOVERNMENT"**.

WHEREAS, Mt. Sinai Mining Exploration and Development Corporation is a fast growing company, duly constituted to conduct business in the country on mining and exploration development;

WHEREAS, to ensure its feasibility and advancement the Board of Director of the Corporation had unanimously approved authorizing VICENTE T. LAO to conduct, sign, and execute contracts of whatever nature entered into by Mt. Sinai Mining Exploration & Development Corporation with any entity be private or government;

RESOLVED AS IT IS IT HEREBY RESOLVE THIS RESOLUTION AUTHORIZING VICENTE T. LAO TO CONDUCT BUSINESS AND TO ENTER INTO CONTRACT OF WHATEVER NATURE FOR AND IN BEHALF OF MT SINAI MINING EXPLORATION AND DEVELOPMENT CORPORATION WITH ANY ENTITY BE PRIVATE OF GOVERNMENT.

That the foregoing information is in accordance with the records of Mt. Sinai Mining Exploration and Development Corporation.

20 FEB 2009

IN WITNESS HEREOF, I have hereunto set my hands on this \_\_\_\_\_ day of \_\_\_\_\_ at Davao City, Philippines.

JAIME G. LAO JR.  
Corporate Secretary

Subscribe and sworn to before me this 20 day of FEB 2009 in Davao City, affiant exhibited to me his Community Tax Certificate No. 17804819 issued on January 6, 2009 at Davao City, Philippines.

Doc No. 13  
Page No. 2  
Book No. 522  
Series of 2009

ROBERTO S. DELA CRUZ  
NOTARY PUBLIC  
UNTIL DECEMBER 31, 2009  
PTR NO. 7309516-01-08-09  
TIN 105-259-637  
IBP NO. 736263; 12-10-08  
ROLL NO. 25242; 6-20-74  
SSS NO. 09-0116658-0  
NACLE COMPLIANCE NO. 11-0007269

# **ANNEX "B"**

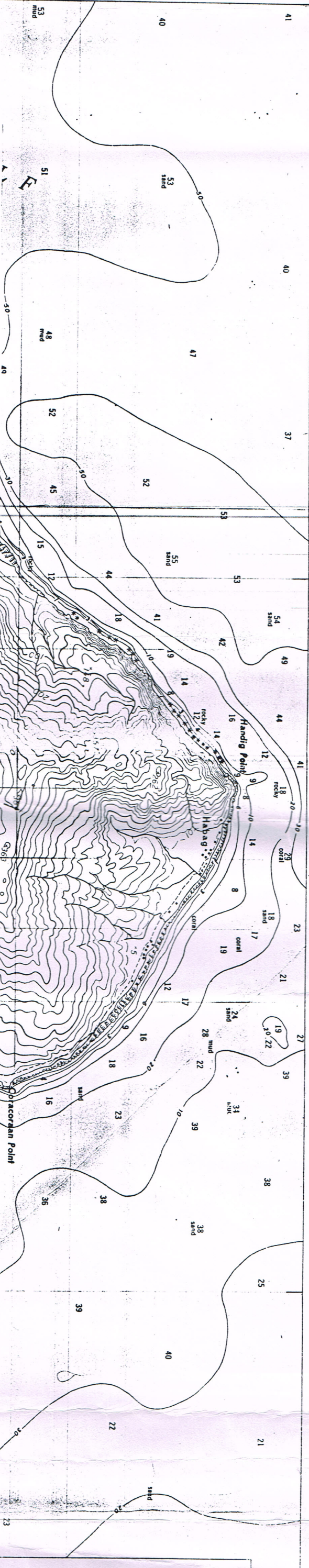
## **LOCATION MAP/SKETCH PLAN**



HOMONHON

125°36'  
10°50'

45'



Cor.	Latitude	Longitude
1	10° 45' 00"	125° 42' 00"
2	10° 45' 00"	125° 42' 16"
3	10° 44' 10"	125° 42' 35"
4	10° 44' 16"	125° 43' 00"
5	10° 44' 15"	125° 43' 15"
6	10° 44' 00"	125° 43' 30"
7	10° 43' 58"	125° 43' 42"
8	10° 44' 00"	125° 44' 00"
9	10° 43' 30"	125° 44' 00"
10	10° 43' 30"	125° 42' 42"
11	10° 43' 38"	125° 42' 00"
12	10° 43' 56"	125° 42' 00"
13	10° 44' 15"	125° 42' 15"
14	10° 44' 25"	125° 42' 12"
15	10° 44' 25"	125° 42' 00"

Area = 510.1601 Has.

PLAN

PROVINCE OF SAMA

HOMONHON ISLAND

CASOGORAN BAY

10° 45' 00"

125° 42' 00"

125° 55'  
10° 47'



# HOMONHON

SHEET 4152 III



HOMONHON ISLAND

PROVINCE OF SAMAR

SEA

125° 42' 00"

10° 45' 00"

CASAGORAN BAY

Bataisan

Homonhon

Makapan Point

Cocoran Point

Handig Point

Habag

Canada

Handig Point

Habag

Canada

Handig Point

Habag

Canada

Handig Point

Habag

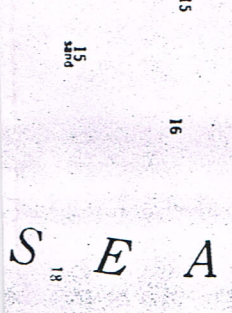
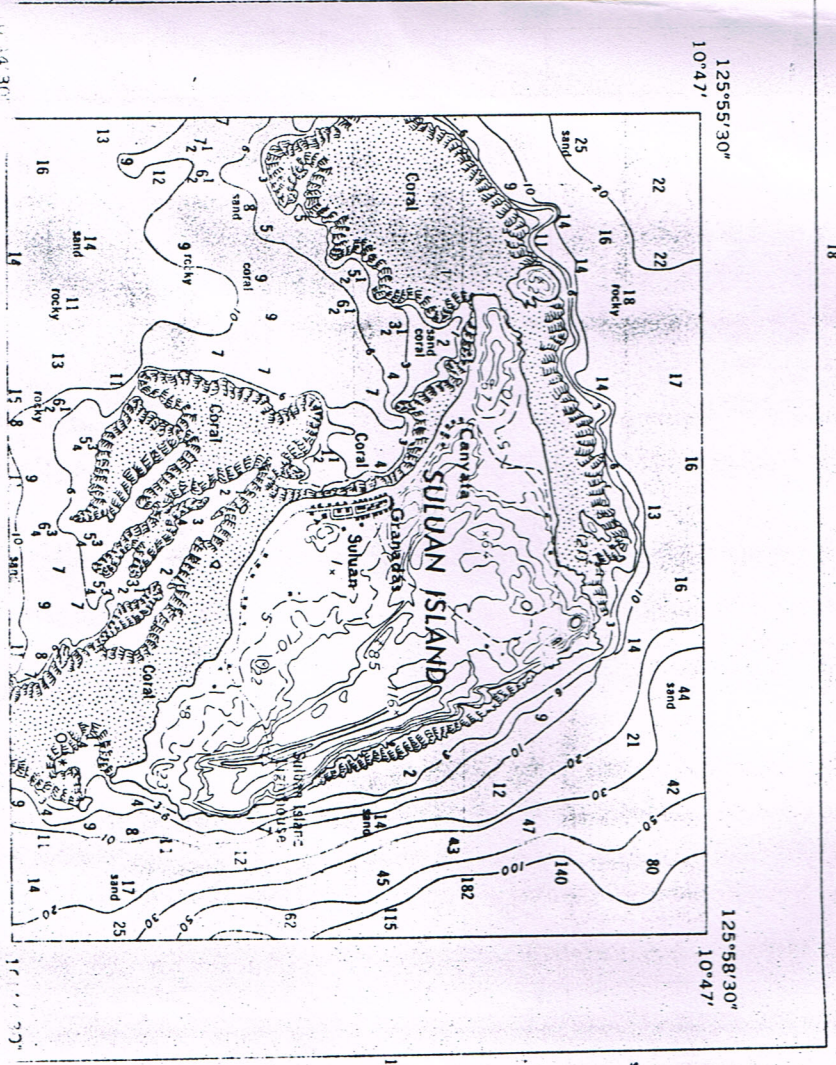
Canada

Handig Point

Habag

Canada

Handig Point



**MINERAL PRODUCTION SHARING  
AGREEMENT APPLICATION  
AS PREPARED FOR**

**MT. SINAI MINING EXPLORATION  
AND DEVELOPMENT CORPORATION**

SITUATED IN THE

BARANGAYS OF : CASUGURAN, CANAWAYON, ETC.  
MUNICIPALITY OF : GUIUAN  
PROVINCE OF : EASTERN SAMAR  
ISLAND OF : HOMONHON

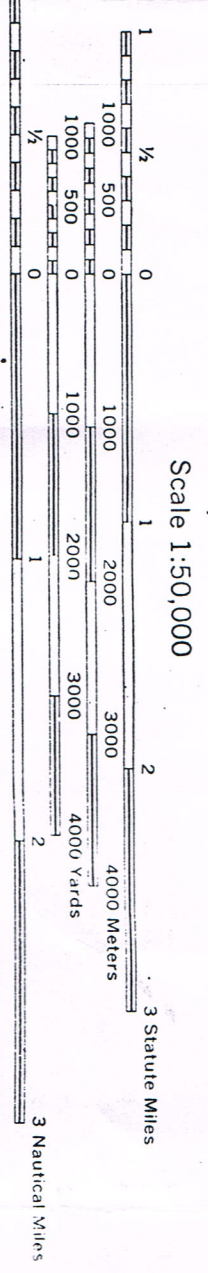
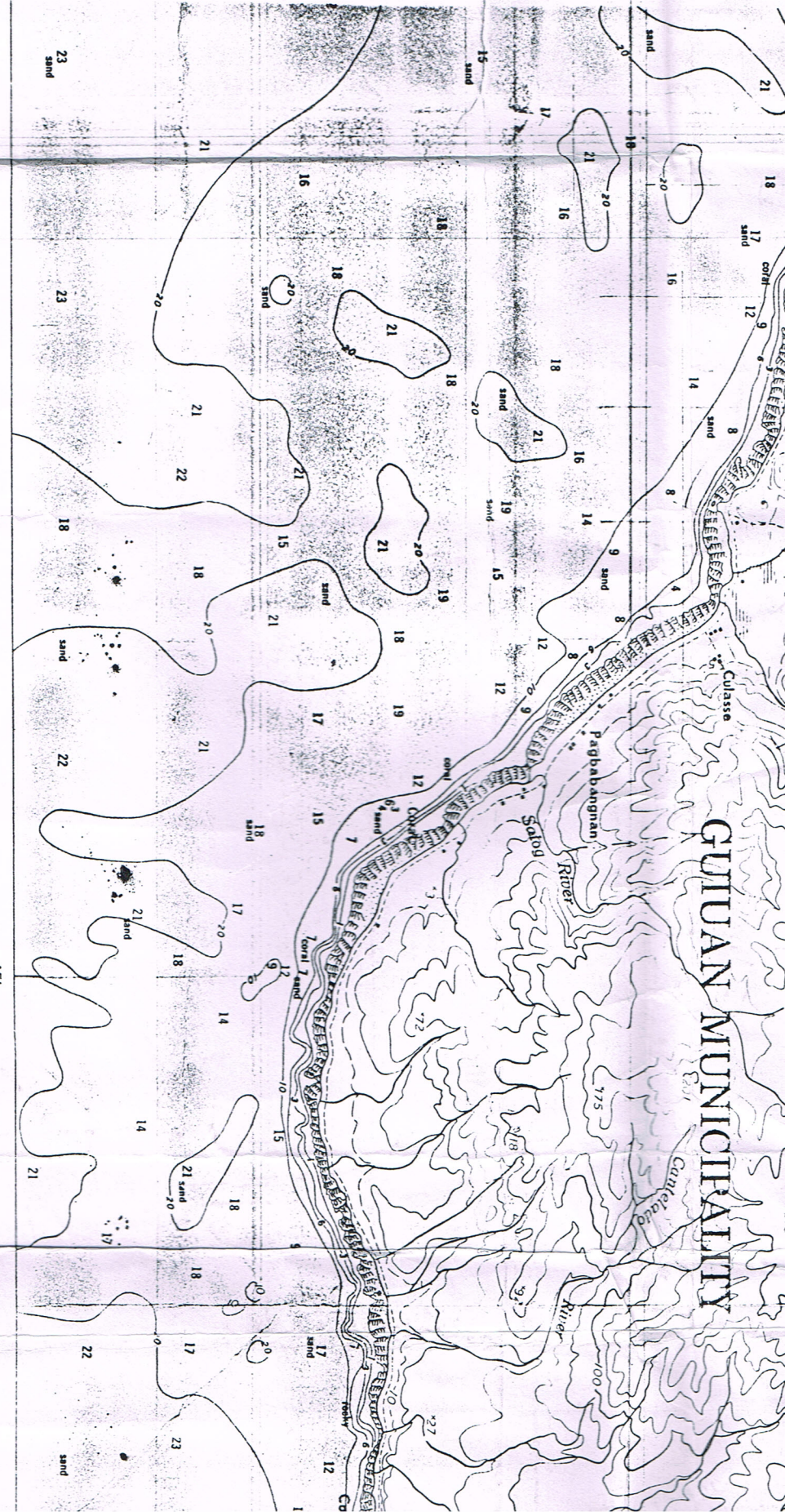
CONTAINING AN AREA OF : 510.1601 Has.

Prepared by :

*Reynato A. Filarca*  
**REYNATO A. FILARCA**  
GEODETIC ENGINEER  
LIC. No. 2909, 11-19 - 68  
PTR. No. 8236203, 01-06 -10

0°40' 125°36' 40° 45'

Users noting errors or omissions on this map are requested to mark here and refer directly to the NATIONAL MAPPING AND RESOURCE INFORMATION AUTHORITY, Fort Andres Bonifacio, Makati, Metro Manila



CONTOUR INTERVAL 20 METERS  
WITH SUPPLEMENTARY CONTOURS AT 5 AND 10 METER INTERVALS  
TRANSVERSE MERCATOR PROJECTION  
HORIZONTAL DATUM: LUZON DATUM  
HYDROGRAPHIC DATUM: MEAN LOWER LOW WATER

**LEGEND**

ROAD DATA 1952

On this map a lane is considered as being a minimum of 2.5 meters (8 feet) in width.

**ROADS**

- All weaner, hard surface
- Two or more lanes wide
- All weather, loose or light surface, two or more lanes wide
- All weather, wide surface, one lane wide
- All weather, loose or light surface, one lane wide
- Fair or dry weather, loose surface
- Cart track or trail
- Route markers: National, Provincial

- Built-up area
- Church: Chapel; Shrine or wayside cross
- School: Windmill; Water mill
- Lighthouse; Anchorage
- Levee; Wall
- Earthen dam; Masonry dam
- Power transmission line
- Depth curves and soundings in fathoms
- Sunken rocks; Forewreck flat
- Rocks awash; Reef
- Limit of danger; Submerged reef
- Wreck; Sunken; Exposed
- Wharf or pier; Sea wall
- Salt evaporator
- Woods brushwood; Scrub
- Tropical grass; Orchard
- Rice paddy; Swamp
- Nipa; Mangrove
- Vineyard

- Normal gauge, single track, 1.07 M (3'6")
- Normal gauge, double track, 1.07 M (3'6")
- Broad gauge, single track, 1.438 M (4'7")
- Broad gauge, double track, 1.438 M (4'7")
- Narrow gauge, single track, 0.61 M (2')
- Narrow gauge, double track, 0.61 M (2')
- Horizontal control point on Church
- Horizontal control point: Bench mark
- Spot elevations in meters: Checked; Unchecked

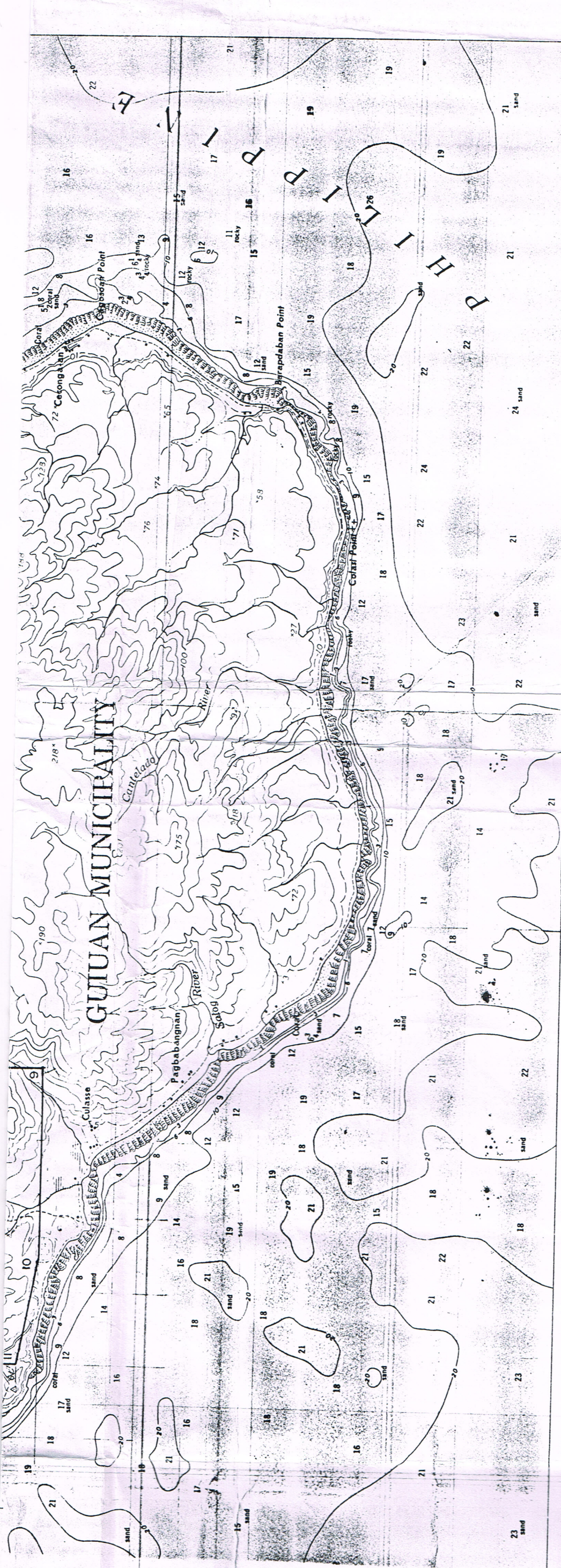
Republic of the Philippines

Department of Environment and Natural Resources

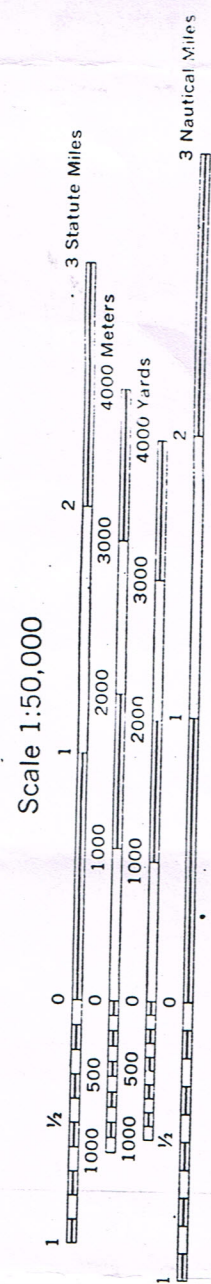
Published by

NATIONAL MAPPING & RESOURCE INFORMATION AUTHORITY

Metro Manila  
Fort Bonifacio, Makati  
**JOSE G. SOLIS**  
Administrator

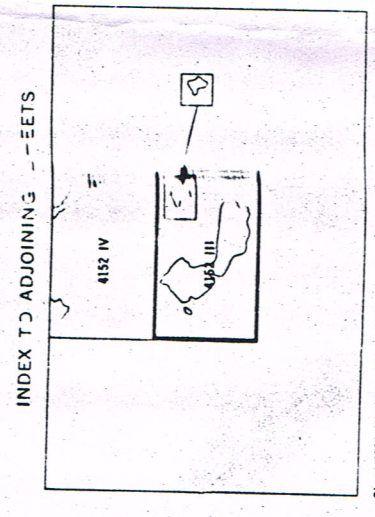


10°10'  
125°51'



Scale 1:50,000

CONTOUR INTERVAL 20 METERS  
WITH SUPPLEMENTARY CONTOURS AT 5 AND 10 METER INTERVALS  
VERTICAL DATUM: MEAN SEA LEVEL  
TRANSVERSE MERCATOR PROJECTION  
HORIZONTAL DATUM: LUZON DATUM  
HYDROGRAPHIC DATUM: MEAN LOWER LOW WATER



Sheet 4152 III falls within C-51-B S501, 1:50,000

Republic of the Philippines  
 Department of Environment and Natural Resources  
 Published by  
 NATIONAL MAPPING & RESOURCE INFORMATION AUTHORITY  
 Fort Bonifacio, Makati  
 Metro Manila  
**JOSE G. SOLIS**  
 Administrator

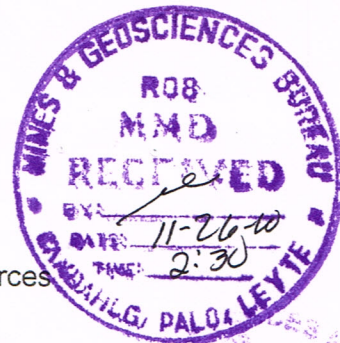
HOMONHON, HOMONHON ISLAND

**ANNEX "C"**

**EXPLORATION WORK  
PROGRAM**



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



**EXPLORATION WORK PROGRAM  
 FOR  
 MINERAL PRODUCTION SHARING AGREEMENT  
 (CONVERSION OF EXPLORATION PERMIT NO. EP-2009-000010-VIII)**

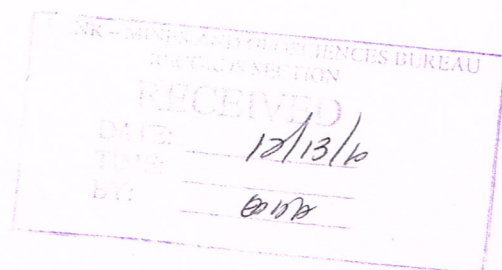
**1.0 Name and Address of Company/Proponent**

**MT. SINAI MINING EXPLORATION AND DEVELOPMENT CORPORATION**  
 Km. 12 Diversion Road, Panacan, Davao City

Telephone No. 0917-700-63-13

**Contact Persons:**

**JAIME T. LAO**  
 Operations Manager



**2.0 Location of Project**

The contract area of the Mineral Production Sharing Agreement (Project Area) covers an area of 510.1601 hectares and is located in the island of Homonhon, Municipality of Guiuan, Province of Eastern Samar. The Project Area is bounded by the following coordinates:

CORNER	LATITUDE	LONGITUDE
1	10° 45' 00.00"	125° 42' 00.00"
2	10° 45' 00.00"	125° 42' 16.00"
3	10° 44' 10.00"	125° 42' 35.00"
4	10° 44' 16.00"	125° 43' 00.00"
5	10° 44' 15.00"	125° 43' 15.00"
6	10° 44' 00.00"	125° 43' 30.00"
7	10° 43' 58.00"	125° 43' 42.00"
8	10° 44' 05.00"	125° 44' 00.00"
9	10° 43' 30.00"	125° 44' 00.00"
10	10° 43' 30.00"	125° 42' 42.00"
11	10° 43' 38.00"	125° 42' 00.00"
12	10° 43' 56.00"	125° 42' 00.00"
13	10° 44' 15.00"	125° 42' 15.00"
14	10° 44' 25.00"	125° 42' 12.00"
15	10° 44' 25.00"	125° 42' 00.00"

The municipality of Guiuan is located at the southernmost tip of Samar Island. It is bounded on the north by the municipality of Mercedes, on the east by the Pacific Ocean, on the south by the Surigao Strait, and on the west by the Leyte Gulf.

Clustered around the municipality are numerous islands and islets, like Tubabao, Calicoan, Sulangan, Homonhon and Suluan.

Guiuan is 109 kilometers south of Borongan and 154 kilometers from Tacloban. It has a total land area of 175.49 square kilometers. It is composed of sixty (60) barangays and the only town in the province with biggest number of island barangays.

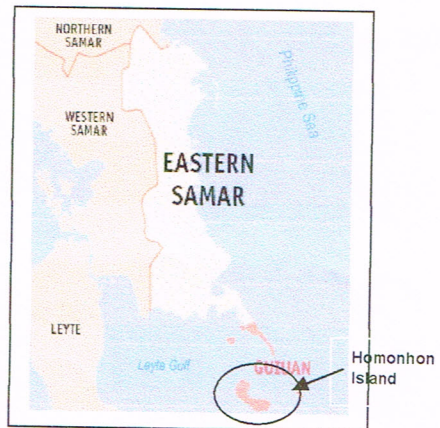
### 3.0 **Area or size of coverage**

The Project Area is approximately 510.1601 hectares.

### 4.0 **Project Area Description**

#### 4.1 **Terrain/Physiography**

The Project Area lies on a moderately cascading topography and lies just about above 50 meter mean sea level (msl) elevation area and going gentler higher to about about 120 meter msl elevation.



The Eraia River cuts the applied area along the north-south direction almost in the middle dividing it into two physiographic features. The western portion is almost domelike that rises to a height of 118 meter msl, while the eastern portion also rises gentler, interestingly at almost the same height. Generally, the western portion has a steeper slopes that the eastern side.

#### 4.2 **Accessibility**

The nearby regional capital of Tacloban City can be reached by land travel thru the numerous bus liners that ply from Manila to the City, sea-ferried crossing the San Bernardino Strait. Several buses and vans regularly shuttle passengers to Guiuan. Tacloban is also regularly serviced by scheduled flights from Manila. Alternatively, several bus companies have daily trips to Guiuan from Manila. Travel time is approximately twenty-one hours. Guiuan is also 2 hours away from the provincial capital, Borongan.

From Tacloban City, Guiuan can be reached via the South Samar Coastal Road passing along Basey-Marabut-Lawaan-Balangiga-Guiporlos-Quinapondan towns.

The Project Area lies with Brgy. Canayawon of Homonhon, which can be accessed via a motor boat ride directly to Canayawon.

#### 4.3 **Drainage System**

The Project Area is principally drained by the Eraia River and its tributaries flowing eastward. The river flows southward emptying into the Leyte Gulf. Tributaries of the Sapa River, located in the northwest side of the Project Area drain that portion that empties to the west of the island into the Casogoran Bay.

#### 4.4 **Vegetation**

Plant types over the Project Area may be classified under two main types: natural vegetation consisting of forest and grass/shrub categories; and cultivated vegetation, dominated by coconut trees. The Project Area is seldom devoted to farming, however.

Plant species belonging to the natural vegetation category are mostly found in the forest and uplands and consist principally of dipterocarps, bamboo, and various wild shrubs and plants of minor species.

#### **4.5 Land Use**

**Guiuan** is a 2nd class municipality in the province of Eastern Samar, Philippines. As of year 2004, it has a population of 43,647 people in 7,618 households.

Homonhon generally host a fishing communities. Guiuan, in fact is rich in fishery and aquatic resources. It is considered by the fisheries authorities as the best fishing belt in the region.

Guiuan's airport has a 2.8 km runway which could service light private planes, chartered cargo and military planes. Despite being partly renovated, it is still unused.

Guiuan also has a municipal and national seaport operational throughout the year. Telephone companies operating in the municipality includes TELECOM, Globelines and Bayantel. Smart and Globe cellular phone companies are also operational.

In 2004, Eastern Samar Electric Cooperative (ESAMELCO) was able to energize Guiuan, Calicoan Island up to Sulangan covering 37 out of 60 barangays. Island barangays are served with electricity through generator sets either privately-owned or operated by the barangay council. However, electricity shortages are frequent and subscribers experience weekly power failures, often lasting 24 hours.

The coastal waters offer almost all species of marine life: euchuema, abalone, ornamental fish, lobster and the Golden Cowry (known for its extraordinary golden sheen). They also offer delicacies, shellcraft products as well as fresh and processed marine products. Existing land use indicates a predominance of agriculture use which covers 38.2% of the total land area. Most of the agricultural lands are dominantly planted with coconut trees. Other major crops include vegetables, rootcrops, palay, corn, banana and other fruit trees, coffee and pineapple.

#### **5.0 Description of Exploration Program**

##### **Philippine Regional Geology**

Philippine laterites characteristically are overlain by reddish to yellowish brown soils composed mainly of iron and aluminum oxides and hydroxides. The general laterite profile, from surface to depth, is an iron cap grading to an oxide limonite zone and then to a deeper silicate saprolite zone.

The overlying iron cap is typically reddish-brown with iron concretions and low porosity and plasticity, with an average thickness of 1.8-3.6m although thick sections of 5 m may be encountered; moisture content is around 30%. The average metal content is typically 0.70- 0.75% Ni, 0.05% Co and 30% Fe.

The limonite zone can consist of two horizons, an upper light brown plastic laterite with coarse to fine granular texture and a lower yellowish brown to orange variegated laterite, both with high porosity of 40-46%. The upper zone thickness is typically around 1.5m and the lower zone thickness is 2.5-3.0m. Mature laterites in some parts of the Philippines have as much as 12 m or more of limonite. The average metal content for both horizons is typically around 1.0% Ni, 0.1% Co and 50% Fe.

The saprolite zone is greenish yellow to olive grey zone consisting of decomposed serpentine or clastic derivatives which grade from soft at the top to hard at the base. The thickness varies from 1-8m and moisture is around 30%. The average metal content typically is 1.7-2.0% Ni, 0.04% Co and 1-20% Fe.

Homonhon is traditionally known as a chromite mining area owing to the vastly exposed ophiolite-related mafic-ultramafic units hosting chromite layers, pods and lenses.

**5.0 Description of Exploration Program**

**5.1 Research Work (Gathering of additional baseline information)**

**Activity:**

- Preliminary works (survey, gathering and collation of previous works on the area).
- Information gathering for identifying the type and nature of the study, as well as, the proper approach from which the exploration activities are to be initiated.
- This phase will also determine the strategies and planned actions for the actual exploration works on the ground that should follow.

**Purpose:**

- To obtain baseline information which will include, but not limited to, the existing environmental condition, the degree of housing, industrial and infrastructure development as well as the demographic profile of the host barangays.
- To determine the appropriate initial exploration activities, approach and mobilization.
- To collate baseline geological and mineralization data.

**Expected Output:**

- Preliminary report containing baseline environmental, social, economic and geological/mineral information of the area with recommendation regarding what priority areas where actual exploration activities will be initiated.

**Duration:**

One (1) month.

**Coverage:** Exploration target is still the 510.1601 hectares under the issued Exploration Permit.

**Estimated Cost:**

Salary of Geologist (1).....	PhP 20,000.00
Transportation and accommodation .....	20,000.00
Supplies and Materials .....	20,000.00
Documentation .....	10,000.00
Miscellaneous .....	10,000.00

**Total.....PhP 80,000.00**

**5.2 Reconnaissance Geologic Survey (Further to remaining area)**

Research works will result in identifying more potential area(s) that may be subjected to initial exploration activities. Reconnaissance geological survey will be concentrated over these areas where mineral potentials may be initially surveyed. Initially under the Exploration Permit, this work

program will focus still on the 500-hectare area of the Project Area for reconnaissance survey.

**Activity:**

- Reconnaissance geological mapping and random rock sampling to identify and mapped out the different rock types and their lithological characteristics. Samples will be taken from existing rock exposures, and streams channels.
- Rock examination and sampling.
- Preliminary structural geology.

**Sampling Density:**

- 20 samples/meridional block or about 100 samples.

The samples will be brought to a reputable laboratory for chromite analysis.

**Purpose:**

- To determine the relation and/or association to iron and manganese deposition in the area.
- To produce a geologic base map.
- To collate geological information.
- To determine the further exploration approaches and target areas.
- To identify and familiarize the form, arrangement, and internal structure of rocks, particularly of the sedimentary formation, including their history of deformation, such as folding and faulting.

**Expected Output:**

- Petrologic/Structural Map on 1:20,000 Map Scale with pertinent report and recommendation

**Coverage:** 500.00 hectares (approx.)

**Duration:**

Three (3) months.

**Estimated Cost:**

Salary of 1 Geologist . . . . .	PhP	60,000.00
Salary of 1Geologic/Survey Asst. . . . .		30,000.00
Salary of 4 Laborer . . . . .		60,000.00
Transportation and accommodation . . . . .		90,000.00
Supplies and Materials . . . . .		10,000.00
Documentation . . . . .		10,000.00
Sample Analysis @ PhP 2,000/sample . . . . .		200,000.00

**Total.....PhP 460,000.00**

**5.3 Semi-Detailed Geologic Survey (Further to remaining area)**

**Activity:**

- Test pitting /trenching and channelling sampling will be undertaken to provide for valuable indicative data.

- Interpretation and correlation of geologic information.

**Purpose:**

- To interpret the resulting map, the rock and soil association and correlation shall be established for the conduct of a more detailed study of the area.
- To determine target areas potentially containing chromite and its associated minerals and to reduce the area of interest.
- To generate relevant geologic information that can be entered into collated information for a more accurate interpretation and conclusion.

**Coverage:**

- Approximately 50% of the remaining contract area or at least 250 hectares.

**Sampling Density:**

- 50 samples/meridional block or about 120 samples.

The samples will be brought to a reputable laboratory for chromite analysis.

Samples will be taken from the grid intersection of 150 meter x 150 meter interval using the 900 meter x 900 meter meridional map intercepts.

Test pits, at an approximate dimension of 1-m x 1-m x 5-m, will be driven where samples will be collected in accordance with pre-drawn grid lines. The samples taken will be subjected to laboratory analysis (as described above). The geology of the area shall be plotted on a 1:10,000 topographic base map.

**Duration:**

Five (5) months

**Expected Output:**

- Petrologic/Structural Map on 1:10,000 Map Scale with pertinent report and recommendation

**Estimated Cost:**

Salary of 1 Geologist . . . . .	PhP 100,000.00
Salary of 1Geologic/Survey Asst. . . . .	75,000.00
Test pit/trench contract. . . . .	120,000.00
Transportation and accommodation . . . . .	90,000.00
Supplies and Materials . . . . .	10,000.00
Documentation . . . . .	10,000.00
Sample Analysis @ PhP 2,000/sample . . . . .	240,000.00

**Total.....PhP 645,000.00**

**5.4 Topographic Survey**

**Activity:**

- Topographic survey
- Ground for verification and confirmation of the previous findings

**Purpose:**

- For plotting important detailed information for purposes of identifying specific locations, characteristics and conditions of the targeted area.
- To have a three-dimensional map information thru the application of techniques of plane surveying and other special techniques to establish both horizontal and vertical control.
- The have an accurate data on relief or configuration of the terrain and the natural or artificial features.
- To have a preliminary engineering tool for future development works and planning.
- To develop accurate and detailed information of the targeted area, *i.e.*, detailed contour lines, surface geologic and environmental features.

**Coverage:** Estimated 250 hectares.

**Duration:** Four (4) months.

**Expected Output:**

- Topographic Maps in 1:500 Map Scale showing detailed geologic information; Geologic report with recommendation by the geologist.

**Estimated Cost:**

Salary of 1Geologist . . . . .	PhP	100,000.00
Survey contract . . . . .		500,000.00
Transportation And accommodation . . . . .		60,000.00
Supplies and Materials . . . . .		10,000.00
Documentation . . . . .		10,000.00

**Total.....PhP 680,000.00**

**5.5 Detailed Survey**

**Activity :**

- Detailed geologic survey, involving the final reserve evaluation of nickel, chromite and cobalt deposit, as well as, the structural, lithological and stratigraphic nature of the deposit.
- Actual reserve estimation by detailed drilling will be used driven at pre-determined locations pinpointed by geological data gathered during the previous exploration activities. It is estimated to accomplish at least 700 meters in depth with 7 holes at an average depth of 100 meters.

**Coverage :** 250 hectares

**Duration :** Five (5) months.

**Drilling Sampling Density :**

700 samples at will be taken at every 1-meter interval of drive.

**Expected Output :**

- Geologic Maps (alteration, structural, petrologic) on 1:10,000 Map Scale with pertinent report and recommendation

**Estimated Cost :**

Salary of 1Geologist .....	PhP	100,000.00
Salary of 1 Geologic Assistant .....	PhP	75,000.00
Drilling contract .....	PhP	3,500,000.00
Sample Analysis @ PhP 2,000/sample .....		1,400,000.00
Transportation		
And accommodation .....	PhP	60,000.00
Supplies and Materials .....	PhP	10,000.00
Documentation .....	PhP	10,000.00

**Total.....PhP 5,155,000.00**

**5.6 Filing of Declaration of Mining Project Feasibility**

▪ **Feasibility Study**

This activity will be an important undertaking in the final determination of the economic viability of the chromite deposit that may be delineated in the Project Area.

**Related Activities:**

- Generation of substantial information on the mineral reserve, which include the structural, lithological and stratigraphic condition of the area.
- Determination whether or not the deposit that may be utilized for commercial purposes through the conduct of a feasibility study.
- Completion of report that includes recommendation.
- Final determination of the physical and chemical characteristics of the ore/s for marketing and/or determination of appropriate technology/ies through the application of metallurgical procedures.

▪ **Report assessment/feasibility**

Result of the preceding activity will be the primary decision tool in deciding whether or not a full blown feasibility study will be conducted on the area or a more detailed subsurface exploration works will be pursued. The resource delineated will be assessed and evaluated to determine its workability towards conducting the said study.

Duration ..... 6 months

Coverage:

Salary of 1Geologist/Mining Engineer ...	PhP	60,000.00
Transportation Expenses .....		20,000.00
Supplies and Materials .....		20,000.00
Documentation		
Environmental Impact Study		
Feasibility Report		
Proposed Work Programs .....		1,500,000.00

**Total.....PhP 1,600,000.00**



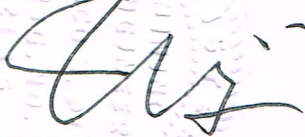
**6.0 TOTAL ESTIMATED EXPLORATION COST and GANTT CHART**

Activities	Year								Cost (PhP)	
	1				2					
	1 <sup>st</sup> Q	2 <sup>nd</sup> Q	3 <sup>rd</sup> Q	4 <sup>th</sup> Q	1 <sup>st</sup> Q	2 <sup>nd</sup> Q	3 <sup>rd</sup> Q	4 <sup>th</sup> Q		
Research Work/Preliminary Studies	█									80,000.00
Reconnaissance/ Regional Survey or Studies	█	█								460,000.00
Semi-Detailed Survey or Follow-Up Studies		█	█	█						645,000.00
Topographic Survey				█	█	█				680,000.00
Detailed Survey					█	█	█			5,155,000.00
Feasibility Report Assessment							█	█	█	1,600,000.00
Feasibility Preparation							█	█	█	1,600,000.00
<b>Total Cost</b>										<b>8,620,000.00</b>

Year 1            PhP 1,695,000.00  
 Year 2            PhP 6,925,000.00

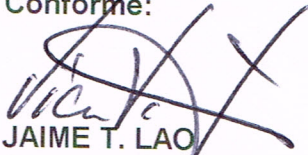
**Total Exploration Cost: PhP 8,620,000.00**

Prepared by:



**ULDARICO M. PITERO**  
 Mining Engineer  
 PTR No. MCF0536959 A  
 Issued on February 3, 2010 @ Muntinlupa City  
 PRC License No.2135

Conforme:

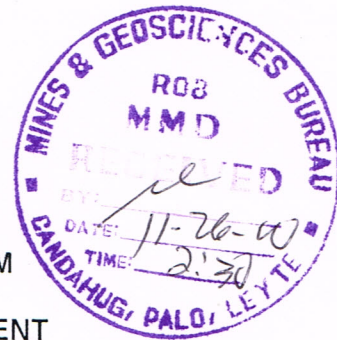


**JAIME T. LAO**  
 Operations Manager  
 Mt. Sinai Mining Exploration and Development Corporation

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  
FOR  
MINERAL PRODUCTION SHARING AGREEMENT  
(CONVERSION OF EXPLORATION PERMIT NO. EP-2009-000010-VIII)**

**1.0 Name and Address of Company/Proponent**

**MT. SINAI MINING EXPLORATION AND DEVELOPMENT CORPORATION**  
Km. 12 Diversion Road, Panacan, Davao City  
Telephone No. 0917-700-63-13

**Contact Persons:**

**JAIME T. LAO**  
Operations Manager

**2.0 Type and Nature of Project**

**2.1 Project description**

This Environmental Work Program is the corresponding work program to be simultaneously implemented during the conduct of the exploration activities under the proposed Exploration Work Program for the search of chromite and their associated mineral deposits within an area of 510.1601 hectares and is located in the island of Homonhon, Municipality of Guiuan, Province of Eastern Samar.

This Environmental Work Program offers an array of proposed environmental mitigating measures, as well as the conduct of initial environmental study and social preparation.

The total exploration cost during the initial two (2)-year period of the exploration period is **PhP8,620,000.00**; broken down into **PhP 1,695,000.00** and **PhP 6,925,000.00** for the first and second –year period, respectively.

Details of the exploration activities will be discussed later under the following sections of this work program.

**2.2 Type and nature of mineral deposit(s) to be explored and mineral(s) to be derived**

The minerals to be explored are chromite and their associated mineral deposits.

**3.0 General Location and Area to be Covered by the Proposed Permit/Contract Area**

**3.1 Location and accessibility**

The contract area of the Mineral Production Sharing Agreement (Project Area) covers an area of 510.1601 hectares and is located in the island of Homonhon, Municipality of Guiuan, Province of Eastern Samar. The Project Area is bounded by the following coordinates:

CORNER	LATITUDE	LONGITUDE
--------	----------	-----------

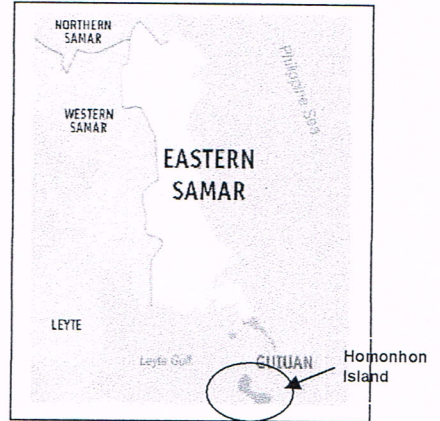
2	10 <sup>o</sup> 45' 00.00"	125 <sup>o</sup> 42' 16.00"
3	10 <sup>o</sup> 44' 10.00"	125 <sup>o</sup> 42' 35.00"
4	10 <sup>o</sup> 44' 16.00"	125 <sup>o</sup> 43' 00.00"
5	10 <sup>o</sup> 44' 15.00"	125 <sup>o</sup> 43' 15.00"
6	10 <sup>o</sup> 44' 00.00"	125 <sup>o</sup> 43' 30.00"
7	10 <sup>o</sup> 43' 58.00"	125 <sup>o</sup> 43' 42.00"
8	10 <sup>o</sup> 44' 05.00"	125 <sup>o</sup> 44' 00.00"
9	10 <sup>o</sup> 43' 30.00"	125 <sup>o</sup> 44' 00.00"
10	10 <sup>o</sup> 43' 30.00"	125 <sup>o</sup> 42' 42.00"
11	10 <sup>o</sup> 43' 38.00"	125 <sup>o</sup> 42' 00.00"
12	10 <sup>o</sup> 43' 56.00"	125 <sup>o</sup> 42' 00.00"
13	10 <sup>o</sup> 44' 15.00"	125 <sup>o</sup> 42' 15.00"
14	10 <sup>o</sup> 44' 25.00"	125 <sup>o</sup> 42' 12.00"
15	10 <sup>o</sup> 44' 25.00"	125 <sup>o</sup> 42' 00.00"

The municipality of Guiuan is located at the southernmost tip of Samar Island. It is bounded on the north by the municipality of Mercedes, on the east by the Pacific Ocean, on the south by the Surigao Strait, and on the west by the Leyte Gulf.

Clustered around the municipality are numerous islands and islets, like Tubabao, Calicoan, Sulangan, Homonhon and Suluan.

Guiuan is 109 kilometers south of Borongan and 154 kilometers from Tacloban. It has a total land area of 175.49 square kilometers. It is composed of sixty (60) barangays and the only town in the province with biggest number of island barangays.

The nearby regional capital of Tacloban City can be reached by land travel thru the numerous bus liners that ply from Manila to the City, sea-ferried crossing the San Bernardino Strait. Several buses and vans regularly shuttle passengers to Guiuan. Tacloban is also regularly serviced by scheduled flights from Manila. Alternatively, several bus companies have daily trips to Guiuan from Manila. Travel time is approximately twenty-one hours. Guiuan is also 2 hours away from the provincial capital, Borongan.



From Tacloban City, Guiuan can be reached via the South Samar Coastal Road passing along Basey-Marabut-Lawaan-Balangiga-Guiporlos-Quinapondan towns.

The Project Area lies with Brgy. Canayawon of Homonhon, which can be accessed via a motor boat ride directly to Canayawon.

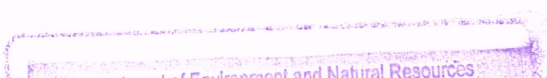
**3.2 Total area covered by the application**

The Project Area approximately 510.1601 hectares.

**4.0 Description of the Existing Environment where Work is Proposed to be Undertaken**

**4.1 Land environment**

**4.1.1 Topography/physiography**



The Project Area lies on a moderately cascading topography and lies just about above 50 meter mean sea level (msl) elevation area and going gentler higher to about about 120 meter msl elevation.

The Eraia River cuts the applied area along the north-south direction almost in the middle dividing it into two physiographic features. The western portion is almost domelike that rises to a height of 118 meter msl, while the eastern portion also rises gentler, interestingly at almost the same height. Generally, the western portion has a steeper slopes that the eastern side.

#### **4.1.2 Land use/capability/Socio-Economic Environment**

**Guiuan** is a 2nd class municipality in the province of Eastern Samar, Philippines. As of year 2004, it has a population of 43,647 people in 7,618 households.

Homonhon generally host a fishing communities. Guiuan, in fact is rich in fishery and aquatic resources. It is considered by the fisheries authorities as the best fishing belt in the region.

Guiuan's airport has a 2.8 km runway which could service light private planes, chartered cargo and military planes. Despite being partly renovated, it is still unused.

Guiuan also has a municipal and national seaport operational throughout the year. Telephone companies operating in the municipality includes TELECOM, Globelines and Bayantel. Smart and Globe cellular phone companies are also operational.

In 2004, Eastern Samar Electric Cooperative (ESAMELCO) was able to energize Guiuan, Calicoan Island up to Sulangan covering 37 out of 60 barangays. Island barangays are served with electricity through generator sets either privately-owned or operated by the barangay council. However, electricity shortages are frequent and subscribers experience weekly power failures, often lasting 24 hours.

Existing land use indicates a predominance of agriculture use which covers 38.2% of the total land area. Most of the agricultural lands are dominantly planted with coconut trees.

#### **4.1.3 Pedology (soil type and profile, with emphasis on areas to be affected by exploration, sites for water impoundment structures; erosion potential; physical, chemical and biological characteristics of soils affected by development; productive capacity)**

Generally, applied area is predominantly of laterites typical of ultramafic rocks with fringes of alluvium and shallow beach sediments. The mountain soil of the Project Area will be studied in preparation to the eventual rehabilitation of the area. Soil profiles during actual ground penetrations, i.e., test pitting, trenching, channeling, will be recorded to determine the soil profile order.

Soil fertility and vegetative adoptability to the type of soil in the area will be the primary concern of the said study.

#### **4.2.1 Hydrology and Water quality**

No available data have been found on hydrological resources. However, as one goes around the island, one will notice the springs and rivulets that cascade down the mountainsides, giving fertility to crop lands along the way. Underground sources of water are also available in the plain area of the municipality.

Hydrological study will be simultaneously conducted during exploration. The data to be generated is envisioned to offer a long lasting solution of the perennial water problem in the area.

#### **4.2.2. Drainage System**

The Project Area is principally drained by the Eraia River and its tributaries flowing eastward. The river flows southward emptying into the Leyte Gulf. Tributaries of the Sapa River, located in the northwest side of the Project Area drain that portion that empties to the west of the island into the Casogoran Bay.

#### **4.3 Climatology/meteorology (rainfall intensity, temperature, humidity, tropical cyclones, wind pattern and strength, and ambient air quality to include levels of particulates, odors, gases (e.g., sulfur dioxide and nitrogen oxides, etc.)**

The Project Area shows distinct seasons: rainy from November to January with northeast monsoon as the prevailing wind and dry from July to September with its westerly winds locally called "haba-gat" as the prevailing wind.

#### **4.4 Geological/Geomorphological environment**

Philippine laterites characteristically are overlain by reddish to yellowish brown soils composed mainly of iron and aluminum oxides and hydroxides. The general laterite profile, from surface to depth, is an iron cap grading to an oxide limonite zone and then to a deeper silicate saprolite zone.

The overlying iron cap is typically reddish-brown with iron concretions and low porosity and plasticity, with an average thickness of 1.8-3.6m although thick sections of 5 m may be encountered; moisture content is around 30%. The average metal content is typically 0.70- 0.75% Ni, 0.05% Co and 30% Fe.

The limonite zone can consist of two horizons, an upper light brown plastic laterite with coarse to fine granular texture and a lower yellowish brown to orange variegated laterite, both with high porosity of 40-46%. The upper zone thickness is typically around 1.5m and the lower zone thickness is 2.5-3.0m. Mature laterites in some parts of the Philippines have as much as 12 m or more of limonite. The average metal content for both horizons is typically around 1.0% Ni, 0.1% Co and 50% Fe.

The saprolite zone is greenish yellow to olive grey zone consisting of decomposed serpentine or clastic derivatives which grade from soft at the top to hard at the base. The thickness varies from 1-8m and moisture is around 30%. The average metal content typically is 1.7-2.0% Ni, 0.04% Co and 1-20% Fe. Undecomposed serpentinite is found below the base of the profile.

#### **4.5.1 Terrestrial and Marine plants and animals**

##### **Terrestrial Plants and Animals**

###### **Plants**

Plant types over the Project Area may be classified under two main types: natural vegetation consisting of forest and grass/shrub categories; and cultivated vegetation, dominated by coconut trees. The Project Area is seldom devoted to farming, however. Other major crops include vegetables, rootcrops, palay, corn, banana and other fruit trees, coffee and pineapple.

Plant species belonging to the natural vegetation category are mostly found in the forest and uplands and consist principally of dipterocarps, bamboo, and various wild shrubs and plants of minor species.

###### **Animals**

The area is yet to be completely explored for its faunal habitations. Although vegetative characteristics may indicate that it may hosts exotic, rare, or endangered animal species, the area rarely to manifests presence of these animal species, except for those that are domestically raised by the local inhabitants. The rapid conversion from forest to logging and human incursion consequently left the applied area devoid of important animal species.

Common, however, are certain species of birds (maya, bato-bato, laying-layang) that are frequently seen in the area.

Invertebrates, like insects, arachnids, and common amphibians are also observed.

The environmental studies to be carried out in the contract area will include this aspect of ecological baselining.

##### **Aquatic Plants and Animals (including protists)**

The coastal waters offer almost all species of marine life: euchuema, abalone, ornamental fish, lobster and the Golden Cowry (known for its extraordinary golden sheen). They also offer delicacies, shellcraft products as well as fresh and processed marine products.

#### **5.0 Description of Exploration Work**

##### **5.1 Research Work (Gathering of additional baseline information)**

###### **Activity:**

- Preliminary works (survey, gathering and collation of previous works on the area).
- Information gathering for identifying the type and nature of the study, as well as, the proper approach from which the exploration activities are to be initiated.
- This phase will also determine the extent of the study and the location of the

**Purpose:**

- To obtain baseline information which will include, but not limited to, the existing environmental condition, the degree of housing, industrial and infrastructure development as well as the demographic profile of the host barangays.
- To determine the appropriate initial exploration activities, approach and mobilization.
- To collate baseline geological and mineralization data.

**Expected Output:**

- Preliminary report containing baseline environmental, social, economic and geological/mineral information of the area with recommendation regarding what priority areas where actual exploration activities will be initiated.

**Duration:**

One (1) month.

**Coverage:** Exploration target is still the 510.1601 hectares under the issued Exploration Permit.

**Estimated Cost:**

Salary of Geologist (1).....	PhP 20,000.00
Transportation and accommodation .....	20,000.00
Supplies and Materials .....	20,000.00
Documentation .....	10,000.00
Miscellaneous .....	10,000.00
<b>Total.....</b>	<b>PhP 80,000.00</b>

**5.2 Reconnaissance Geologic Survey (Further to remaining area)**

Research works will result in identifying more potential area(s) that may be subjected to initial exploration activities. Reconnaissance geological survey will be concentrated over these areas where mineral potentials may be initially surveyed. Initially under the Exploration Permit, this work program will focus still on the 500-hectare area of the Project Area for reconnaissance survey.

**Activity:**

- Reconnaissance geological mapping and random rock sampling to identify and mapped out the different rock types and their lithological characteristics. Samples will be taken from existing rock exposures, and streams channels.
- Rock examination and sampling.
- Preliminary structural geology.

**Sampling Density:**

- 20 samples/meridional block or about 100 samples.

The samples will be brought to a reputable laboratory for chromite



Purpose:

- To determine the relation and/or association to iron and manganese deposition in the area.
- To produce a geologic base map.
- To collate geological information.
- To determine the further exploration approaches and target areas.
- To identify and familiarize the form, arrangement, and internal structure of rocks, particularly of the sedimentary formation, including their history of deformation, such as folding and faulting.

Expected Output:

- Petrologic/Structural Map on 1:20,000 Map Scale with pertinent report and recommendation

Coverage: 500.00 hectares (approx.)

Duration:

Three (3) months.

Estimated Cost:

Salary of 1 Geologist . . . . .	PhP 60,000.00
Salary of 1Geologic/Survey Asst. . . . .	30,000.00
Salary of 4 Laborer . . . . .	60,000.00
Transportation and accommodation . . . . .	90,000.00
Supplies and Materials . . . . .	10,000.00
Documentation . . . . .	10,000.00
Sample Analysis @ PhP 2,000/sample . . . . .	200,000.00
<b>Total.....PhP 460,000.00</b>	

5.3 Semi-Detailed Geologic Survey (Further to remaining area)

Activity:

- Test pitting /trenching and channelling sampling will be undertaken to provide for valuable indicative data.
- Geologic mapping.
- Interpretation and correlation of geologic information.

Purpose:

- To interpret the resulting map, the rock and soil association and correlation shall be established for the conduct of a more detailed study of the area.
- To determine target areas potentially containing chromite and its associated minerals and to reduce the area of interest.
- To generate relevant geologic information that can be entered into collated information for a more accurate interpretation and conclusion.

Coverage:

- Approximately 50% of the remaining contract area or at least 250 hectares

Sampling Density:

- 50 samples/meridional block or about 120 samples.

The samples will be brought to a reputable laboratory for chromite analysis.

Samples will be taken from the grid intersection of 150 meter x 150 meter interval using the 900 meter x 900 meter meridional map intercepts.

Test pits, at an approximate dimension of 1-m x 1-m x 5-m, will be driven where samples will be collected in accordance with pre-drawn grid lines. The samples taken will be subjected to laboratory analysis (as described above). The geology of the area shall be plotted on a 1:10,000 topographic base map.

Duration:

Five (5) months

Expected Output:

- Petrologic/Structural Map on 1:10,000 Map Scale with pertinent report and recommendation

Estimated Cost:

Salary of 1 Geologist . . . . .	PhP 100,000.00
Salary of 1Geologic/Survey Asst. . . . .	75,000.00
Test pit/trench contract. . . . .	120,000.00
Transportation and accommodation . . . . .	90,000.00
Supplies and Materials . . . . .	10,000.00
Documentation . . . . .	10,000.00
Sample Analysis @ PhP 2,000/sample . . . . .	240,000.00

Total..... PhP 645,000.00

5.4 Topographic Survey

Activity:

- Topographic survey
- Ground for verification and confirmation of the previous findings.

Purpose:

- For plotting important detailed information for purposes of identifying specific locations, characteristics and conditions of the targeted area.
- To have a three-dimensional map information thru the application of techniques of plane surveying and other special techniques to establish both horizontal and vertical control.
- The have an accurate data on relief or configuration of the terrain and the natural or artificial features.
- To have a preliminary engineering tool for future development works and planning.
- To develop accurate and detailed information of the targeted area, i.e., detailed contour lines, surface geologic and environmental features.

Coverage: Estimated 250 hectares.

Duration: Four (4) months.

Expected Output:

- Topographic Maps in 1:500 Map Scale showing detailed geologic information; Geologic report with recommendation by the geologist.

Estimated Cost:

Salary of 1 Geologist . . . . .	PhP	100,000.00
Survey contract . . . . .		500,000.00
Transportation And accommodation . . . . .		60,000.00
Supplies and Materials . . . . .		10,000.00
Documentation . . . . .		10,000.00

Total.....PhP 680,000.00

5.5 Detailed Survey

Activity :

- Detailed geologic survey, involving the final reserve evaluation of nickel, chromite and cobalt deposit, as well as, the structural, lithological and stratigraphic nature of the deposit.
- Actual reserve estimation by detailed drilling will be used driven at pre-determined locations pinpointed by geological data gathered during the previous exploration activities. It is estimated to accomplish at least 700 meters in depth with 7 holes at an average depth of 100 meters.

Coverage : 250 hectares

Duration : Five (5) months.

Drilling Sampling Density :

700 samples at will be taken at every 1-meter interval of drive.

Expected Output :

- Geologic Maps (alteration, structural, petrologic) on 1:10,000 Map Scale with pertinent report and recommendation

Estimated Cost :

Salary of 1 Geologist . . . . .	PhP	100,000.00
Salary of 1 Geologic Assistant . . . . .	PhP	75,000.00
Drilling contract . . . . .	PhP	3,500,000.00
Sample Analysis @ PhP 2,000/sample . . . . .		1,400,000.00
Transportation And accommodation . . . . .	PhP	60,000.00
Supplies and Materials . . . . .	PhP	10,000.00
Documentation . . . . .	PhP	10,000.00

Total.....PhP 5,155,000.00

5.6 Filing of Declaration of Mining Project Feasibility

- Feasibility Study

This activity will be an important undertaking in the final determination of the economic viability of the chromite deposit that may be delineated in the Project Area.

Related Activities:

- Generation of substantial information on the mineral reserve, which include the structural, lithological and stratigraphic condition of the area.
- Determination whether or not the deposit that may be utilized for commercial purposes through the conduct of a feasibility study.
- Completion of report that includes recommendation.
- Final determination of the physical and chemical characteristics of the ore/s for marketing and/or determination of appropriate technology/ies through the application of metallurgical procedures.
- Report assessment/feasibility

Result of the preceding activity will be the primary decision tool in deciding whether or not a full blown feasibility study will be conducted on the area or a more detailed subsurface exploration works will be pursued. The resource delineated will be assessed and evaluated to determine its workability towards conducting the said study.

Duration ..... 6 months

Coverage:

Salary of 1Geologist/Mining Engineer . . .	PhP	60,000.00
Transportation Expenses . . . . .		20,000.00
Supplies and Materials . . . . .		20,000.00
Documentation		
Environmental Impact Study		
Feasibility Report		
Proposed Work Programs . . . . .		1,500,000.00

Total.....PhP 1,600,000.00

TOTAL ESTIMATED EXPLORATION COST and GANTT CHART

Activities	Year								Cost (PhP)
	1				2				
	1 <sup>st</sup> Q	2 <sup>nd</sup> Q	3 <sup>rd</sup> Q	4 <sup>th</sup> Q	1 <sup>st</sup> Q	2 <sup>nd</sup> Q	3 <sup>rd</sup> Q	4 <sup>th</sup> Q	
Research Work/Preliminary Studies	█								80,000.00
Reconnaissance/ Regional Survey or Studies	█	█							460,000.00
Semi-Detailed Survey or Follow-Up Studies		█	█	█					645,000.00
Topographic Survey				█	█				680,000.00
Detailed Survey					█	█			5,155,000.00
Feasibility							█	█	
Report Assessment							█	█	1,600,000.00
Feasibility Preparation							█	█	
<b>Total Cost</b>									<b>8,620,000.00</b>

Year 1                  PhP 1,695,000.00

Total Exploration Cost: PhP 8,620,000.00

## **6.0 Identification of Potential Environmental Effects**

### **6.1 On Land/Hydrology and Water Quality/Ecology**

#### **6.1.1 *Surface Disturbance Off the Mineral Property subject of exploration such as road accesses construction, etc.***

There is no expected significant surface disturbance of the Project Area considering access to and from the target site is available and that initial activities will only involved clearing of vegetation, if necessary, for trail establishment.

The target area is basically a remnants of once active logging activities where roads were driven in the remotest part of the area. During the exploration phase, offsite areas will only be utilized in gathering baseline information on the environment. Campsite will be constructed if only when there is a necessity to do so. Depending on the accessibility, personnel and material transport will be through the more convenient way. Transportation will not posed any problem during the course of the exploration activities.

#### **6.1.2 *Surface Disturbance On the Mineral Property (subject of exploration such as, but not limited to, the following):***

##### **6.1.2.1 *Changes in landforms due to excavations (settling ponds, road access construction, and no. of drilling sites, no. of trenches, campsite, test pits)***

Only during the semi-detailed phase of the exploration program that groundbreaking will be undertaken in form of test pits and trenching. These excavations will more likely bring changes in the landform. The effect, however, will be temporary, as mitigating measures will be immediately undertaken.

In some occasions, test pitting, especially trenching, will affect natural surface drainage. Excavated materials, if not properly secured or handled will bring about siltation during heavy rains. Removal of existing vegetation as a consequence of these excavations will also increase erosion.

Drilling activities conducted at the last phase of this two(2)-year of the exploration period will be done on locations carefully chosen not only based on the geological considerations but also on the environmental possibilities that may have arisen. Drilling pods will cover the smallest area possible contigence to the certain environmental mitigating measures that would be set up.

### **7.1 *On Socioeconomic Effects (to include among others impact on indigenous/ethnic communities, where applicable culture, tradition and lifestyle)***

There will be no significant effect of the exploration on the socio-economic conditions of the area considering that it only involves minor exploration activities and in relatively short period. In there are effects, it will be very insignificant and very temporary, as in temporary employment which will mean additional inflow of income into the local communities. Major economic activities, in the area, such as animal grazing and cash crop planting will not be affected. The program will also not cause the displacement of the local populace from their homes or farmlands.

## **7.0 Environmental Management Measures Including Total Cost**

Prior to the conduct of any exploration activities, exploration personnel will draw up initial plan to coordinate the conduct of the programmed exploration activities with the concerned local government officials and police/military units. Initial information, education and communication campaign will be implemented at the target site and its vicinity. This will enable the affected community comprehend and understand the objectives of the exploration works to be undertaken. The cooperation and approval of the intended mining project will be the primary goal of the company, in so far as social acceptability is concerned.

### ***Campsite Preparation and Trail Development***

- Avoidance of cutting of trees and careful planning where convenience is secondary with effecting changes in natural landform, vegetation and wildlife habitat
- Development of drainage and containment of waste materials and fluids for proper disposition
- Observance of health and safety practices by field personnel
- Restoration thru re-vegetation and other environmental rehabilitation measures during the abandonment period

### ***During Survey and Surface Investigation:***

As identified, actual ground movement will be realized during the conduct of survey and surface investigations of the program. To ensure that the conduct of these activities will be in consonance with environmental standards, the following will be undertaken:

- Existing roads and old trails will be utilized to minimized ground and vegetative disturbance.
- Sampling points will be located where minimal loss of vegetation is expected.
- Foods will be prepared prior to every activity to minimize fuel handling at the site during each activity.
- Pre-planning of access routes will be undertaken to ensure travel direction and minimized ground and vegetative disturbance.
- Survey stakes will be prepared prior to any survey activities to minimize vegetative cuttings.
- Personnel will not be allowed to poach or hunt animals.

### ***During Test Pitting and Trenching***

- Test pits and trenches will be located where fewer disturbances are expected.
- Backfilling of the excavations will be done immediately after all the information is collected and properly recorded.
- During their use and excavation, peripheral fences will be constructed to avoid accidents by falling.
- If necessary, temporary drainage will be established to prevent soil erosion.
- Extracted materials will be stockpiled properly and secured to avoid wastage.

- Backfilling will be done properly to maintain the original soil horizons of the area.

#### ***During Exploration Drilling (Optional)***

- In designating locations for drill sites, careful consideration will be observed to minimized ground disturbance.
- If leveling is necessary, it will be done following the principle of soil conservation and rehabilitation of disturbed areas. Immediately after drilling operations, excavated soil will be backfilled and planted with fast growing species of grass to prevent erosion.
- To prevent unwanted sludge gushing, close-circuit flow set-up will be constructed to handle sludge and flocculating agents.
- Solid waste and waste water shall be collected for possible recycling, otherwise will be disposed of properly to the nearby government waste disposal system.
- Drill pads will be surrounded, as practically as possible, with plastic-layered drainage.
- Used oil and other lubricants will be stored to safe containers for proper disposition.
- Temporary fuel station will be covered by impermeable materials to prevent soil contamination.
- Empty fuel containers will be placed in safe location and disposed of properly.
- Abandoned drill sites will be rehabilitated and revegetated accordingly.
- Drill holes will be collared and covered properly.
- Drill logs will be archived for future use and reference.

#### ***Other Environmental Mitigating Measures***

- During the pre-exploration phase, key officers will be advise to draw up a comprehensive waste disposal system that will be implemented on the field. This would include the handling of all solid and liquid waste and garbage generated during the conduct of the actual exploration works. Some of the key factors to be consider in the waste disposal system are:
  1. Type of waste generated (toxic or non-toxic; recyclable or non-recyclable; biodegradability, etc.)
  2. Collection and handling
  3. Identification of temporary and permanent disposal locations

Overall, it will be the primary objective of every exploration team to generate the least amount of waste possible during their exploration sorties.

- There will also be an *Environmental Monitoring and Implementing* arm of every exploration group. This group of people will be responsible to make sure that there is always an appropriate environmental safeguard and measure applied in every exploration activities on the field. This group will be regularly reporting to the head of the exploration team.

### **8.0 *Estimated Cost for Environmental Work Program***

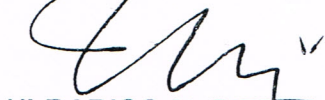
The estimated amount for the Environmental Work Program is about **PhP870,000.00** spread over the two-year exploration period.

The Environmental Management Plan detailing the environmental activities and corresponding cost in matrix form is attached as Annex "A", for reference.

**9.0 Schedule of Activities (Gantt Chart)**

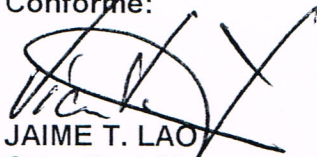
Please refer to Annex "B".

Prepared by:



**ULDARICO M. PITERO**  
Mining Engineer  
PTR No. MCF0536959 A  
Issued on February 3, 2010 @ Muntinlupa City  
PRC License No.2135

Conforme:



**JAIME T. LAO**  
Operations Manager  
Mt. Sinai Mining Exploration and Development Corporation



## Annex "A"

## ENVIRONMENTAL MANAGEMENT MATRIX AND ESTIMATED COST

Activity	Potential Impact	Mitigating Measure	Cost (PhP)
1. Pre-Exploration Phase	✓	<ul style="list-style-type: none"> <li>✓ Information, education and communication campaign.</li> <li>✓ Prior coordination with concerned local officials/military/police units</li> </ul>	170,000.00
2. Camp Preparation/ Trail Development/ Survey and Surface and Subsurface Investigation	<ul style="list-style-type: none"> <li>✓ Loss/ destruction of vegetation</li> <li>✓ Generation of waste</li> <li>✓ Animal poaching/ hunting</li> <li>✓ Loss of topsoil</li> <li>✓ Destruction of wildlife habitat</li> </ul>	<ul style="list-style-type: none"> <li>✓ The use of existing roads and trails to minimized ground and vegetative disturbance.</li> <li>✓ Sampling points will be located where minimal loss of vegetation is expected.</li> <li>✓ Disposables will be collected and properly handled. These will be disposed of accordingly after every activity.</li> <li>✓ Foods will be prepared prior to every activity to minimize fuel handling at the site during each activity.</li> <li>✓ Pre-planning of access routes will be undertaken to ensure travel direction and minimized ground and vegetative disturbance.</li> <li>✓ Survey stakes will be prepared prior to any survey activities to minimize vegetative cuttings.</li> <li>✓ Personnel will be prohibited to poach or hunt any kind of animals</li> <li>✓ Test pits and trenches will be located where fewer disturbances are expected.</li> <li>✓ Backfilling of the excavations will be done immediately after all the information is collected and properly recorded.</li> <li>✓ During their use and excavation, peripheral fences will be constructed to avoid accidents by falling.</li> <li>✓ If necessary, temporary drainage will be established to prevent soil erosion.</li> <li>✓ Extracted materials will be stockpiled properly and secured to avoid wastage of fertile soil.</li> <li>✓ Backfilling will be done properly to maintain the original soil horizons of the area.</li> <li>✓ In designating locations for drill sites, careful consideration will be observed to minimized ground disturbance.</li> <li>✓ If leveling is necessary, it will be done following the principle of soil conservation and rehabilitation of disturbed areas. Immediately after drilling operations, excavated soil will</li> </ul>	500,000.00

		<p>fast growing species of grass to prevent erosion.</p> <ul style="list-style-type: none"> <li>✓ To prevent unwanted sludge gushing, close-circuit flow set-up will be constructed to handle sludge and flocculating agents.</li> <li>✓ Solid waste and waste water shall be collected for possible recycling, otherwise will be disposed of properly to the nearby government waste disposal system.</li> <li>✓ Drill pads will be surrounded, as practically as possible, with plastic-layered drainage.</li> <li>✓ Used oil and other lubricants will be stored to safe containers for proper disposition.</li> <li>✓ Temporary fuel station will be covered by impermeable materials to prevent soil contamination.</li> <li>✓ Empty fuel containers will be placed in safe location and disposed of properly.</li> <li>✓ Abandoned drill sites will be rehabilitated and revegetated accordingly.</li> <li>✓ Drill holes will be collared and covered properly.</li> <li>✓ Drill logs will be archived for future use and reference.</li> </ul>	
4. Preliminary Environmental Studies	<ul style="list-style-type: none"> <li>✓ Soil Sampling</li> <li>✓ Air Quality Sampling</li> <li>✓ Water Sampling</li> <li>✓ Flora and Faunal Research</li> </ul>		200,000.00
		Total Cost	870,000.00

Annex "B"

GANTT CHART

Activities	Duration (Months)																								
	1 <sup>st</sup> Year												2 <sup>nd</sup> Year												
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Campaign																									
Rehabilitation of Affected areas during Survey and Sub-surface Investigation.(Re-vegetation, filling)																									
Waste Preparation and Establishment of Proper Drainage																									
Waste Management (rehabilitation measures)																									
Environmental Monitoring																									
Procurement of Tools and Vehicle Maintenance																									
Primary Environmental Studies/Environmental Monitoring																									
Equipment, Machine and Vehicle Maintenance																									