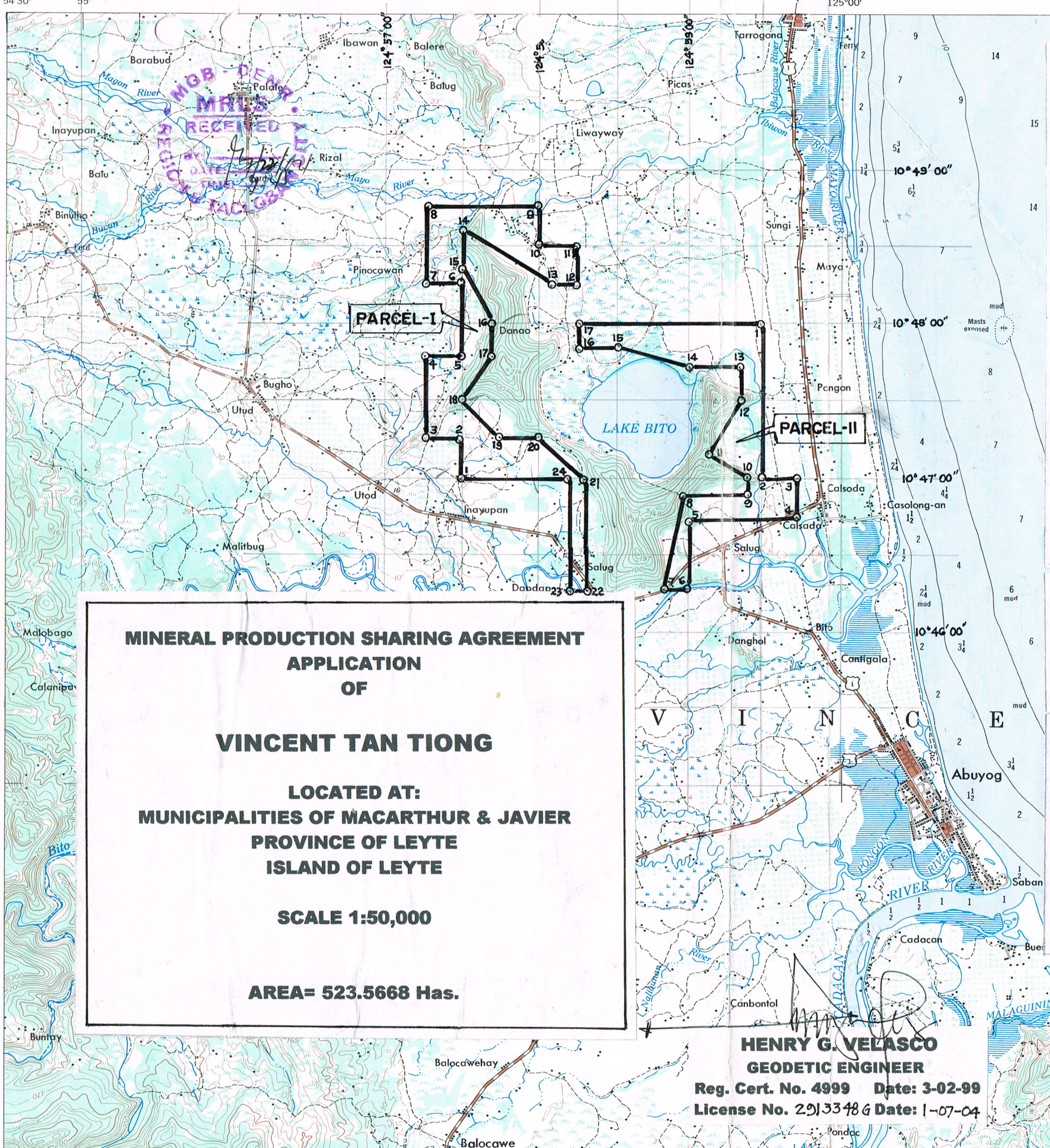
ANNEX –"A"

LOCATION MAP
OR
SKETCH PLAN



MINERAL PRODUCTION SHARING AGREEMENT APPLICATION OF

VINCENT TAN TIONG

LOCATED AT:
MUNICIPALITIES OF MACARTHUR & JAVIER
PROVINCE OF LEYTE
ISLAND OF LEYTE

SCALE 1:50,000

AREA= 523.5668 Has.

TECHNICAL DESCRIPTION

PARCEL – I

CORNER	LATITUDE	LONGITUDE
1	10-47-00	124-57-30
2	10-47-15	124-57-30
3	10-47-15	124-57-15
4	10-47-45	124-57-15
5	10-47-45	124-57-30
6	10-48-15	124-57-30
7	10-48-15	124-57-15
8	10-48-45	124-57-15
9	10-48-45	124-58-00
10	10-48-30	124-58-00
11	10-48-30	124-58-15
12	10-48-15	124-58-15
13	10-48-15	124-58-05
14	10-48-37	124-57-30
15	10-48-17	124-57-30
16	10-48-00	124-57-44
17	10-47-45	124-57-44
18	10-47-30	124-57-30
19	10-47-15	124-57-45
20	10-47-15	124-58-00
21	10-47-00	124-58-20
22	10-46-15	124-58-20
23	10-46-15	124-58-15
24	10-4700	124-58-15

AREA= 281.0516 Has.

PARCEL – II

CORNER	LATITUDE	LONGITUDE
1	10-48-00	124-59-30
2	10-47-00	124-59-30
3	10-47-00	124-59-45
4	10-46-45	124-59-45
5	10-46-45	124-59-00
6	10-46-15	124-59-00
7	10-46-15	124-58-50
8	10-46-50	124-58-55
9	10-46-50	124-59-25
10	10-47-00	124-59-25
11	10-47-08	124-59-05
12	10-47-30	124-59-22
13	10-47-36	124-59-22
14	10-47-36	124-59-00
15	10-47-50	124-58-30
16	10-47-50	124-58-15
17	10-48-00	124-58-15

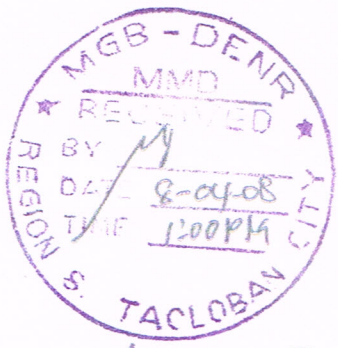
AREA= 242.5152 Has.

HENRY G. VELASCO
GEODETIC ENGINEER
Reg. Cert. No. 4999 Date: 3-02-99
License No. 29133348 G Date: 1-07-04

ANNEX –"B"

TWO (2) – YEAR EXPLORATION WORK PROGRAM

MGB Form No. 05-4



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

Annex Q

TWO-YEAR EXPLORATION WORK PROGRAM
(AMENDED - REVISED)

1.0 NAME AND ADDRESS OF COMPANY/PROPONENT

VINCENT TAN TIONG
Fort Ilocandia, Brgy. 34
Calayab, Laoag City, Ilocos Norte

1.1 Contact Person : EDGAR LIM

1.2 Telephone/ Cell Number : 09175379007

2.0 LOCATION OF THE PROJECT

The proposed project site is situated within the municipalities of Macarthur and Javier, Province of Leyte. It is bounded by the following geographic coordinates:

PARCEL I

CORNER	LATITUDE	LONGITUDE
1	10° 47' 00''	124° 57' 30''
2	10° 47' 15''	124° 57' 30''
3	10° 47' 15''	124° 57' 15''
4	10° 47' 45''	124° 57' 15''
5	10° 47' 45''	124° 57' 30''
6	10° 48' 15''	124° 57' 30''
7	10° 48' 15''	124° 57' 15''
8	10° 48' 45''	124° 57'15''
9	10° 48' 45''	124° 58' 00''
10	10° 48' 30''	124° 58' 00''
11	10° 48' 30''	124° 58' 15''
12	10° 48' 15''	124° 58' 15''
13	10° 48' 15''	124° 58' 05''
14	10° 48' 37''	124° 57' 30''
15	10° 48' 17''	124° 57' 30''
16	10° 48' 00''	124° 57' 44''

17	10° 47' 45''	124° 57' 44''
18	10° 47' 30''	124° 57' 30''
19	10° 47' 15''	124° 57' 45''
20	10° 47' 15''	124° 58' 00''
21	10° 47' 00''	124° 58' 20''
22	10° 46' 15''	124° 58' 20''
23	10° 46' 15''	124° 58' 15''
24	10° 47' 00''	124° 58' 15''

PARCEL II

CORNER	LATITUDE	LONGITUDE
1	10° 48' 00''	124° 59' 30''
2	10° 47' 00''	124° 59' 30''
3	10° 47' 00''	124° 59' 45''
4	10° 46' 45''	124° 59' 45''
5	10° 46' 45''	124° 59' 00''
6	10° 46' 15''	124° 59' 00''
7	10° 46' 15''	124° 58' 50''
8	10° 46' 50''	124° 58' 55''
9	10° 46' 50''	124° 59' 25''
10	10° 47' 00''	124° 59' 25''
11	10° 47' 08''	124° 59'05''
12	10° 47' 30''	124° 59' 22''
13	10° 47' 36''	124° 59' 22''
14	10° 47'36''	124° 59' 00''
15	10° 47'50''	124° 58' 30''
16	10° 47'50''	124° 58' 15''
17	10° 48' 00''	124° 58' 15''

The proposed project areas which are Parcel I and Parcel II more or less enclosed Lake BITO (refer map).

3.0 AREA OF WORK COVERAGE

The approximate area applied for the Mineral Production Sharing Agreement is 523.5668 hectares.

4.0 DESCRIPTION OF THE PROJECT AREA

The proposed project area intended for exploratory works is situated along the municipalities of Macarthur and Javier, Province of Leyte. This exploratory works more or less surrounds Lake BITO.

4.1 TERRAIN/PHYSIOGRAPHY

One of the municipalities (MacArthur) of the proposed project area is generally along the coastal area which extends in some portions towards the west (municipality of Javier) to the vast alluvial plain. The topography of the proposed project area is generally flattish, with an average elevation not exceeding 10 meters above sea level based on the 1:50,000 scale topography map, Abuyog Quadrangle.

4.2 LOCATION AND ACCESSIBILITY

The proposed project areas are accessible through air and land trips. Daily domestic flights serving the Manila-Tacloban City route and long distance buses from Manila going to Matnog, Sorsogon via the Maharlika Highway, crossing the San Bernardino Strait to Samar Island then the provincial road passing the San Juanico Steel Bridge to Leyte Island, Tacloban City thence to any motorized vehicle (less than two hours) towards the project site.

From Tacloban City, going south following the Maharlika highway up to Brgys Pongon, Calsada and Salug which are along the highway. Parcel II, which is within these barangays is accessible through feeder roads or on foot trails. Parcel I is accessible from Barangays Inayupan, Pinocawan and Salug via the feeder road or some on foot trails.

4.3 DRAINAGE SYSTEM

The entire area covered by the proposed MPSA contract is drained by natural depressions, creeks and possibly local irrigation canals toward Mayo River located north of the applied area. The southern portions of the Parcels similarly drain to Bito River located South of the project sites which empties its load at Leyte Gulf.

4.4 VEGETATION

The proposed project area is vegetated with coconut trees, rice, and root crops aside from tertiary growths and shrubs, fruit bearing trees, other domestic plants, tropical shrubs and marsh grasses, some bamboo plants along creeks and river systems while mangrove trees and neap palms on mangrove areas.

4.5 LAND USE

The affected municipality for the Mineral Production Sharing AgreementApplication has each own corresponding "Land Use Plan" which is self explanatory.

Tabulated below is the municipality's land use plan with corresponding area coverage:

Municipality	Description of Land Use	Area Covered (Hectares)
MACARTHUR	Built-Up Areas	131.6851
	Agricultural	5,538.6400
	Forest area	1,181.8600
	Agro-Industrial Areas	32.8000
	Lake Bito	169.8000
	Swamps/Marshes/Mangroves	48.1380
	Open Grassland	241.5985
JAVIER	Agricultural	9,739.5600
	Residential	32.3100
	Commercial	0.6700
	Open Space (rivers & creeks)	50.4000
	Roads	102.3450
	Swamps/Marshland/Fishpond	0.2150
	Unclassified (timberland)	5,344.5000

5.0 DESCRIPTION OF EXPLORATION WORK PROGRAM

5.1 Research Work

Research works conducted show that the previous geological study relative to magnetite sand deposit in eastern Leyte was undertaken by the previous Geologists of the Mines and Geosciences Bureau, Central Office during the late 60's and early 70's. These are the works of D. B. Almogela (1970), j. Santiago (1971), R.R. Zerda (1971 and 1974), E. N. Manalang (1973), and J. G. Lauron (1973).

The concentration of magnetite materials are layered and oftentimes lenticular in form which pinch out and swell abruptly. The thickness of the layers varies from about one (1) centimeter to thirty (30) centimeters. From the shoreline, the aerial extend of the magnetite beach sand is about a half kilometer inland (E. N. Manalang, 1973).

Mineral characterization on the magnetite sand deposits at the eastern coast of Leyte has been also conducted by C. L. Balce and R. H. Obtanilla, Jr. (2003). This study noted that significant concentration of magnetite sand usually occur at the mouth/in near proximity of major rivers in the area

INCO Mining Corporation had undertaken exploration and on commercial production on the mid 60's to early part of the seventies along the coastal areas of Palo and Tanauan. Japan was the company's market for magnetite sand. Other information were not available with the concerned office.

Further research study will be undertaken on areas which had been identified as mining area of the previous company. This activity will be completed within two (2) months with an estimated cost of PhP 185,000.00.

5.2 Reconnaissance/Regional Survey

5.2.2 Regional Geological Survey

A reconnaissance geological mapping will be conducted on the entire applied area using the data and information gathered during the research activity, with a topographic map having a scale of 1:50,000 scale as the base map. Geological mapping will be conducted along creeks/river channels, road cuts/shoulders and trails using compass and a GPS instrument. Areas identified with high magnetic concentration will be plotted accordingly on the base map. At least thirty (30) samples, will be collected for megascopic study and physical tests.

This activity will be completed within three (3) months by a team composing of the following personnel requirement and an estimated budget of PhP 477,500.00:

Geologist	- PhP	210,000.00
Three laborers	-	67,500.00
Supplies and Other expenses	-	50,000.00
Laboratory analysis	-	100,000.00
Incidental Expenses	-	50,000.00
	PhP	477,500.00

5.3 Semi-detailed Survey

5.3.1 Geological mapping and Alteration Studies

After determining areas with high magnetic fraction gathered during the previous activity, a semi-detailed geological mapping will be undertaken. The geological work includes geological and alteration mapping, sampling, test pitting, trenching and auger drilling. Samples collected will be subjected for laboratory analysis.

Geological mapping will be implemented using a compass and open tape traverse method. A handheld GPS will also be used in locating rock samples and other information. Gathered information will be depicted

in a map with a scale of 1:10,000. Thirty (30) rock samples will be collected for megascopic study and future references.

This activity will be completed within three (3) months by a team composing of the following personnel, with each corresponding salaries/wages to wit;

Salary of Geologist/Mining Engineer	-	PhP	210,000.00
Wages of 6 Laborers	-		135,000.00
Supplies and Other expenses	-		50,000.00
Laboratory Analysis/ Transportation	-		60,000.00
		PhP	455,000.00

5.3.4 Subsurface Investigation (Test pitting/Trenching)

Test pitting and trenching activities will be undertaken on areas identified with mineralization during the regional and semi-detailed geologic mapping, preliminary test pitting and trenching activity. At least fifty (50) test pits, will be sunk along highly mineralized areas with an average depth of five (five) meters. A total of 100 samples will be collected for laboratory analysis for its iron content using Spectrophotometric Method undertaken by private laboratories in Metro Cebu and Metro Manila. Analysis of titanium dioxide (Ti02) may also be required in some specifications.

At least twelve (12) personnel, including geologist/mining engineers and laborers will handle in the conduct of the semi-detailed subsurface activity. This activity is estimated to be completed in four (4) months with an estimated cost of approximately **P** 780,000.00. This includes the following;

Salary of Geologist/Mining Engineer	-	PhP	280,000.00
Wages of 10 Laborers	-		300,000.00
Laboratory Analysis/ Transportation	-		100,000.00
Supplies and Other expenses	-		50,000.00
Incidental Expenses	-		50,000.00
		PhP	780,000.00

A progress report with geologic and assay map indicating the specific locations of test pit logs and subsurface profile will be the output of this activity. This report is for review by the consultant for comments prior to presentation to the project proponent.

5.4 Detailed Subsurface Studies

5.4.1 Detailed Geologic Survey

Detailed geological mapping will be undertaken within areas with high magnetic fraction in order to assess, characterized and establish the extent of magnetic fraction. Closer grid percussion drilling will be carried out in a number of sites to determine the lateral, subsurface, continuity and thickness of overburden materials. Sampling will be undertaken and all samples will be subjected for a test run, i.e. magnetic separation. Compass and tape traverse method will be the most practical type of survey undertaken for traversing rivers and creeks/ grid lines.

Approximately the whole applied area will be subjected to detailed geological studies to finally delineate a sizeable resource that can be economically developed and explored. This activity is estimated to be completed within four (4) months with an estimated cost of **P** 825,000.00

Salary of Geologist/Mining Engineer	-	PhP	280,000.00
Wages of 10 Laborers	-		300,000.00
Laboratory Analysis/ Transportation	-		100,000.00
Supplies and Other expenses	-		50,000.00
Incidental Expenses	-		95,000.00
		PhP	825,000.00

Detailed geologic report with maps of 1:100 to 1:500 will be the output. Rock type, structural and other data to include laboratory results will be plotted in the corresponding map. This report will be presented and submitted for evaluation by the consultant.

5.4.2 Detailed Subsurface Investigation

A follow-up detailed drilling activity of the previous subsurface work will be undertaken along promising sites already delineated. These includes additional test pits and trenches to determine the extent of mineralization at depth.

Test pitting, trenching and percussion drilling will be undertaken on identified promising sites for magnetite mineralization.

About twenty (20) ssites with potential deposits will be subjected for test pitting, trenching and drilling. A total of 100 meters deep will be expected for the excavation. Samples taken for every meter interval will be used to run through a magnetic separator for the necessary test required.

This type of activity has an estimated cost of PhP 880,000.00. This includes professional fees, salaries and wages of laborers, traveling expenses, laboratory analysis and other expenses to wit:

Salary of Geologist/Mining Engineer	-	PhP	280,000.00
Wages of 10 Laborers	-		300,000.00
Laboratory Analysis/ Transportation	-		100,000.00
Supplies and Other expenses	-		100,000.00
Incidental Expenses	-		100,000.00
		PhP	880,000.00

6.0 PROJECT EVALUATION

All data gathered and complied since the start of the activity will be the basis for the preparation of the final report and for evaluation by the exploration geologist. Thus, this will be referred to an exploration consultant for final evaluation. Estimated expenses for this activity is **P** 200,000.00 and will be completed in four (4) months.

7.0 TOTAL ESTIMATED EXPLORATION COST

FIRST YEAR	**PhP**	**1,442,500.00**
SECOND YEAR	**PhP**	**1,905,000.00**
Total	**PhP**	**3,347,500.00**

8.0 Map Attachment

A topographic map with a scale of 1:50,000 is attached in this Work Program showing the location of the proposed contract area.

9.0 Name and Signature of person preparing the program

JEROME Y. BARROQUILLO
Mining Engineer
PRC No.: 905
PTR No.: 0050992
Issued at: Cabadbaran City
Issued on: January 9, 2008

PROPESED TWO-YEAR EXPLORATION WORK SCHEDULE WITH CORRESPONDING COST ESTIMATE

ACTIVITIES	YEAR 1	YEAR2
1. Research Work	P185,00	
2. Regional Geological Survey	P477,500.00	
Semi-Detailed Survey 3.GeologicalMapping and Alteration	P455,000.00	
4. Subsurface Investigation	P 780,000.00	
5. Detailed Geologic Mapping		P 825,000.00
6. Detailed Subsurface Investigation		P 880,000.00
7. Project Evaluation		P200,000.00

ANNEX –"C"

ENVIRONMENTAL WORK PROGRAM

ENVIRONMENTAL WORK PROGRAM FOR EXPLORATION

1.0 NAME & ADDRESS OF PROJECT PROPONENT

VINCENT TAN TIONG

Fort Ilocandia, Brgy. 37, Calayab, Laoag City, Philippines

2.0 TYPE & PURPOSE OF THE PROJECT

The objective of the project/exploration work is to assess the minerals present in the area in order to determine the economic viability of the deposit. In this regard, the proponent will be undertaking two-year geological exploration activities to determine the characteristics of the minerals, which in this particular case, magnetite and other metallic minerals found in the area.

The geological exploration works is divided into three phases, namely; reconnaissance, semi-detailed and detailed geological surveys. The results of the geological exploration will be the basis for the selection of viable areas for the development and exploitation of valuable minerals found therein.

Part and parcel of this undertaking is an environmental work program for exploration, which is a mandatory requirement in the processing and evaluation of applications for mineral agreements. A

Gantt chart showing the schedule of environmental activities (figure 2) aimed at mitigating its identified impacts is shown hereof.

3.0 GENERAL LOCATION & AREA COVERED

The area being referred in the proposed exploration activities under the MPSA proposal of Vincent Tan Tiong is situated within the Municipalities of Macarthur and Javier, Province of Leyte. It covers a total approximate area of Five hundred twenty three and 5668/100000 hectares (523.5668 has.). It is specifically described in the attached location map.

The proposed area is located at the municipalities of Macarthur and Javier, Leyte. The Municipality of Macarthur, which is south southwest of Tacloban City is about fifty minutes ,more or less, drive via the well-paved Daang Maharlika highway and then passing through the towns of Palo, Tanauan, Tolosa, Dulag, and Mayorga. While the town of Javier is about one hour and fifteen minutes from Tacloban City.

Tacloban City is serviced by at least four (4) daily plane flights from Manila. It is also serviced by daily long-distance buses from Pasay City, and likewise buses and boats from Cebu City. Buses also are available from Manila going south and crossing by ferryboats, thence to Samar Island and to the towns of Leyte.

4.0 DESCRIPTION OF EXISTING ENVIRONMENT

4.1 Land Environment

4.1.1 *Topography/Physiography*

The area under consideration is characterized by moderate topography to generally steep slopes at Parcel II or eastern part of the proposed area. The elevation averaged more or less 10 meters above the sea level. However, the highest elevation within the project area is less than 50 meters above the sea level, which is located near the northeast portion of Parcel II of the proposed area.

4.1.2 *Land use/capability*

As observed during the preliminary survey, the project site covered by the proposed exploration activities is predominantly agricultural with marginal productions. Relatively rolling areas and those with gradual slopes are being cultivated either manually or by using farm work animals. The cultivated areas are planted with legumes and other cash crops. Common vegetation includes coconuts, bananas, fruit bearing trees shrubs and grasses. No extensive vegetative cover can be seen on the project site. Steep mountain slopes and mountaintops are usually denuded and with sparse vegetation.

4.1.3 *Pedology*

The types of soil found in the municipality are the following:

a. Pulupandan Sandy loam;
b. Silay loam;
c. Quingua clay loam;

The Quingua clay loam is oxidized and found to have a high iron content giving a red porous appearance, which is incapable/unsupportive of root crops.

4.2 Water Environment

4.2.1 *Water Quality*

The area and immediate vicinity are drained approximately south-easterly by many tributaries river system. Said river empties its load to the Leyte gulf.

4.2.1 *Groundwater*

Groundwater flow in the area is generally easterly. Several unnamed creeks, tributaries that comprise the whole project area.

4.3 Climatology/Meteorology

Rainfall pattern and distribution graphs and maps adopted from the records of the Philippine Atmospheric Geophysical and astronomical Agency (PAGASA), National Irrigation Administration (NIA) and Department of Agriculture (DA) –

Experimental Stations for the past ten years or more show that Tacloban City receive the largest volume of rainfall in the island averaging 3,500 mm to 4,000 mm per year. This rainfall volume invariably increases when several typhoons pass the area within the year. Mean temperature at the Tacloban City station is lowest in January at 25.8°C and highest in May at 28.2°C.

Tacloban PAGASA station records show that the wettest months are generally during November, December, January and February. The most potential hazards that may affect areas located at the lower eastern portion of the applied claim area just adjacent to the shoreline. This zone is a vast flood plain area, which is very susceptible to flooding during inclement weather or during the passage of tropical cyclone as the proposed project area is in Eastern Visayas. It is within the typhoon belt of the Philippines. Large rivers such as Mayo and Bito where located at the town of Javier A tendency to meanders and overflow that could course intense erosion at the concave sections of the riverbanks.

4.4 Geology

There are no reported incidences of landslide or mass movement in the area and nearby vicinity. Minimal erosion could be observed along high slopes and at riverbanks.

The oldest rock unit in the area is the Piao ultramafics representing the basement rocks in Danao hill, which is north-

northwest of Javier. This rock unit is typified by a massive circular hill enclosing Lake Bito and the isolated low-lying elongated ridges locally called Piao Mountains, north-northwest of Abuyog town. Other outcrops of this kind are not seen within the volcanic sequence, although boulders of ultra basic rocks scatter along Bito River and around Mt. Danao.

4.5 Biological Environment

The present vegetation in the area of interest consists dominantly of luxuriant growth of secondary forest. Secondary growths consisting mostly of small to medium-sized trees are more or less evenly distributed in the area interspersed with dense stand consisting mostly of shrubs, poles and saplings. Associated with these are various species of erect or climbing shrubs and herbs like palms, vines and ferns and some epiphytes such as orchids.

Clear water indicators were found dominating the bottom-dwelling community in the Bito River, indicating good water quality supportive of fisheries. In Mayo River on the other hand, pollution indicators were high in both upstream and downstream stations, indicating high organic inputs into the river from domestic usage.

Ten (10) species of benthic fauna were identified in Bito while eight (8) species in Mayo. The commonly caught fishery species along Bito River system were the freshwater eel (kasili),

gobies (bunog), tilapia, crabs (uwang) and shrimps (ulang, tamyok and itman).

4.6 Socio-economic Environment

4.6.1 *Demography*

Based on the 1995 survey, the municipalities involve had an average annual growth rate of 5.3%. The density of the municipalities involve are still below 300persons/kilometres.

4.6.2 *Income/Industry*

The income relies mainly on agriculture, which occupies 42.63% of the total land area. Major crops each year are rice and coconut. Secondary crops are abaca, corn, sweet potato, cassava and gabi. Small industries are limited to sand and gravel quarrying and hollow block production, concrete balusters, décor blocks and concrete production.

4.6.3 *Transportation*

Passenger buses, jeepneys, multi-cabs and motorcycle are readily available transportation of the people. A number of bus trips to and from Tacloban daily that people can avail of. Most often, motorcycles multicabs provide transportation from the town proper to the remote barangays.

4.6.4 *Water Supply*

Shallow and deep wells are the main sources of domestic water requirements in most areas, especially in the lowland areas. In the upland barangays springs are the sources for domestic use. Private individuals have installed a similar facility in the upland areas and developed this into a Level II system.

4.6.5 *Social Welfare Services*

The social welfare services are extended mainly by DSWD. Their target clientele are the 0-6 years-old children or the pre-schoolers, the youths, especially out of school youth, the parents, the elderly, and the women and disable/depressed persons.

4.6.6 *Power*

Most of the barangays of the municipality Javier has been energized by the DORELCO. The remaining barangays are still waiting to be energized.

5.0 DESCRIPTION OF EXPLORATION WORK

5.1 Description of Exploration Method(s) and Equipment to be used

5.1.1 *Reconnaissance Geologic Survey*

The activity is the first stage in the conduct of the geological exploration survey. A Mining Engineer or

Geologist and support personnel will conduct brief visits to the subject area in order to familiarize with the accessibility, peace and order situation, environmental setting and other related information/conditions prevailing in the target area and the information/conditions prevailing in the target area and the immediate adjacent vicinities. Surface geological mapping and sampling will be conducted in order to identify and delineate the major rock types in the area and possibly update whatever technical information is currently available. Brunton Compass, tape and Geographical Positioning System (GPS) will be the tools used in said activity.

5.1.2 *Geological Mapping*

Before the actual fieldwork, commence an aerial photo interpretation study will be carried out. This work will be undertaken utilizing aerial photographs with a stereotype. The aerial photo interpretation study will primarily cover the 105.00265 hectares; which is the entire area applied for. A regional geological report with maps will be the main output of the Regional Geological Survey work. Maps with scale of at least 1: 50,000 will accompany the report. Rock samples with results of laboratory analysis will also be plotted on the map and indicated on the report.

5.1.3 *Geochemical Method*

The entire applied area of 105.00265 hectares will be subjected to the regional geochemical survey, both the geological and geochemical survey will be done simultaneously at least fifteen (15) stream sediments samples are planned to be collected during this work phase. The samples are planned to be collected during this work phase. The samples collected will be sent to a reputable laboratory in Cebu City or Metro Manila for Gold, Silver, Copper, Lead, Zinc, Arsenic and Molybdenum analysis by Atomic Absorption Spectrophotometry (AAS). The analysis of other elements may be made if deemed necessary. Some samples may be sent for fine assay analysis.

5.1.4 *Geophysical Method*

An initial geophysical survey may be conducted when results of the preliminary work are extremely good and encouraging otherwise geophysical survey may not be necessary.

6.0 Identification of Potential Environment Effects

6.1 On land

6.1.1 *Surface disturbance on the mineral property subject of exploration such as road access construction, etc.*

No new access roads will be constructed as the existing access will be utilized. A few drill paths may be constructed when there is drilling.

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 land forms due to excavations*

Some test pits may be dug in anomalous areas with no outcrops. Test pits are generally 1.0 m^2 and at most 2m deep. Timbering will be erected in loose ground as a safety measure. If drilling is warranted, drill pads 3m X 5m will be constructed. As this is a temporary activity, drill crews will be housed in makeshift huts using tarpaulin tents. All waste will be buried or disposed elsewhere properly. Water for drilling will be sourced from nearby streams and pumped to the drill site. In areas where drill sites are more, access tracks about 1.5m wide will be constructed. These activities may render vegetative cover damage, soil compaction and landform changes and possibly generate soil or

rock wastes. A helicopter supported drilling program is also a possibility.

6.1.2.2 *Changes in rate of erosion*

The rate of erosion may increase in the areas subject to exploration particularly on the development of trenches and construction of access roads.

6.2 On hydrology and water quality

6.2.1 *Potential generation of acid mine drainage*

During exploration, there will be no generation of acid mine drainage. However, after exploration during the mining stage, there may be a possibility of acid mine drainage formation and some mitigating measures will be installed at the affected areas to prevent disastrous effect as the case may be.

6.2.2 *Siltation and pollution of surface waters*

Drill path and drill site construction, trenching and test pitting will result a minimal siltation at the adjacent of creeks and streams in the immediate vicinity. Drilling fluids and cuttings may also contaminate the creeks and streams if not properly handled.

6.2.3 *Changes in hydrology*

Negligible changes in water availability and quality, and in the drainage pattern is expected due to exploration activities.

6.3 On the Ecology

Insignificant effect on the ecosystem in the project area is expected. As much as possible cutting of trees will definitely be avoided.

6.4 On Socioeconomic Effects

Exploration activities in the area mean employment and attendant business opportunities to the local inhabitants. Direct local taxes, purchases, donations and good community relations with the local people and government will improve the economic conditions of the immediate and surrounding communities.

7.0 Environmental Management Measures Including Total Cost

7.1 Progressive rehabilitation/restoration on areas subject of exploration

Areas affected by exploration activities such as stripped lands due to drill path and drill site construction will be replanted/re-vegetated. This will prevent landslides and mitigate soil erosion. Rip-raps on potential slide areas shall be

constructed. During exploration, vegetation removal can be minimized by ensuring minimum standards as to track and grid line widths.

7.2 Management of stockpile of excavated and removed earth, if any, to prevent dust and siltation problems and reduce the impact of topographical changes

Only a limited number of trenches and test pits will be dug and the removed soil and rocks will be saved and the same shall be used as backfill immediately after sampling and mapping. Care will be exercise that diggings will be refilled first with sulphide laden spoils followed by the upper layer of the removed earth. This prevents the sulphides from being exposed and later dissolved/leached, which may lead to the formation of acid drainage. The refilled excavation sites will then be replanted as with the abandoned drill sites. Disposal areas of removed earth shall also be re-vegetated and drainage canals provided whenever necessary.

7.3 Maintenance of roads to minimize dust

Roads shall be sprayed with water regularly specially during the summer months when excessive dust is generated.

7.4 Handling of toxic and hazardous materials, if any including an Emergency Response Program

To protect ground water from being contaminated by drilling effluents, one or two settling pits will be constructed to contain and precipitate the sludge. These pits will be backfilled by earth/soil immediately after drilling. Aside from diesel, petrol and drilling mud, no other hazardous chemical will be used during the exploration period. Fuel storage sites shall be provided with bunds lined with impervious materials to prevent contamination of the soil in case of spillage.

7.5 Accommodation of other economic activities in the area

As the need arises, the establishment of a community/cooperative or even a wet market shall be encouraged for the procurement of food and other necessities for the employees. Livelihood seminars will also be sponsored to teach employees and nearby residents new skills and alternative sources of income.

7.6 Alternative plans if special habitat of flora and fauna are affected

No special habitat of flora and fauna will be affected during the exploration period.

7.7 Socioeconomic mitigating measures

7.7.1 *Plans for information and education campaign and dialogue between the company and population regarding project plans including compensation measures, if necessary*

A field coordinator will be appointed from the local community to facilitate communication between the company and the people. Part of his/her responsibilities will be to inform the barangay, municipal and provincial authorities as to the nature of work programs and duration thereof. Salaries and wages will be according to the government approved standard rates for the region.

7.7.2 *Working environment and protection measures for employees*

Hired regular employees shall be accorded the benefits mandated by law. Adequate protective equipment and gadgets shall be provided such as rain boots, raincoats, hard hats, and other specialized items (eye goggles for samplers, ear muffs for core cutter, etc.)

7.8 Abandonment

Affected areas will be rehabilitated by replanting/re-vegetating drill paths and sites, campsites and other clearings. All excavations will be refilled to their original condition and likewise replanted. Before abandonment, all non-biodegradable

waste materials will be removed for proper disposal outside of the site.

7.9 Total Cost

It is estimated that 10% of the Exploration Budget will be sufficient to cover these environmental management measures. This is estimated at Php 1,400,000.00 for Year 1 and Php 1,800,000.00 for Year 2. It is expected that most of these budgets will be for the rehabilitation of drilled areas (70%), timbering and backfill of trenches and test pits (20%) and waste disposal (10%). Details of the cost distribution of the different activities are shown in figure 3.

In consideration of the particular environmental sensitivity of the EP area, the company will adopt a Code of Practice to apply to all exploration carried out therein.

The following proposed environmental safeguards should be incorporated in the exploration work program.

In general this code mitigates the environment impact in the following ways:

1. Minimize soil disturbance;

2. Minimize vegetation removal and ensuring minimum standards as to track and grid-line widths, rehabilitation and replanting with native species in disturbed areas;

3. Exploration work will be carried out away from stream and drainage lines as far as reasonably possible such that water quality can be maintained. A buffer zone of 20m will be maintained to ensure that run-off from drilling activities does not pass directly into streams;

4. Vehicular access if necessary will be planted to avoid areas where it may be difficult or environmentally damaging, and to minimize the impact on landscape values;

5. Rubbish and waste will be removed from exploration sites or survey areas;

6. Adequate precautions to avoid fire will be exercised;

7. Permission to camp will be obtained from the local communities and advice will be sought from barangay, municipal and provincial authorities.

8.0 Attachments

8.1 Location map

8.2 Gantt Chart

Name and signature of the person preparing the program

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Conforme:

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Proponent

COST DISTRIBUTION OF ENVIRONMENTAL MANAGEMENT AND ENHANCEMENT PROGRAM

			ESTIMATED COST
I.	**ENVIRONMENTAL MANAGEMENT**		
	a. Rehabilitation of affected roads	-	Php 75,000.00
	b. Planting of appropriate tree specie	-	35,000.00
	c. Rehabilitation of excavated surface and disturbed area	-	40,000.00
	d. Road watering maintenance	-	30,000.00
			Php 180,000.00
II.	**SOCIOECONOMIC PROGRAM**		
	a. Donation to annual, barangay fiesta	-	Php 50,000.00
	b. Provision of hand pumps to affected barangays	-	25,000.00
	c. Hog-raising program	-	45,000.00
			Php 120,000.00
III.	**ABANDONEMENT MEASURES**		
	a. Replanting/revegetating drill paths, drill sites	-	Php 40,000.00
	b. Filling of excavated areas	-	20,000.00
	c. Waste disposal	-	40,000.00
			Php 100,000.00
	TOTAL		**Php 400,000.00**

8.2 GANTT CHART

ENVIRONMENTAL WORK PROGRAM

24 - Months Proposed Work Program