Project Description for Scoping Proposed Banaybanay Nickel Laterite Mining Project

For: Zetosa Mineral Resources Corporation

By: Mallonga Consulting Services, Inc.

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Proposed Banaybanay Nickel Laterite Mining Project Zetosa Mineral Resources Corporation

1. Basic Project Information

Project Information	
Name of Project	Proposed Banaybanay Nickel Laterite Mining Project
Location	Barangays Causwagan, Maputi, and Mahayag Municipality of Banaybanay Province of Davao Oriental
Background and Nature of Project	Resource Extractive Industry (Mining Project)
Project Area Size	2,291.34 hectares approved area comprising Mining Phases 1, 2, & 3 resulting to a total disturbed area of 980 hectares, more or less
Proponent Profile	
Name of Proponent	Zetosa Mineral Resources Corporation
Address	Unit 231 Nova Tierra Square Building, Lanang, Davao City
Contact Person and Details of Proponent's Authorized Rep.	Mr. Maximo O. Sara III President Contact No.: 09173071018 Email address: <u>max.sara@gmail.com</u>
Preparer Profile	
Name of Preparer	Mallonga Consulting Services Inc.
Address	039 T. Calo Ext., Butuan City
Contact Person and Details of Proponent's Authorized Rep.	Dr. Rodrigo B. Mallonga President Contact No.: 09190077384 Email address: mcs_inc2014@yahoo.com.ph

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2. Project Description

Project Location	The Banaybanay Nickel Laterite Mining Project is covered by EP-000003-2020-XI containing a total area of 2,291.34 hectares. It is situated in Barangays Causwagan, Mahayag, and Maputi, all in the Municipality of Banaybanay, Province of Davao Oriental. The EP is bounded by geographic coordinates: 7° 01' 00" to 7° 03' 00" North Latitude and 125° 59' 30" to 126° 06' 00" East Longitude and can be reached via land travel from Davao-Tagum-Davao Oriental National Highway for about 2 to 2.5 hours.				
	The project site is within the Pujada Block which is south of the Agusan-Davao Basin and Mindanao Pacific Cordillera Stratigraphic Groups that is characterized in portions by ophiolite and ultramafic rocks which host nickel laterite and podiform chromite deposits.				
	Its geographical coor	dinates are:			
	CORNER	LATITUDE	LONGITUDE		
	1	7° 01' 00"	125° 59' 30"		
	2	7° 02' 00"	125° 59' 30"		
	3	7° 02' 00"	125° 59' 00"		
	4	7° 03' 00"	125° 59' 00"		
	5	7° 03' 00"	126° 01' 30"		
	6	7° 02' 30"	126° 01' 30"		
	7	7° 02' 30"	126° 01' 00"		
	8	7° 01' 30"	126° 01' 00"		
	9	7° 01' 30"	126° 03' 00"		
	10	7° 03' 00"	126° 03' 00"		
	11	7° 03' 00"	126° 04' 00"		
	12	7° 01' 00"	126° 04' 00"		
Tenement History	On March 08, 1996, Baler Consolidated Mines, Inc. filed an Exploration Permit Application denominated as EXPA No. 000002-XI, originally covering an applied area of 9,720 hectares located within the Municipal boundaries of Banaybanay and Lupon, Province of Davao Oriental and Pantukan, Comval Province.				
	During the time of filing, there are portions considered close to mining application such as existing Declaration of Location (DOL) under P.D. 463. This resulted in the reduction of the applied area to only four (4) blocks or three hundred twenty- four (324) hectares as originally open.				
	On September 15, 1997, the deadline was set for the filing of Mineral Agreement applications by holders of valid and existing mining claims and Lease/Quarry applications and for				

	other purposes under DMO Nos. 97-07. All Declaration of Locations (DOL) under P.D. 463 who failed to convert to Mineral Agreement application will be automatically abandoned. Considering the new clearing, the area sought by Baler is Two Thousand Three Hundred Eight-five & 0977/10000 (2,385.0977) hectares located at Barangays Maputi, Panikian, Puntalinao, Causwagan and Mahayahay, all in the Municipality of Banaybanay, Province of Davao Oriental.
	On June 05, 2007, an assignment of Exploration Permit Application No. 000002-XI was entered into by and between Baler Consolidated Mines, Inc. and Zetosa Mineral Resources Corporation that was registered with the Mines and Geosciences Bureau on June 20, 2007.
	On July 9, 2007, Zetosa Mineral Resources Corporation filed an amendment fee and paid the amount of Php 40,940.00 equivalent to 2,045.67 hectares as additional to the originally open four (4) blocks of EXPA No. 000002-XI of Baler.
	The area covered by this application are portions within Community-Based Forest Management Agreement of Maputi-Piso Cabangkalan Forest Resources Association, Inc., Integrated Forest Management Agreement of Dr. Louella A. Guinez and entirely outside the National Integrated Protected Areas System (NIPAS).
	The clearance to issue the Exploration Permit was granted by the MGB Central Office on January 22, 2020 and finally the approval was granted on March 9, 2020.
Project Rationale	The global demand for metallic resource particularly, nickel, has risen since the past decades. This is due to increasing industrialization of many parts of the world. Nickel is used primarily as alloys to add toughness, strength, rust resistance with various other electrical, magnetic and heat resistant properties. Nickel is an important component to produce stainless steel which is used in construction materials, electronic devices, mechanical parts of machines, household products, batteries, coins, scientific and surgical equipment. Laterite ores are major source of nickel which accounts to 70% of the world's nickel resources (Dalvi, 2004).
	The Philippines is one to the key supplier of the nickel ores globally with 30 operating mines across the country located in Palawan, Agusan, Surigao, Dinagat Island, Mati, Zambales and Isabela (MGB, 2020). The development of mining

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industry in the Philippines is an engine for growth in local and regional economy providing employment opportunities, infrastructure development, industrialization, and rural development creating self-sustain community for inclusive growth. The mining industry provide tax to both local and national governments to support the growth and development of the nation thru a responsible and sustainable mining.

The Municipality of Banaybanay is a second-class municipality with population of 41,117 (PSA, 2015) and dominantly an agricultural town with rice as major product. Poverty incident accounts to 28.72% of the local population (PSA, 2015).

The municipality hosts nickel laterite deposits that could provide additional economic opportunity, job generation, skills upliftment for local community, livelihood, health and medical programs, payment of taxes and added revenues, and development projects for the host barangays and local government unit. Expanding the economic opportunities is critical in laying down the foundation of inclusive growth, economic competitiveness, and resilient local community (NEDA, PDP 2017-2022).

Though the project is still in its exploration stage, the Proponent has established significant volume of nickel ore resource and reserves that already warrants the conduct of a feasibility study for the submission of the Declaration of Mining Project Feasibility (DMPF) to the Mines and Geosciences Bureau of the DENR. It is on this context that a parallel assessment of the environment where the project is situated would be conducted in order to guide the Proponent before construction and development stages of the project will take place. The Environmental Impact Assessment (EIA) study of the project will provide control measures that will lessen environmental impacts and social disturbances during exploration, development, operation, and rehabilitation stages of the project.

In the mining of the nickel deposit, optimization and sustainability will be the key guiding principles to be adopted by the Proponent. This ensures that whatever gains that can be derived from the project are shared appropriately by the Proponent with stakeholders as well as the host community. The Proponent, also, commits to comply with all relevant environmental laws, regulations and social requirements set

	by the Mines and Geosciences Bureau (MGB) and the Environmental Management Bureau (EMB) of the Department of Environment and Natural Resources as well as from the Provincial and Local Government Units and in securing an Environmental Compliance Certificate (ECC) for the proposed nickel laterite mining project through this EIS and ECC application.
	As part of their corporate social responsibilityy, the Proponent further commits to contribute on the development of the host community by giving employment preferences to local residents, prompt payment of taxes to concerned LGUs and BIR, the implementation of Social Development and Management Program (SDMP), among others. The SDMP will contain programs and activities sourced from each of the barangay's aspirations for its own growth and development. The SDMP also will incorporate mechanisms on program implementation thru the Multipartite Monitoring Team (MMT), in compliance to ECC conditions.
Project	Mine Development Plan
Development Plan, Process/Technology Options and Project Components	The proposed nickel laterite mining project will be a direct shipping operation (DSO) and will not require mineral processing. Mine development will be done into Mining Phases 1, 2, & 3, resulting to a total estimated disturbed area of 980 hectares out of the 2,291.34 hectares tenement. Phase 1 mining site is on a 70-hectare mine area where roads and facilities can easily be installed. Succeeding developments will be in Phase 2, directly north of Phase 1 mining site, and then in the much larger Phase 3 mining area, some 4-km east of Phase 1. Phases 1 and 2 areas covered portions of Barangays Maputi and Causwagan while Phase 3 mining area is situated in Barangay Mahayag, all in the municipality of Banaybanay, Province of Davao Oriental.
	The primary work flow of the mining operations, after development permits are granted, will be clearing of vegetations, grubbing and construction of access roads and haul roads; bench forming; ore extraction and loading; the pre-pile stockpiling for ore classification; ore hauling to port and another stockpiling prior barging, ship siding and finally the loading of ores to the mother vessel for its shipment. The on-pit or pre-pile stockpiling will allow the categorizing of the nickel laterite ore into low, medium and high-grade ores. The commonly high grade saprolite nickel ores, on the other hand, will have oversized fragments that need re-sizing prior to

stockpiling. All these different categories on Nickel laterite and saprolite ores will be re-classified, blended and dried to achieve the desired Nickel grade and moisture content for the required shipment.

After each mine development, the disturbed areas shall be progressively rehabilitated in accordance to the submitted and approved Environmental Protection and Enhancement Program (EPEP) and the Final Mine Rehabilitation Development Plan (FMRDP). The objective is to rehabilitate the land closest to its pre-mining conditions and at the same time use of land in consultation with surface owners and stakeholders or the CADT holders for an alternative and higher economic return.

Project Alternative

<u>Site Alternatives</u>. Mining is constrained by several factors, namely: the fixed location of the orebody, site topography, available technology, cost of operations, limited waste storage alternatives, and availability of usable areas. The extraction of the nickel ore body, after been proved and defined from exploration works, would be extracted within the confines of the approved mining tenement of the Proponent. There are no site alternatives since the area to be mined is limited by the economic cut-off grade or the marketability of the ore. The location of the project site was delineated based on initial assessment of the constraints in the mine area, mining method, and cost as well as potential environmental and social conditions and impacts.

<u>Mining Technology Alternatives</u>. The mining method is dependent on the type and orientation of the deposit. The Nickel laterite mining project in Banaybanay will be mined by Contour Mining method.

In the event of market improvement, the Proponent may opt for a process change such as the introduction of a mineral processing plant that can upgrade the nickel ore quality. The decision, however, is more of economic in nature since this requires huge capital investments and also should satisfy other factors for it to sustain longer period of operation.

<u>No Project Alternative</u>. The 'no project' option must be weighed against the economic benefits that the project would bring to the host barangays and to the national and regional economies. Without this project, the land remains

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> unproductive and continue to produce less economic returns as compared in having a mining project. The land and hills covered by the tenement, are all overlain with ultramafic rocks that are generally not suited to grow crops and coconuts due to high iron minerals in the surface. Only in flat lands and near shore where people continue to reside or inhabit is where soils have enough nutrients for enable agricultural crops to grow and thrive. The economic benefits that would be derived from the project are as follows: 1. Potential to create more than 1,000 jobs for the local community; 2. Royalties and taxes paid locally and shared by provincial, municipal and barangay communities; 3. Social that development programs will benefit the host communities: and 4. Environmental protection and management programs that will be able to enhance the host communities' environmental programs. If the project does not proceed, the above benefits and the corresponding multiplier effects and general improvement in the conditions of the host communities will not be realized. These being said, this standard of living will remain if the project is not implemented as there are no other industry can provide the same magnitude of economic impact for the project area. The project is expected to provide direct and indirect livelihood opportunities for stakeholders within the host barangay.

Project Components

Before mine operations commence, the Proponent shall see to it that the following mine infrastructures and ancillary facilities are first constructed to ensure efficient and safe operation. Among these include:

- Development of Mining Phase 1, 2 and 3 (as shown in map)
- Stockpile pads
- Waste dump areas
- Siltation ponds, Interceptor canals and drainage lines (as shown in map)
- Haul / Access roads
- Work camps
- Field and Administration Office
- Motorpool and Equipment Depot

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3. Project Phases, Key Environmental, Wastes, Issues and Measures

Key Environmental	Description	Waste	Issues	Measures		
Aspect						
Legal Requirements	This covers the acquisition of permits, endorsement, and environmental compliance certificate.	No waste generated in the activity.	None	The EIA will be undertaken in this stage		
Exploration Stage						
Land Resource	Road development	Soil, rock, and faunal fragments/ debris Dust emissions Oil and grease from the machineries	 Air and Noise Pollution Faunal (trees, bushes, and grasses) that will be affected in road development. Dust from road construction Land and water pollution 	 Adherence with Clean Air and Water Act Occupational Health and Safety Practice Determine the appropriate road network considering minimal damage to the environment. Dust suppression activities to be conducted during construction and maintenance of the road network. Use of PPE No maintenance/repair of machineries in the field site. Placement of non- porous mating in the soil to prevent soil contamination 		
	Drilling and trench works for exploration	Soil, rock and faunal fragments/ debris Additives from drilling, water used in drilling, Slums Oil and grease from the machineries Dust emissions	 Sumps Noise pollution from drilling works Land and water pollution Dust from drilling works 	 Slump management [] Use of PPE Occupational Health and Safety Placement of non- porous mating in soil to prevent soil contamination when refuelling of drilling equipment No maintenance/repair of machineries in field site 		

Key Environmental Aspect	Description	Waste	Issues	Measures	
Land Resource	Nickel laterite pits	Soil and rock fragments	 Hazard in deep test pits Surface water filling in the trenches after rainfall 	 Hazard management with installation of signages Avoid ponding of water in test pits 	
	Stockpiles and waste dumps	Soil and rock fragments	 Wind and surface water erosion Siltation of surface water from surface runoff Land and water pollution 	 Dust suppression activities Use of PPE in the site Occupational Health and Safety Drainage analysis, installation of drainage system and siltation pond Appropriate environmental controls in stockpiles and waste dumps 	
Water Resource	Utilization of water resource for the project.	Construction materials for water source development (springs, drilled wells or surface water)	 Over extraction surface water or groundwater in drilled wells that can affect domestic water source used by the community Improper waste disposal 	 Surface water and groundwater resource and sustainability assessments on the project site and immediate vicinity Solid waste management in the construction of the water system 	
	Siltation of the rivers	Surface water contamination (siltation)	 Siltation in river channels Water Pollution Marine environment siltation 	 Surface runoff, erosion, and drainage analysis to determine the appropriate design and location of siltation ponds Installation of drainage system and siltation ponds Continuous monitoring of siltation ponds and drainage system to prevent breaching 	
Air and Noise	Development works in road, drilling, test pits and field and administration buildings, motorpool, and supply depot	Construction materials that generate dust	☐ Air and Noise pollution in construction works	 Occupational Health and Safety Use of PPE Adherence to Clean Air Act 	

Key Environmental	Description	Waste	Issues	Measures	
Conservation Values	Important fauna and flora in terrestrial (land and surface water) and marine environment	No waste generated in the activity.	Effect of the project in fauna and flora and water and marine resource	 Flora and fauna assessment Surface water and marine environment assessment Determination of baseline levels for land, surface water and marine water species and organism 	
Construction of Facilities	Construction works in field and administration buildings, motorpool, work camp, supply depot	Construction materials	Improper waste disposal	□ Solid waste management	
Social Aspect	Community participation and engagement	Logistic materials and resources used in meetings	 Lack of information of the project and its bounds Miscommunicati on 	 Information Education Campaign of the relevant stakeholders Community/stake holders consultation Community participation and engagement in the project Solid waste management 	
Rehabilitation	Appropriate methods and strategies for rehabilitation (eg. methods, type of vegetation)		Lack of Information and miscommunicatio n	 Progressive rehabilitation of the site and reforestation activities Conduct on technical study in rehabilitation methods and strategies Community/stake holder consultation and participation in rehabilitation 	

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4. Project Cost

The total estimated investment will amount to Php 678,020,000.00 (USD 13,560,400.00, at an exchange rate of 50.00 Philippine pesos to a US dollar). The amount will cover the expenses for acquisition of surface mining equipment, surface preparation such as mine access road construction, development / pre-mining preparation of the mineral deposit, construction of office buildings, staff quarters, bunkhouses, laboratory buildings and other support infrastructures, facilities and utilities and others. The schedule and volume of investment for the project will consider the development, mining, and shipping of direct shipping ore grade laterite with nickel content of 1.4% nickel and higher. The production output will be sold to Chinese and Japanese buyers directly without undergoing processing. The schedule and volume of investment for the project will be through direct shipment mining operation of nickel laterite ore. The production will be at an average of 2,000,000 WMT per year.

5. Project Timeline

ACTIVITIES	2020	2021	2022	2023	2024	2025	2026	2027- 2041*
Feasibility Study								
Mine EIA								
Further Technical Development								
Final Mine Approvals								
Construction / Commissioning								
Operations								>
Progressive Rehabilitation								



Annex A. Location Map of the Project Site



Annex B. Exploration Permit Boundary and Topographic Map



Annex C. Facility Layout of the Project Site



Annex D. Aerial Photos of the Project Site

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