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

SECRETARY'S CERTIFICATE

I, CEILITA A. CATUBAY, of legal age, Filipino and with postal address at Unit K, Greenhills Square, EDSA cor. Florida St., Greenhills, Mandaluyong, Metro Manila, after having been duly sworn to in accordance with law hereby depose and say:

That I am the duly elected Corporate Secretary and Treasurer of Claver Mineral Development Corporation, a domestic Corporation duly organized and existing under the laws of the Philippines with principal office at Unit K, Greenhills Square, EDSA cor. Florida St., Greenhills, Mandaluyong, Metro Manila;

That in the Organizational Meeting of the Board of Directors held at its aforesaid office on February 10, 1995, at 5:00 P.M., wherein a quorum is present, the following resolution was passed and adopted:

Board Resolution 95-002

"RESOLVED, as it is hereby resolved, that MS. FE M. LIGTAS be authorized by the Corporation to sign and follow-up the corporation's application for MINERAL PRODUCTION SHARING AGREEMENT (MPSA) with the BUREAU OF MINES, hereby vesting unto said MS. FE M. LIGTAS full power and authority to sign any and all documents that maybe necessary in connection therewith."

That the foregoing is true and correct, as it appears in the records of the Corporation.

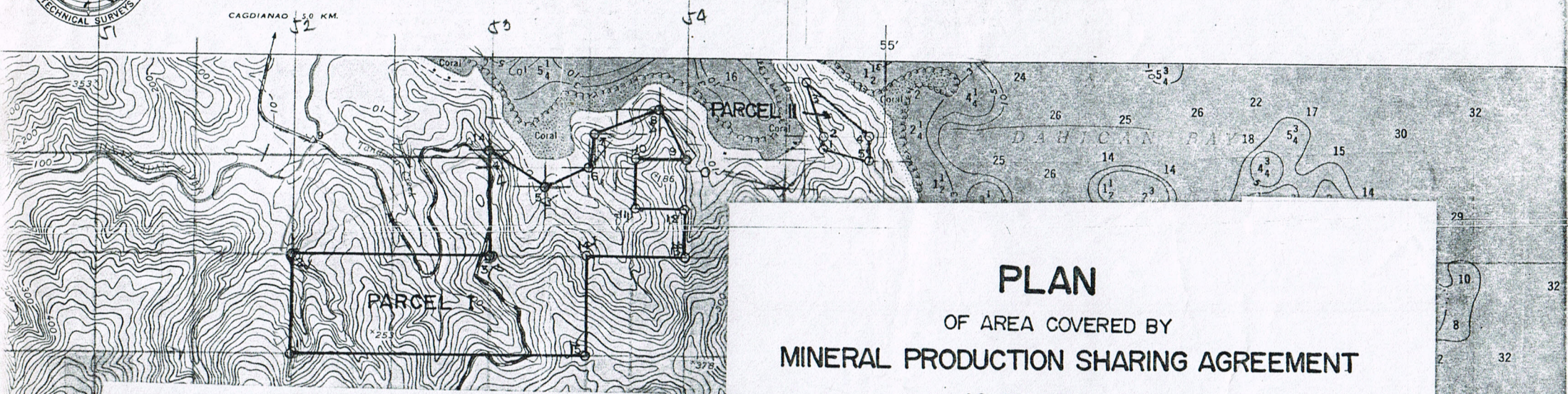
CEILITA A. CATUBAY
Corporate Secretary

SUBSCRIBED AND SWORN to before me this 10th day of February 1995. Affiant exhibiting to me her Community Tax Cert. No. 1144492 issued on January 9, 1995 at Quezon City, Philippines.

Doc. No. 465
Page No. 93
Book No. 209
Series of 1995

ATTY. HECTOR B. CENIEN
NOTARY PUBLIC
PTR # 549346
ISSUED AT: QUEZON CITY
DATE ISSUED: JAN 5, 1995
PAID UNTIL: DEC. 31, 1995

CARRASCAL



LINE	LATITUDE	LONGITUDE
	PARCEL I	
1 2	9° 28' 30".00	125° 52' 00".00
2 3	9° 29' 00".00	125° 52' 00".00
3 4	9° 29' 31".30	125° 53' 00".00
4 5	9° 29' 21".00	125° 53' 17".00
5 6	9° 29' 30".00	125° 53' 31".00
6 7	9° 29' 37".00	125° 53' 31".00
7 8	9° 29' 44".00	125° 53' 52".00
8 9	9° 29' 30".00	125° 54' 00".00
9 10	9° 29' 30".00	125° 53' 45".00
10 11	9° 29' 15".00	125° 53' 45".00
11 12	9° 29' 15".00	125° 54' 00".00
12 13	9° 29' 00".00	125° 54' 00".00
13 14	9° 29' 00".00	125° 53' 30".00
14 15	9° 28' 30".00	125° 53' 30".00
	PARCEL II	
1 2	9° 29' 37".00	125° 54' 42".50
2 3	9° 29' 53".00	125° 54' 36".00
3 4	9° 29' 37".50	125° 54' 56".00
4 5		

PLAN

OF AREA COVERED BY

MINERAL PRODUCTION SHARING AGREEMENT

AS PREPARED FOR

CLAVER MINERAL DEVELOPMENT CORPORATION

SITUATED IN THE

SITIO OF: KINALABLABAN
BRGY. OF: CAGDIANAO
MUN. OF: CLAVER
PROV. OF: SURIGAO DEL NORTE
ISLAND OF: MINDANAO

AREA : 433.9798 Has.

Note: Erroneous presentation of T.D.

GINO L. SOBREVINAS, JR.

DETAIL IS PLOTTED FROM

MGB Form No. 05-4

CLAVER MINERAL DEVELOPMENT CORPORATION

EXPLORATION WORK PROGRAM

1.0 Name and Address of Company

Claver Mineral Development Corporation
2nd Floor, LPL Mansion, Alfaro Street
Salcedo Village, Makati City

2.0 Location of Project

The proposed contract area is situated within the Surigao Mineral Reservations in Barangay Cagdianao, Municipality of Claver, Province of Surigao del Norte. The area is roughly 90 km. From Surigao City which is the capital of the province.

The boundary of the proposed contract area is defined by:

	POINT	LATITUDE	LONGITUDE
Parcel I	1 - 2	9°28'30".00	125°52'00".00
	2 - 3	9°29'00".00	125°52'00".00
	3 - 4	9°29'31".00	125°53'00".00
	4 - 5	9°29'21".00	125°53'17".00
	5 - 6	9°29'30".00	125°53'31".00
	6 - 7	9°29'37".00	125°53'31".00
	7 - 8	9°29'44".00	125°53"52".00
	8 - 9	9°29'30".00	125°54"00".00
	9 - 10	9°29'30".00	125°53'45".00
	10 - 11	9°29'15".00	125°53'45".00
	11 - 12	9°29'15".00	125°54'00".00
	12 - 13	9°29'00".00	125°54'00".00
	13 - 14	9°29'00".00	125°53'30".00
	14 - 15	9°28'30".00	125°53'30".00
Parcel II	1 - 2	9°29'37".00	125°54'42".50
	2 - 3	9°29'53".00	125°54'36".00
	3 - 4	9°29'37".50	125°54'56".00
	4 - 5	9°29'30".00	125°54'56".00

3.0 Area or size of coverage (hectares)

The proposed contract area covers approximately four hundred thirty three and 9798/10,000 hectares.

4.0 Project Area Description

4.1 Terrain/Physiography

Straddling the eastern foothills of the Diwata Range and hugging the coast, the area is characterized by a generally moderate to rough topography with prominent ridges and numerous intervening narrow valleys. The highest elevation is almost 300 meters, with most part of the area not lower than 30 meters above sea level. The rather rugged terrain in the southern part of the area passes on to a gentler and more subdued landscape to the north and northeast. The ridges tend to follow a more or less north-south trend possibly reflecting the general structural grain of the region.

4.2 Accessibility

It takes anywhere from two to three hours by car to cover the Claver-Surigao city route. Regular passenger jeepneys and buses ply this route. From Manila and Cebu, Surigao City is serviced daily by Philippine Airlines. Interisland vessels connect this city with other areas in Mindanao and the Visayas.

4.3 Drainage System/s

The Hinadladan River and Tandawa Creek make up the most important water systems within the immediate area. these empty into Dahican Bay which straddles the northern and eastern portion of the area. Minor streams and tributaries are mostly intermittent and tend to be dry for most part of the year.

4.4 Vegetation

Vegetation cover in the area may be classified under two main types: natural vegetation consisting of forest and grass/shrub formations; and cultivated vegetation. Plant species belonging to the natural vegetation category are mostly found in the forest and uplands and consist principally of dipterocaps, bamboo, molave, and various wild shrubs and lesser plants. Trees like acacia, apitong, balete, banana (butuan), lauan, ipil-ipil, and many other commercial tree species typifies this formation. Various species of orchids are also common in the forest land, although these had also been decimated with the loss of the primary forest cover. In the open grasslands on the other hand, mainly cogon and other grass species and shrubs like amorseco, aamo, cadena de amor, etc. Predominate. Portions subjected to reforestation commonly support species like mangium,

agoho, gmelina and large-leafed mahogany. Bamboo (buho) are mainly found along drainage channels where they commonly form impenetrable clumps.

Cultivated vegetation includes the plant species that are utilized for food or ornamental purposes. This includes coconut, banana, mango, guava, camotent-cahoy, caballero, bignay, and other fruit and ornamental trees and plants. These species are commonly found in clear-cut and cultivated areas.

4.5 Land Use

The major portion of the proposed contract area is bare of forest cover and supports only minor trees, shrubs and cogon grasss. Thick clumps of vegetation are encountered only along the major waterways where plant growth is more conducive. The whole area is practically bare during the summer months and is visibly brown and earthy in color.

Only a very minor part of the area is utilized for residential purpose. Most of the houses and dwellings are found along the highway or major access routes, the coast, main water channels and in areas where the slopes are more favorable.

Agriculture in the area is dominated by coconut and other cash crops. This is particularly true along the coastal part of the area. Less accessible sections especially in the hinterlands are mainly barren or grasslands. The area appears to have a rather limited prospect for long term agricultural use due to the rather low productivity of the soil and the lack of adequate infrastructure support.

5.0 Description of Exploration Program

5.1 Research Work

The main exploration program will principally involve the following phases and activities:

1. Pre-Field Survey Stage
    a. Research Work
    b. Literature Survey
    c. Data Collation and Compilation
    d. Remote Sensing Studies
2. Semi-Detailed Survey Stage
    a. Geologic Mapping
    b. Geochemical Soil Sampling
    c. Auger Drilling
    d. Environmental Studies
3. Detailed Survey Stage
    a. Geologic Mapping
    b. Geochemical Grid Soil Sampling
    c. Auger Drilling
4. Test Pitting

5. Volume/Ore Reserve Calculations
6. Technical Feasibility Studies

5.1.1 Survey of previous work/s on the area

A number of geological studies had been carried in and around the area during the past thirty years or so. A lot of these centered on the characterization of the geology and mineral resources found therein. The most notable studies include those carried out by Rigor (1960) on the Ni-Fe resources of the Surigao Iron Reservation; Manlansing (1968) on a study of the laterite deposit in Dahican, Carrascal, Surigao del Sur; and Andrada & Sosa (1980) on mineral occurrences in certain areas in Carrascal, Cantilan, and Madrid, Surigao del Sur and Claver, Surigao del Norte. These studies indicated the occurrence of nickel-laterite and iron deposits in the area. Other works carried out by private exploration companies gave similar indications although access to these data may be less easy than those mentioned earlier.

5.1.2 Data compilation/collation

The proponent shall strive to obtain all pertinent geological, geochemical, and related data on the area during the course of data collation and compilation. From the data generated preliminary geological and mineral occurrence maps will be prepared and utilized as basis for the initial field survey of the target area.

The research and data compilation phase will entail a total cost of around thirty thousand (P30,000) pesos

5.2 Reconnaisance/Regional Survey or Studies

5.2.1 Remote sensing studies

Prior to the conduct of the actual field survey, a remote sensing study will be undertaken to arrive at an intial analysis of the geology and structural character of the area. The remote sensing study will include airphoto, radar and/or satellite images analysis and interpretations. The study will be carried out mainly in Manila by a reputable group that will be contracted upon the approval of the MPSA application. The remote sensing study will last for about two (2) months and will make use of three to four personnel. The main output from the study will be geological and lineament maps of a scale of 1:25,000 to 1:10,000.

The remote sensing study will entail an estimated cost of about one hundred thousand pesos (P100,000).

5.2.2 Regional Geological Survey

Except for a limited period (1 month) for conducting groundtruthing of the outputs of the remote sensing study, regional scale geological mapping or survey will not be undertaken. The preliminary geological and lineament maps generated during the previous phase is deemed sufficient for planning the semi-detailed phase of the exploration program.

5.2.3 Regional Geochemical Survey

Regional scale geochemical soil sampling will also not be undertaken in the area. There is sufficient initial data and information on the nickel-laterite deposit to proceed with the semi-detailed phase. The proponent is hopeful of retrieving geochemical and related data from previous studies and exploration works undertaken in and around the area. Preliminary geochemical anomaly map/s will be prepared from the data generated.

5.2.4 Geophysical Survey

Geophysical exploration techniques are not considered during this phase of the program.

5.3 Semi-detailed survey or follow-up studies

5.3.1 Geological mapping/alteration studies

Utilizing the output of the initial phase, a semi-detailed geological survey will be implemented to further delimit the lateral extent of the prospective nickel-laterite deposit/s. The actual field survey will include geological traverses along drainage channels, road cuts, and other surface exposures. Compass and tape mapping might be resorted to along sections with prominent exposures or mineralization. The survey will focus on the distribution and thickness of the nickel-laterite deposit and will also highlight its physical characteristics.

A total of five hundred hectares (500 has.) is expected to be covered by this program within a period of two to three months. A total of fifteen (15) personnel, three (3) geologists/field mappers and twelve (12) support staff (field aides and laborers) will be utilized to undertake this and the geochemical sampling program. The semi-detailed geologic mapping program is estimated to cost around eighty thousand pesos (P80,000).

The main output from this program are geological maps and sections of 1:10,000 and 1:5,000 scale and the corresponding geological/technical reports.

5.3.2 Geochemical Survey

A geochemical soil sampling program will be carried out concurrently with the semi-detailed geological survey. This will also cover 500 hectares with soil samples being taken at a density of 2 samples per hectare. Base of slopes and ridge and spur sampling procedure will be followed in this program. A total of around 250 to 300 soil samples is projected to be taken. Whenever good or promising exposures are encountered rock and saprolite samples will likewise be taken. It is projected that around 20 to 30 rock and saprolite samples will be obtained during this phase.

Soil samples will be analyzed mainly for Ni and Co by AAS following a hot acid digestion. Rock samples will be similarly analysed for Ni and Co with choice samples also subjected to XRD and petrographic studies.

The geochemical sampling program will be implemented by the same field team/s carrying out geological mapping. The cost estimate presented earlier covers both the geological mapping and the geochemical sampling programs.

The main output from this program are geochemical anomaly maps of a scale of 1:10,000 and 1:5,000; geochemical data for soil and rock samples; and corresponding technical reports.

The total cost for this program is estimated at seventy thousand pesos (P70,000).

5.3.3 Geophysical Survey

The proponent might consider this exploration option depending on the results obtained from the previous programs implemented.

5.3.4 Subsurface investigation

An initial test pitting program will be implemented during this stage and will be undertaken in the most promising or favorable sites. Around ten (10) to twenty (20) test pits will be excavated per site depending on the size and extent of the laterite deposit/s encountered or delineated. A total of fifty (50) test pits is targetted during this stage of the exploration program. About 70 to 100 geochemical soil samples are expected to be generated.

Test pitting will be undertaken in two (2) months and will require a total of twelve (12) technical and support personnel to implement. The estimated cost for this undertaking is around fifty thousand pesos (P50,000).

The main output will be geochemical profiles and geological sections per test pit, geochemical data, and corresponding technical reports.

5.4 Topographic/Cadastral Survey

The topographic/cadastral survey will be undertaken to the establish the topographic configuration of the area and to provide accurate ground control points for the field survey, particularly during the detailed phase. Around two hundred fifty hectares (250 has.) will be covered in this survey. This will be very useful in locating future developmental works and will also be critical in defining accurately the boundaries of the contract area. The topographic maps to be produced will be on a scale of 1:200 with contour intervals of 2 to 5 meters. An amount of one hundred fifty thousand pesos (P125,000) is programmed for the undertaking with the bulk of the work to be contracted out to reputable firms. The entire survey activity is projected to last two (2) months.

5.5 Detailed Survey or Studies

5.5.1 Detailed Geological Mapping

The detailed geological mapping program will be carried out using the compass and tape method with traverses being limited over relatively small area/s where the best and most prominent exposures or nickel-laterite occurrences are found. About 100 to 200 hectares will be covered under this program over a six-month period starting on the last quarter of the fisrt year. This will be implemented by a group comprising three (3) technical men (geologist/field mappers), three (3) geologic or field aides, and fifteen (15) pick-up laborers. The main equipment and tools to be utilized are brunton compasses, clinometers, sample pick, hand lens, meter tape, and other basis field supplies and materials.

Estimated cost for the detailed geological mapping program is placed at eighty thousand pesos (P80,000) covering expenses for field supplies and materials, contractual services, and wages for pick-up labor.

Output of this activity will include detailed geological maps and sections on a scale of 1:1,000 and 1:500 and corresponding geological reports.

5.5.2 Detailed Geochemical Survey

The detailed geochemical survey will be carried out using a grid system for sampling point location and control. Although the disposition and geometry of the grid system to be adopted has yet to be finalized, the initial plan is to have 20 to 30 picket lines of 400 to 500 meter lenght and 50 meter interval and with soil samples being taken at every 25-meter distance. In highly prospective sites, auger drilling will be carried out to provide a vertical dimension to the geochemical profile and to

identify variations in the Ni values at depht. A more closely-spaced grid pattern may also be opted for under this case. It is projected that about 600 to 700 soil samples will be generated during this stage of the exploration program.
The geochemical sampling program will take around 6 months to complete and is to be carried out concurrently with the detailed geological mapping program. The same field group undertaking the latter will do the sampling with additional 6 to 8 laborers to be utilized should the need arise.

As in the previous geochemical program, the output will be mainly geochemical anomaly maps and profiles on a scale of 1: 500 to 1: 100, soil geochemical data, and corresponding technical reports.

5.5.3 Subsurface Investigation

5.5.3.1 Drilling

Auger drilling will be undertaken in selected sites to obtain subsurface samples down to a depth of about 3 to 5 meters. In the initial semi-detailed phase, a regular hand auger will be utilized. This is capable of penetrating down to about a meter or more, with samples to be taken at about half a meter interval. During the detailed or follow-up stage, a mechanized auger drill will be utilized for better penetration. This will be instigated in the more promising area/s to allow testing of the deeper sections of the laterite profile. A more closely spaced sampling interval can be adopted during this phase to better define the variation in nickel-cobalt values and the physical characteristics of the laterite deposit.

The auger drilling program can be undertaken by 4 to 5 support personnel/laborers and 1 technical personnel to supervise and handle the mapping and sampling activities. The initial drilling program is scheduled for 2 months with about 40 to 50 holes targetted for completion. The detailed phase on the other hand is programmed for 3 months with about 100 to 120 holes targetted for drilling. It is estimated that around 200 to 300 soil samples will be generated by the auger drilling program.

The total estimated cost for this program is placed at one hundred seventy thousand pesos (P170,000).

5.5.3.2 Test Pitting

This is undertaken to obtain geological and other pertinent data on the subsurface and gain a better understanding of the characteristics of the laterite deposit. This is also crucial in arriving at a reliable estimate of the volume or reserves of the deposit. The test pits will be about one to one-and-a-half square meters in area and will go down to the depth of bedrock or saprolite. Depending on the physiography or terrain of the

laterite deposit, the depth of the test pit will be anywhere from 3 to 6 meters. Actual excavation will be undertaken using implements like picks, shovels, crow bars, buckets and pulleys. No mechanized equipment will be utilized during this program.

Around 150 to 200 test pits are programmed to be excavated during the two-year exploration program with about 50 scheduled during the semi-detailed phase and 100 to 150 during the detailed phase. The test pitting program will cover roughly eight months with most of the work to be carried out concurrently with the other programs like geological mapping and geochemical sampling. Around 400 samples are expected to be generated by this activity.

The total cost for this program is estimated to be around three hundred thousand pesos (P300,000) with the bulk to be expended for supplies and labor costs.

5.6 Other Activities

5.6.1 Environmental Studies

This covers activities geared towards defining the impact/s of the exploration program on the local environment. This will involve the establishment of base line data for identified critical environmental parameters and the setting up of an appropriate monitoring scheme to detect the changes these undergo during the course of the program. This will also include the conduct of an information and education campaign (IEC) among the local residents and affected people to make them aware of the activities being carried out by the proponent and how these might affect them in the long run.

The environmental studies will be undertaken in consonance with the other exploration activities to allow cost efficiency of operations. A budget of one hundred fifty thousand pesos (P150,000) is programmed for these undertakings.

5.6.2 Technical Feasibility Studies

These will be undertaken to determine the viability of developing the nickel-laterite deposit identified during the exploration program for possible exploitation. These will be contracted out to reputable groups specializing in this particular line of work.

6.0 Total Estimated Exploration Cost (Pesos)

Year 1 : **1,025,000**
Year 2 : **475,000**

7.0 Schedule of Activities (Gantt Chart)

ACTIVITIES	YEAR 1			YEAR 2	
Research Work/Data Compilation	XXX				
Remote Sensing Study	XXX				
Semi-detailed Geological Mapping	XXX				
Semi-detailed Geochem Sampling	XXX				
Auger Drilling	XX		XXX		
Topographic/Cadastral Survey		XX			
Detailed Geological Mapping			XXX	XXX	
Detailed Geochemical Sampling			XXX	XXX	
Test Pitting	XX		XXX	XXX	
Laboratory Analysis	XX	X	XX	XXX	
Reserves/Volume Estimation				XXXX	XXX
Environmental Studies/Sampling	XXX		XXX	XX	
Technical Feasibility Study					XXX

8.0 Map Attachments - Geological or topographic maps of 1:50,000 scale

See Attached Map provided with the Environmental Work Program

9.0 Signature of proponent or person preparing the exploration work program, please specify PRC License and PTR numbers

GUSTAVO T. GLORIA
Geologist
PRC License No. 433
PTR No. 5673343
Issued on January 2, 1997
Dumaguete City

FE MILLARI LIGTAS
President

ENVIRONMENTAL WORK PROGRAM
CLAVER MINERAL DEVELOPMENT CORPORATION

1.0 Name and Address of the Applicant

Claver Mineral Development Corporation
2nd Floor, LPL Mansion, Alfaro St., Salcedo Village
Makati City
Tel. No. : 812 2297
FAX No. : 818 9759

Contact Person : **Ms. Fe M. Ligtas**
Position : President

2.0 Type and Nature of Project

2.1 Project description (objectives, schedule, and cost)

The Project is primarily an exploration project geared towards the characterization and assessment of nickel laterite resources found within the proposed contract area applied for a Mineral Production Sharing Agreement (MPSA) by the company with the Department of Environment and Natural Resources (DENR).

The primary purpose of the Project is to assess the nickel and related deposits found therein and to develop the same for possible future commercial production. To attain the main objective, the company will: (1) pursue a sound and systematic exploration program to characterize and quantify the deposits present in the area; (2) maintain a cost-effective operation to make certain the viability and sustainability of the project; and (3) ensure that an environmentally-friendly or benign mining operation can be put in place that will set a model for similar operations in the area.

The total project cost is estimated to be about P1,500,000.00.

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

The project aims to explore for nickel laterite and related deposits within the area. The main metals being targetted are nickel and cobalt. Chromite and platinum group elements are also of interest.

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

3.1 Location and accessibility

The proposed contract area is situated within Barangay Cagdianao, Municipality of Claver, Province of Surigao del Norte. The area is roughly 90 km. From Surigao City which is the capital of the province. It takes anywhere from two to three hours by car to cover the Claver-Surigao City route. Regular passenger jeepneys and buses ply this route. From Manila and Cebu, Surigao City is serviced daily by Philippine Airlines. Interisland vessels connect this city with other areas in Mindanao and the Visayas.

The boundary of the proposed contract area is defined by the following geographic coordinates:

	POINT	LATITUDE	LONGITUDE
Parcel I	1 - 2	9°28'30".00	125°52'00".00
	2 - 3	9°29'00".00	125°52'00".00
	3 - 4	9°29'31".00	125°53'00".00
	4 - 5	9°29'21".00	125°53'17".00
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	11 - 12	9°29'15".00	125°54'00".00
	12 - 13	9°29'00".00	125°54'00".00
	13 - 14	9°29'00".00	125°53'30".00
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Parcel II	1 - 2	9°29'37".00	125°54'42".50
	2 - 3	9°29'53".00	125°54'36".00
	3 - 4	9°29'37".50	125°54'56".00
	4 - 5	9°29'30".00	125°54'56".00

3.2 Total area coverd by the application

The proposed contract area covers approximately four hundred thirty three and 9798/10,000 hectares.

4.0 Description of the Existing environment where work is Proposed to be Undertaken

4.1 Land environment

4.1.1 Topography/physiography

Straddling the eastern foothills of the Diwata Range and hugging the coast, the area is characterized by a generally moderate to rough topography with prominent ridges and numerous intervening narrow valleys. The highest elevation is almost 400 meters, with most part of the area not lower than 30 meters above sea level. The rather rugged terrain in the southern part of the area passes on to a gentler and more subdued landscape to the north and northeast. The ridges tend to follow a more or less north-south trend possibly reflecting the general structural grain of the region.

The overburden or soil cover varies in thickness from less than a meter to about 2 to 6 meters depending on the gradient of the slope. Erosion is particularly active in the open and steep slopes and is less pronounced in areas of thicker vegetative cover.

4.1.2 Land use/capability

The major portion of the proposed contract area is bare of forest cover and supports only minor trees, shrubs and cogon grass. Thick clumps of vegetation are encountered only the major waterways where plant growth is more conducive. The whole area is practically bare during the summer months and is visibly brown and earthy in color.

Only a very minor part of the area is utilized for residential purpose. Most of the houses and dwelling are found along the highway or major access routes, the coast, main water channels and in areas where the slopes are more favorable.

Agriculture in the area is dominated by coconut and other cash crops. This is particularly true along the coastal part of the area. Less accessible sections especially in the hinterlands are mainly barren or grasslands. The area appears to have a rather limited prospect for long term agricultural use due to the rather low productivity of the soil and the lack of adequate infrastructure support.

4.1.3 Pedology

Soil within the immediate proposed contract area falls under the sub-order *Tropept*, Order *Inceptizol* based on the Bureau of Soils & Water Management (BSWM) classification scheme. Soils falling under the sub-order Tropept are generally characterized as having been formed in an isomesic or warm temperature regime on a moderate to steep slopes in the humid tropics. Most tropepts have either an ochric or umbric epipedon and a cambric horizon. Inceptizols on the other hand is characterized by having one or more horizons in which mineral materials other than carbonates or amorphous silica have been altered or removed but not accumulated to a significant degree. These soils contain a preponderance of weatherable minerals and have an ochric or umbric epipedon over a cambric horizon and sometimes a fragipan.

As mentioned earlier on, the soil in the area has a generally low productive capacity due toits relative immaturity and low organic content. It is therefore incapable of supporting long term agricultural production.

4.2 Water environment

The Hinadladan River and Tandawa Creek make up the most important water systems within the immediate area. These empties into Dahican Bay which straddles the northern and eastern portion of the area. Minor streams and tributaries are mostly intermittent and tend to be dry for most part of the year.

4.2.1 Water quality

There is an abundance of natural springs in the area and these are mostly utilized by the local people as sources of potable water and for other domestic uses. There has been no systematic study on the water quality as of this time. The company plans to undertake this study concurrently with the exploration program to make it cost-effective.

4.2.2 Hydrology

No hydrological data is available at present. A hydrological study will be carried out prior to the detailed drilling program to establish baseline information on such parameters as variations in water level, pH, suspended particles, conductivity, and other factors.

4.3 Climatology/meteorology

Climate in the area falls under Type II of the Modified Coronas Classification of PAGASA. This climate type is characterized by a very pronounced maximum rain period in winter. Maximum rainfall generally occur in December and January, although there is not a single dry month. Areas characterized by this climate type are generally found along or very near the eastern coast, thus are open to the northeast monsoon.

Ambient air quality data is presently lacking in the area. Baseline data for air quality will be set concurrently with the conduct of environmental studies in the area.

4.4 Geological/geomorphological environment

The area and its immediate vicinities are principally underlain by volcanic rocks, limestone, clastic rocks, ultramafic complex, and alluvium. Portions underlain by the ultramafic rocks are found to be mineralized and it is made up chiefly of dunite, pyroxene-peridotite and serpentinites. The principal mineral deposits are the nickel-iron bearing lateritic soil and the nickel-enriched decomposed serpentinite resting over ultramafic rocks. Nickeliferous laterite and nickel-bearing decomposed serpentinite occur as thick mantle blanketing the ultramafic exposures along favorable slopes and flat terrains of high relief.

Despite the wide area underlain by serpentinized ultramafic rocks, the important nickeliferous deposits are found only along the northeastern coastal area of the Mineral Reservation extending from the southern portion of Adlay, Carrascal, Surigao del Sur westward to Urbiztondo, Claver, Surigao del Norte. Small and scattered lateritic tracts are also found capping the more gentle ridges on the southwestward portion of the Reservation particularly in Baoy and Mt. Legazpi Ranges.

The reddish-brown lateritic soil capping the gentle ridges consists mainly of limonite and hematite with subordinate amount of magnetite. Near the surface and a few meters downward, hematite and limonite pellets predominate. These pellets increase in quantity and size towards the surface and sometimes are found cemented together into a limonitic crust.

Large fragments of chromite-magnetite cobbles are also occasionally observed. Undelying the lateritic mantle is the yellowish-green to greenish, soft decomposed serpentinite and serpentinized pyroxene-peridotite. Being the basal portion of the deposits, this section commonly contains a higher grade of nickelthan the overlying lateritic soil.

Mountain peaks within the area seldom reach 400 meters above sea-level. The lateritic areas are characterized by gentle slopes to moderate relief with elevations ranging from 50 to around 200 masl. The non-lateritic areas to the east and south exhibit moderate o steep ridges, gentle rolling terrain and nearly flat surfaces, being underlain mainly by limestone, clastic rocks, and alluvial deposits. Occasional patches of swampy areas are localized within the floodplain and coastal areas. Over-all, the area can be desribed as being on the late stage of geomorphic development.

4.5 Biological environment

4.5.1 Terrestrial plants and animals

i. Plants

Vegetation cover in the area may be classified under two main types: natural vegetation consisting of forest and grass/shrub formations; and cultivated vegetation. Plant species belonging to the natural vegetation category are mostly found in the forest and uplands and consist principally of dipterocaps, bamboo, molave, and various wild shrubs and lesser plants. Trees like acacia, apitong, balete, banana (butuan), lauan, ipil-ipil, and many other commercial tree species typifies this formation. Various species of orchids are also common in the forest land, although these had also been decimated with the loss of the primary forest cover. In the open grasslands on the other hand, mainly cogon and other grass species and shrubs like amorseco, aamo, cadena de amor, etc. Predominate. Portions subjected to reforestation commonly support species like mangium, agoho, gmelina and large-leafed mahogany. Bamboo (buho) are mainly found along drainage channels where they commonly form impenetrable clumps.

Cultivated vegetation includes the plant species that are utilized for food or ornamental purposes. This includes coconut, banana, mango, guava, camotent-cahoy, caballero, bignay, and other fruit and ornamental trees and plants. These species are commonly found in clear-cut and cultivated areas.

Clear-cutting of the forest for commercial utilization of lumber and subsistence farming has led to the rapid loss of the natural or wild

vegetation and the taking over by non-endemic or cultured plants of the ecological niche once occupied by the former. It is very possible that many rare plant species may have been lost during the past few decades or so.

ii. Animals

The area is not home to any form of exotic, rare, or endangered animal species that requires protection. Its proximity to already habitated or developed areas have rendered it susceptible to human incursions and consequently much of its former wildlife had either moved to more remote regions or had been decimated by human activities like hunting, trapping, and forest products gathering. The introduction of domesticated animals like dogs, cats, pigs, etc. Has placed undue pressure on the local fauna. The ecological niche occupied by the native fauna is now almost totally taken over by the introduced animal species especially along the fringes of the forest lands and logged-over areas. Animals like wild boar, monkeys, deer, monitor lizard (bayawak) and bayakan (wild bat) are now rarely encountered particularly in the more accessible and habitated sites.

Invertebrates, such as several species of insects, arachnids, mollusks, crustaceans, and chilopods have suffered a similar fate. Human incursions and clear-cutting of the forest have seriously damaged or destroyed their habitats leading to their migration or retreat to less affected portions of the hinterlands.

4.5.2 Aquatic plants and animals

In the rivers and swamps, the main fish species are mosquito fish, guramy, tilapia, catfish and mudfish. Mollusks like telescope shell, planorbids and moon shells are common. Freshwater crabs, shrimps and crayfish are also fairly well represented. Natural plant species found in the wetlands include talahib, byuro, kangkong, cattails and other water plants. Little is known of the microbiological population present in the area. The environmental studies to be carried out in the area will include this aspect of ecological systems.

4.6 Socioeconomic environment

Farming and fishing are the main means of livelihood in the area. A minor portion of the local populace are hunters, trappers, wood gatherers or kaingeros (slash and burn farmers), dependent on the forest for subsistence. A small number are entrepreneurs engaged in retailing, trading or buy and sell business. An even smaller proportion are

subsistence miners who are commonly migrants from other parts of the province or region trying their luck on chromite "camote" mining.

Except for Taganito Mining Corporation located some 25 kilometers from the proposed contract area, there are no major industrial or commercial establishments that employ the local populace. The bigger establishments are found in Claver town proper although smaller ones are also found in Cagdianao and nearby barangays.

Lifestyle is simple and typical of rural areas. Traditional social gatherings or events such as fiestas, birthdays or marriages are unfailingly observed. Being mostly Christians, church celebrations are faithfully observed with the usual trimmings and candor.

Health and safety conditions may be described as tolerable although there is a general lack of facilities for health and medical care. One has to travel to the town proper or Surigao City to avail of medical treatment or hospitalization. Most of the local people rely on folk or herbal medicine to get by.

Tap water, electricity and telephone service are not available in the area. It is only in Claver and other big towns that these services or amenities can be availed of. There are no major recreational facility in the area, although this does not deter the local populace especially the youth from utilizing whatever space available for games like basketball or volleyball. Gambling and drinking of native wines or liquor are common pastimes among the populace.

The National Highway connecting Surigao City i he north to Tandag, Surigao del Sur in the south passes through the westernmost portion of the area. The road is for the most part serviceable but poorly maintained and difficult to traverse during the rainy season. Bridges are built across the major rivers and streams but these are generally of limited gauge and capacity. From the main highway minor roads that are commonly impassable during the rainy season connect the different barangays to the poblacion.

5.0 Description of Exploration Work

5.1 Description of exploration method(s) and equipment to be used

The main exploration program will principally involve the following phases and activities:

1. Pre-Field Survey Stage
    a. Research Work
    b. Literature Survey
    c. Data Collation and Compilation
    d. Remote Sensing Studies
2. Semi-Detailed Survey Stage
    a. Geologic Mapping
    b. Geochemical Soil Sampling
    c. Auger Drilling
    d. Environmental Studies
3. Detailed Survey Stage
    a. Geologic Mapping
    b. Geochemical Grid Soil Sampling
    c. Auger Drilling
4. Test Pitting
5. Volume/Ore Reserve Calculations
6. Technical Feasibility Studies

5.1.1 Geological mapping

Geological mapping in the area will comprise semi-detailed to detailed work covering the most prospective portions of the area. The mapping program will involve principally traverses along streams, road cuts and other exposures for the semi-detailed program and compass-and-tape mapping for the detailed program. The focus of the mapping will be the delineation of the nickel laterite deposit and the characterization in terms of physical and chemical parameters. Geological maps of a scale of 1: 10,000 to 1: 5,000 for the semi-detailed aspect and 1:1,000 to 1: 500 for the detailed program will be the main output for the geological mapping phase. The main equipment and tools to be utilized are brunton compasses, clinometers, sample pick, hand lens, meter tape, polyethylene sample bags, cloth bags, trowel, and other basic field supplies. No heavy equipment will be used during the geological mapping stage of the exploration program.

5.1.2 Geophysical methods

There are no plans to make use of geophysical methods at this point in time. The company however may consider this option once initial exploration data are already available.

5.1.3 Geochemical sampling

Geochemical sampling in the area will involve the taking of soil and rock samples on the surface horizon, rock exposures and test pits. Surface soil samples will be taken using either a trowel, pick and shovel, or an auger capable of penetrating down to around 3 to 5 meters depth. In the test pits, channel samples will be taken along the walls and floor using a channel sampler or plain trowel. During the semi-detailed survey stage base of slopes and ridge and spurs soil sampling will be conducted. A more systematic grid sampling procedures will be conducted during the detailed survey phase and will cover only the most prominent anomalies detected during the previous sampling program.

5.1.4 Others

Remote Sensing Studies - These will involve principally the interpretation of airphotographs, radar and/or satellite images to delineate or identify geologic or structural features on a regional scale. Geological and lineament maps of a scale of 1:50,000 to 1:25,000 are the main output for this activity.

Topographic/Cadastral Survey - Topographic mapping of the area will be undertaken to establish the present topographic configuration and to provide accurate ground control points for mapping and test pitting, especially during the detailed stage of the program. This will also be useful in locating future developmental works. The topographic map to be produced will be on a scale of 1:200 with a 5-meter contour intervals and will cover mainly the most prospective portions of the contract area. Basic surveying equipment and paraphernalia like meter tape, survey rods, transit and alidade will be utilized during this phase.

Test Pitting - This is undertaken to obtain geological and other pertinent data on the subsurface and gain a better understanding of the characteristics of the laterite deposit. This is also crucial in arriving at a reliable estimate of the volume or reserves of the deposit. The test pits will be about one to one-and-a-half square meters in area and will go down to the depth of bedrock or saprolite. Depending on the physiography of the laterite deposit, this will be anywhere from 3 to 6 meters deep. The excavation will be undertaken using tools like shovels, picks, crow bars, metal buckets and pulleys.

Auger Drilling - This will be done using either a common hand auger or a mechanized drill to penetrate deeper levels. While an ordinary trowel may suffice for soil sampling during the initial stage of geochemical survey, the auger is necessary during the conduct of the grid soil sampling program. This will allow the sampling of the deeper horizons of the laterite deposit

in an efficient and speedy manner. Although heavier and bulkier than the ordinary hand auger, the mechanized auger can easily be transported and installed by three to four persons in the sampling sites.

5.2 Preliminary processing of samples

Soil and rock/ore samples taken during the field survey will be initially processed in the field. If weather permits, air drying of the samples will be carried out prior to the transport to the analytical laboratory/ies. This will involve mainly the exposure of the samples on open air for one or two days to reduce if not totally eliminate moisture. Once these are dry enough, sieving across the 80 mesh size fraction will be undertaken to remove coarse rock fragments and other extraneous materials. The sieved fractions will then be packed into plastic sample bags prior to transport to the analytical laboratory/ies. Similarly, the dried rock and ore samples will be transported as is to the laboratory for chemical, petrographic and XRD analysis.

5.4 Estimated exploration costs

Activities	Cost (thousand Pesos)
a) Research/Remote Sensing Studies	80
b) Topographic/Cadastral Survey	120
c) Geological/Geochemical Surveys	350
e) Auger Drilling	200
d) Test Pitting	350
f) Environmental Studies	150
g) Laboratory Analysis	200
TOTAL =	1,500,000 pesos

6.0 Identification of Potential Environmental Effects

6.1 On land

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

As the bulk of the exploration activiies will center mainly within the proposed contract area, minimal effect is anticipated on the surrounding or contiguous areas. The only activity to be undertaken in the surrounding areas will be the restoration or upgrading of the access route/s from the main highway or Barangay site leading to the target area. This will

involve principally the clearing of any obstruction along the route and the stabilization of the road surface. The work will mainly be done manually or if the need arises a bulldozer may be utilized. Materials cleared from the road shall be dispersed on the adjacent areas to minimize stockpiling and accumulation of unwanted debris or waste. By doing so, the chances of the material being washed down into drainage channelways will be lessened to some degree as the material is easier stabilize when spread out over a larger area than when it is stockpiled into heaps. Grasses and shrubs easily grow over the thin cover of soil and rock debris and prevent this from being washed away by surface run-off.

Maintenance work on the road will be carried out periodically to ensure its viability during the duration of the project. This is also intended to keep whatever adverse effect on the surrounding areas in check.

Construction work off the property will be limited to the setting up of a temporary camp should a need to do so arises. Otherwise the proponent will utilize whatever space or facility available in Barangay Cagdianao or nearby sites for this need. In either case, minimal disturbance or effect will arise.

6.1.2 Surface disturbance on the mineral property subject of exploration such as, but not limited to, the following:

i. Changes in land forms due to excavations (settling ponds, road access construction, no. of drilling sites, no. of trenches, campsite, test pits)

Excavation of test pits within the area will give rise to a temporary albeit not so drastic change in the land form. The effect is temporary as most of these test pits will be restored as soon as the exploration work is completed. Temporary camp site/s will cover only small areas and as such will only require clearing of small patches or sections. Recovery of the site/s in terms of regrowth of vegetative cover is expected soon after the abandonment of the same. The field party will try as much as possible to utilize existing camps or abandoned dwellings of forest dwellers as their field camps to reduce the need of clearing new sites for this purpose. Mechanized auger drilling will neither require substantial clearing of vegetative cover nor ground excavation. The rig can easily be trasported manually by hired laborers and will not require the putting up of access roads or routes.

ii. Changes in rate of erosion

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ii. Changes in rate of erosion

An increase in the rate of soil erosion might arise over areas cleared of effective cover, such as test pits, field camps or access routes. The magnitude of the change will vary greatly depending on the topography and slope characteristics of the site concerned. In the case of the test pits, this will depend on the number and disposition of the excavations. As the total number and disposition of the test pits is yet to be determined at this point in time (this will depend on the results of the initial exploration program), the exact magnitude of this change still cannot be placed.

6.2 On hydrology and water quality

6.2.1 Potential generation of acid mine drainage (sources, quantitative and qualitative descriptions)

The exploration program poses minimal threat in terms of generation of acid mine drainage. The nickel-laterite deposit being explored for and the rock types underlying the area contain very little sulfide minerals which are the principal acid generators. With the rather low sulfide content, whatever acid solution generated can easily be dissipated and neutralized by alkalic or near-neutral waters. There is minimal danger of acids being generated and released into the surface environment even when the underlying units are exposed during test pitting.

6.2.2 Siltation and pollution of surface waters (surface run-off, erosion and dust)

Siltation of the surface waters might arise along sections subjected to excavation and ground clearing. This is particularly true for areas of very steep slopes and scant vegetative cover. Excavated materials from the test pits or auger holes can wash down into drainage channelways especially during periods of heavy rain and cause siltation along the section of the stream. During the dry months, the stockpiled material from the test pits can give rise to a lot of dust and airborne fine particles which can be a nuisance to local inhabitants. The same problem can be encountered in portions of the area traversed by the road or access routes, particularly along habitated sections.

6.2.3 Changes in hydrology (water availability and quality and drainage patterns due to the construction of water storage areas, and other related structures)

The exploration program to be implemented is not expected to radically alter water availability within the area. The activities to be carried out will

not require the use of substantial amount of water nor will these be carried out along major drainage channelways or water sources. A temporary deterioration in water quality is expected over sections of the streams affected by siltation. The main effect will be an increase in turbidity and possible reduction of oxygen content. This in turn can cause the loss of some faunal and floral assemblabes in these portions of the streams for the the duration of the program. These impacts however are temporary in nature as recovery is expected once restoration work on the excavations are carried out.

6.3 On the ecology (effects on ecosystem of site preparation, alteration of land form and natural drainage, and noise, etc.)

By and large the effect on the ecology of the area is not expected to be very serious since most of the impacts of the activities to be carried out will be temporary. Restoration works, like the replacement of the excavated materials on the test pits and putting up of siltation ponds or dams are expected to promote the recovery of the area in the earliest possible time. Long term or serious lasting effects are not expected to occur due to the implementation of the exploration program.

6.4 On socioeconomic effects (to include among others impact on indigenous/ethnic communities, where applicable - culture, tradition and lifestyle)

The conduct of the exploration program within the area is also not expected to have any major socioeconomic consequences. Employment opportunities for the local inhabitants will be created during the conduct of the activities and this in turn will mean an inflow of income into the system. Considering that most of the activities to be carried out are of short duration, the general impact on the peoples' income will not be that impressive. It will however still be considered sizable considering the general lack of employment opportunities in the area. People residing in the forest and those dependent upon the forest for their livelihood will not be severely affected by the exploration activities. The excavation of test pits in some portions of the area may render some inconvenience to the forest dwellers but again this will be temporary and will be remedied as soon as the test pits are covered up.

The exploration project is not anticipated to result in any changes in the tradition, culture and lifestyle of th elocal people.

7.0 Environmental Management Measures Including Total Cost

During the implementation of the exploration program, a number of measures will be adopted to minimze if not mitigate the adverse effects the program might have on the environment. It should be noted however that exploration programs are by and large environmentally benign operations that give rise to generally minimal impact on the environment and the people living within the area subject to exploration.

The measures to be instigated will iclude the following:

a) Putting up of settling ponds, sediment traps or impoundments along some of the drainage channelways to minimize siltation. This will be particularly useful in reducing the sediment load of streams draining areas of excavation, road rehabilitation or construction. The stockpile of loose soil and rock materials from excavations will be provided with the most efficient drainage ways posiible to retard if not totally eliminate the introduction of massive amounts of sediments into the water systems. This can be done by digging small diversionary canals around the stockpiles that will channel surface run-off away from these or by setting up barriers like wooden planks or plastic sheets around the stockpiles to keep the material in place.

b) Stabilization of slopes to reduce erosion. This will be carried out in areas of unstable slopes to prevent landslides that might cut-off the access routes or otherwise jeopardize the work areas. This could be done by rip-rapping or terracing the the exposed and unstable portions of the slope. Reduction of steep slopes could also be resorted to especially along critical roadcuts or in areas immediately upslope of the excavation. Planting of cover folliage along slopes with barren vegetative cover will also be done to stabilize the surface. This can easily be done by using fast-growing shrubs and other plants as cover.

c) Minimize the cutting of trees and removal of vegetative cover. The cutting of trees and removal of cover folliage will be reduced to the barest minimum possible under the program. Whenever a need arises to cut trees for local use or to remove obstructions, only the less exotic or inferior species will be utilized or removed. Survey and gridlines shall be set up in such a way as to go around or skip areas of thick vegetative cover or large trees. Reforestation activities presently being undertaken within the area will be supported and as much as possible will be spared from any major activity. Planting of cover foliage will be routinely undertaken especially in critical areas. Every effort wil be exerted to prevent bushfires and discourage slahs-and-burn practices that might render some areas totally bare.

d) Restoration of excavated areas. The test pits excavated for subsurface sampling and studies will be covered-up or back-filled once these had served their purpose. Efforts will be exerted to ensure that these will not pose any danger to animals or people straying into the area. The diggings will be fenced-off temporarily if these will retained for future follow-up studies or resampling. Once back-filled, replanting of cover folliage will be undertaken to stabilize the surface. Maximum care will be exercised to ensure that the original soil stratification will be restored during back-filling. This can be done by segregating the top soil from the underlying material and then returning this portion to its original position during the restoration work.

e) Solid and liquid wastes generated during the conduct of the exploration program shall be disposed of properly to prevent posible contamination of the environment. Organic solid wastes like paper products, wood chips, food residues, etc. will be buried in appropriate sites. Other solid waste like plastic products, glasswares and metallic material will either be burned or taken out of the area for final disposal. Liquid wastes like used oils, excess fuel, kerosene and similar products will also be burned to reduce contamination of surface and groundwaters. As only minimal amounts of these are expected to be generated during the course of the exploration program, major contamination arising from sepages or leaks of these sources is not foreseen. The proponent shall see to it that proper storage of these materials is practiced to reduce chances of accidental spills or leakages. It shall also see to it that only minimal amount of these materials are stored in any one place at any one time for easier handling and control. Aside from the small amount of nitric acid and potassium chromate that will be utilized during water sampling for environmental study, no toxic chemicals or reagents will be brought into the area during the field survey.

f) All vehicle and equipment to be utilized during the program shall be properly maintained and serviced to keep these in good running condition. This will effectively reduce the noise and emission of noxious gases during their operation. Watering of the unpaved roads or access routes, especially along habitated sections will also be done to keep dusts emanations under control. This will be particularly helpful during the dry months.

g) The proponent shall limit to the barest minimum possible the number of workers brought in from other areas so as not to cause problems with the local residents. Only technical personnel and support skilled workers will be brought in to carry out the actual field activities. All pick-up or unskilled labor will be sourced locally. The conduct of the the program is

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not expected to cause a significant migration of people from other areas or regions.

h) The company shall encourage environmental awareness and concern among the local populace by giving them a first hand experience on how an exploration program like the one to be carried out can be accomplished without causing any adverse effect on the environment. Since local laborers will be hired during the project, they will have an appreciation of what is actually being done with regards to environmental protection. They will then be the ones to inform other local people of the non-destructive nature of the program being implemented.

i) The proponent will maintain a harmonious relationship with the local people by assisting them in every way possible and respecting their rights, particularly with regards to the access into and use of the area. Any damage or loss inflicted on plants cultivated or animals raised by the people within the project area as a consequence of the exploration activities shall be properly recompensed either in cash or in form by the company. Regular dialogues will be conducted with the local officials and residence to appraised them of the activities being carried out by the proponent in the area. These will serve as a chance for both sides to clarify matters or problems being encountered or arising from the activities of the company.

j) The company upon the termination of the exploration program shall see to it that all remedial and restoration works had been put in place prior to pulling out from the area. It shall see to it that all materials and equipment brought in had been disposed of properly or withdrawn from the site; and that areas that had been cleared of vegetation are already revegetated. Particular attention shall be placed on ensuring that all excavations (test pits) had been properly back-filled and the surface stabilized by replanting of cover.

The measures to be implemented will serve the dual purpose of ensuring that the program is self-sustaining and that it is environmentally sound. By carrying out these measures, the various activities could be carried out without delays arising from problems associated with natural disasters like floods or mass movements or from complaints by the local populace affected by the activities.

Exploration work programs carried out by other companies in and immediately around the proposed contract area during the past decades or so had already shown that these had had minimal impact as far as the environment is concerned. The measures that the company is proposing to undertake or put in place during the program will further ensure that the negative effect on the environment will be as minimal as possible.

It is estimated that the cost of putting up these environmental measures and carrying out the environmental studies (baseline data setting and monitoring) will amount to about ten percent of the exploration costs or roughly one hundred fifty thousand (150,000) pesos spread over the two-year period of the program.

8.0 Name and Signature of Applicant and Person preparing the EWP

GUSTAVO T. GLORIA
Geologist
PRC License No. 433
PTR No. 5673343
Issued on January 2, 1997
Dumaguete City

FE MILLARI LIGTAS
President

9.0 Plan(s) of the Proposed Operations showing location of area(s) subject of exploration/project, access to property, location of works and roads, water courses, working areas, proposed grid layouts, camps and other surface facilities

The exact disposition of the grid layouts or the portions of the area where the detailed survey will be carried out cannot be ascertained at this point as these can only be determined once the results of the initial exploration activities had been interpreted and clarified. Location of fly camps within the area will be a function of terrain and survey objectives.

See attached map for other information