

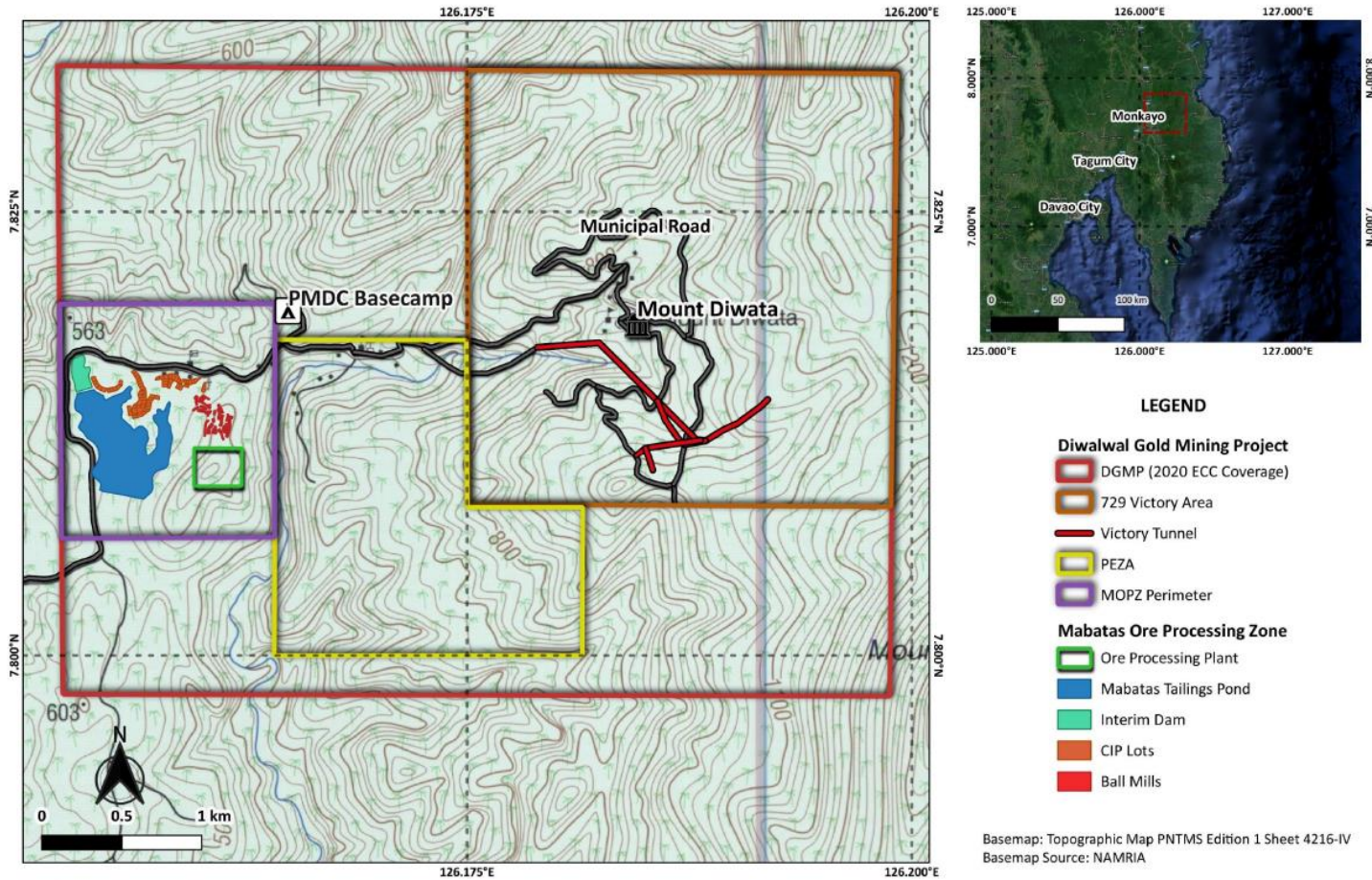
EXECUTIVE SUMMARY FOR THE PUBLIC (ESP – English)

Project Fact Sheet

Name of Project	Diwalwal Gold Mining Project
Project Location	Barangay Upper Ulip and Mt. Diwata, Monkayo, Davao de Oro
Nature of the Project	Mining Category A: Environmentally Critical Project
Project Size	2,000 metric tons per day (MTPD) 2,020 hectares
Summary of Major Components	
Mabatas Ore Processing Zone and Tailings Facility	The existing Mabatas Tailings Facility is located in Barangay Upper Ulip, approximately 3 kilometers west of Barangay Diwata. A mineral processing plant with a capacity not exceeding 2,000 metric tons per day will be constructed at the Mabatas area. The Mabatas Tailings Storage Reservoir, on the other hand, will cover an area of approximately 41 hectares at a dam water level of 525 meters above mean sea level.
Diwalwal Special Economic Zone and Jewellery Park	A 300-hectare plot located in the Tagbanao area in Sitio Depot, Barangay Upper Ulip. The purpose of said economic zone is to promote government policy on sustainable mineral development and support value adding activities.
729 Victory Mineral Exploration and Extraction Zone	The planned exploration program for the 729 Victory Area will include re-submission of all PMDC sample pulps from Balite vein drill cores to an accredited assay laboratory and underground diamond drilling using the existing Victory Tunnel as access with fan drilling to be concentrated along the 2 main vein systems (Buenas-Tinago Vein and Balite Vein). Mine development and production within the 729 parcel will be at the area <600 meters above sea level.
Project Cost	PhP 2 Billion (Total Project Cost)
Project Duration	2021 onwards
Operation Date	2024
Proponent Name	Philippine Mining Development Corporation (PMDC)
Proponent Authorized Representative	Atty. Alberto B. Sipaco, Jr. Chairman, President and CEO Philippine Mining Development Corporation
Proponent Address and Contact Details	Address: Suite 077, 7th Flr, Pryce Tower Condominium, J.P Laurel Ave., Bajada, Davao City, 8000 Office Landline: 082 224-0607
EIA Preparer (Consultant)	Galerio Environmental Consultancy (GEC)
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Location

The Diwalwal Mineral Reservation Areas (DMRA) is situated within the municipality of Monkayo, province of Davao de Oro, Mindanao, Philippines. It lies approximately 23 kilometers east of the municipality proper and is about 150 kilometers from Davao City. It can be accessed by various means of land transport from all major points within Mindanao via the Pan-Philippine Highway (AH26) and from thereon via the Union-Upper Ulip Road up to the proposed project site in Barangay Mount Diwata.



The total land area of the DMRA is approximately eight thousand and one hundred (8,100) hectares. Of this total, PMDC will utilize about 2,020 hectares representing Phase 1 of the Diwalwal Gold Mining Project (DGMP). Included in this phase are development and mining activities for the 729 Victory Mineral Exploration Zone (Victory Area), construction of the Mabatás Ore Processing Zone (MOPZ) and the establishment of the Diwalwal Special Economic Zone (DSEZ).

Project Components

The DGMP shall be composed of three major components, as presented in the table below.

Project Components	Sub-Components	Area/Capacity	Unit
Mabatás Ore Processing Zone	Tailings Storage Facility	41.00	hectares
		4,000,000.00	cubic meters
	CIP-Ball Mill Relocation Site	20.00	hectares
	Gold Processing Plant	27.00	hectares
		2,000.00	metric tons per day
Water Tank	64.00	cubic meters	
Diwalwal Special Economic Zone (DSEZ/PEZA) and Jewelry Park		300.00	hectares
729 Victory Mineral Exploration and Extraction Zone		729.00	hectares

729 Victory Mineral Exploration and Extraction Zone

The planned exploration program for the 729 Victory Area to be conducted by PMDC together with PACOMINCO will include re-submission of all PMDC sample pulps from Balite vein drill cores to an accredited assay laboratory and underground diamond drilling using the existing Victory Tunnel as access. The underground drill stations will be rehabilitated and fan drilling is programmed to evaluate the gold ore potential of the two main vein systems (Buenas-Tinago Vein and Balite Vein).

Surface exploration on all other areas will include geological mapping, geochemical sampling, geophysical surveys, trench and pit sampling, and additional diamond drilling. In terms of alternative programs, mechanized underground mining using state of the art equipment and latest technology is being planned to ensure operational safety, efficiency, and optimum gold recovery.

Mine development and production within the 729 parcel area will be done below 600m asl elevation.

Mabatás Ore Processing Zone and Tailings Facility

Since early 2000, the MGB has recommended for the transfer of batch-type mini CIP and ball/rod mills operated by small-scale miners to the Mineral Processing Zone at the Mabatás Area due to high mercury contamination levels in Naboc River. In 2003, the ECC for the Phase 1 – Tailings Disposal Facility to be located at Sitio Mabatás, Barangay Mount Diwata was issued by the EMB and with site development ensuing shortly thereafter. However, the Mabatás Dam remains unused by small scale miners.

The existing Mabatás Tailings Facility is located in Barangay Upper Ulip, approximately 3 kilometers west of Barangay Diwata. A mineral processing plant with a capacity not exceeding 2,000 metric tons per day will be constructed at the Mabatás area.

The Mabatás Tailings Storage Reservoir, on the other hand, will cover an area of approximately 41 hectares at a dam water level of 525 meters above mean sea level. The capacity of the dam at this elevation is approximately 2.885 million cubic meters. Assuming that mining operations produce 0.367 million cubic meters tailings per year (for an ore processing capacity of 2,000 metric tons per day MTPD), then the expected life of the dam will be for 8 years. The gold processing plant will be erected along a narrow plateau towards the east of the TSF at elevation 600 to 650 meters AMSL.

The CIP-Ball Mill relocation site, on the other hand, will contain an area of about 20 hectares located to the northern rim of the TSF at elevation 545 to 600 meters AMSL. Tailings volume from the CIP of small-scale miners is estimated to be 0.020 million cubic meters per year and currently stored at the Interim Dam.

A water tank will be constructed at the top of the ridge to supply all water needs for operations. The water sources are Lunod Spring and Tagbanao River for potable and industrial use, respectively. Pipelines will be installed and water will flow by gravity to the Mabatás area.

Diwalwal Special Economic Zone and Jewellery Park

The Diwalwal Special Economic Zone and Jewellery Park will be a mixed-use development project. It will include areas earmarked for residential, industrial (i.e. jewellery refining facilities) and retail/commercial (i.e. jewellery park) use, spaces for tourism and entertainment, zones for business process outsourcing offices, as well as places of worship, schools, at least one gas station, a transport terminal, roads and locations for future development.

The Special Economic Zone will be situated within a 300-hectare plot located in the Tagbanao area in Sitio Depot, Barangay Upper Ulip. The purpose for the establishment of said economic zone is to promote government policy on sustainable mineral development and support value adding activities in order to address economic, environmental, health and safety issues and concerns. It also aims to attend to infrastructure needs within the area.

Project Alternatives

When the project becomes operational, the economic minerals produced from the Mabatás Ore Processing Zone will be marketed to increase economic activities within the affected community. Without the project, the area will still be used for small-scale mining.

Project Category

The proposed mining project is an Environmental Critical Project (ECP) under Category A as declared through Proclamation No. 2146 (1981) and Proclamation No. 803 (1996) within the scope of the EIS System. The project is described as an ECP since mining is considered as a resource extractive industry.

Siting/Location

There is no alternative siting of the project and its supporting facilities. However, there is an alternative plan to incorporate a Philippine Economic Zone Area (PEZA) called the Diwalwal Special Economic Zone. This establishment, which is designed for manufacturing industries related to gold processing, will attract other investments for local development. Industries like jewelry making within the Diwalwal Mineral Reservation Area (DMRA) will generate additional employment and economic activities to the host community.

Process/Technology

The alternative technology being considered by the PMDC is the Efficient and New Gold Processing Plant Operation, which involves large equipment for economical and optimum gold recovery. The project will also develop new designs to optimize recycling of toxic chemicals in order to minimize waste and reduce operating costs to process low grade gold bearing veins. Engineering design in tailings storage facility will be adopted for possible zero effluents and pollution.

Resource Utilization

There are no alternative sources of power, water and raw materials for project construction and operation. In a “without project” scenario, environmental degradation that began over 37 years ago in Diwalwal will continue unabated, with no acceptable mineral extraction and processing practices being implemented. Moreover, nearly PhP 12B in excise taxes will remain uncollected by the Philippine government, and the population in the project host communities will defer on their enjoyment of project-associated livelihood, health, safety and socio-economic benefits. A “with project” scenario will significantly contribute to the achievement of an economically-productive and sustainably-managed DMRA.

Project Schedule

Project Component / Phase / Year	2018	2019	2020	2021	2022	2023	2024	2025 onwards
Mabatas Ore Processing Zone								
Small-scale Miner's CIP-Ball Mill relocation site								
Pre-construction								
Construction								
Operation								
Proposed Gold Processing Plant (2,000 MTPD)								
Pre-construction								
Construction								
Operation								
Diwalwal Special Economic Zone and Jewelry Park								
Pre-construction								
Construction								
Operation								
729 Victory Tunnel Mineral Exploration and Extraction Zone								
Pre-exploration								
Exploration								
Development								
Production								

Integrated Summary of the Project Environmental Management Plan (EMP)

Project Phase/ Module	Key Environmental Impact	Built-in Measures	Target Efficiency
I. PRE-CONSTRUCTION PHASE			
Land	Changes in surface landform, geomorphology, topography, terrain, and slopes within the DGMP	<ul style="list-style-type: none"> Engineering solutions such as barriers and retaining walls for cut slopes, drainage pipes and catchments to reduce surface run-off, benching or terracing to reduce slope steepness, rock bolts and wire mesh to control rock falls, and immediate revegetation 	<ul style="list-style-type: none"> 85-95%
	Previous mining activities have created voids within the subsurface causing these areas to become unstable	<ul style="list-style-type: none"> Adherence to optimized mine design criteria in order to control and maintain stability of underground conditions for the proposed mine development within the 729 Victory area Results of detailed underground geologic and geotechnical mapping integrated in mine design. 	<ul style="list-style-type: none"> 85-95%
	Acquisition of rights to use land use	<ul style="list-style-type: none"> There are no perceived land tenure issues since the area has already been declared as a Mineral Reservation Area. 	<ul style="list-style-type: none"> 85-95%
Water (Freshwater Ecology)	Loss of canopy cover allows solar radiation to raise water temperature to high levels	<ul style="list-style-type: none"> Maintenance of vegetative cover especially along and proximal to embankments of water systems in the area. In addition, appropriate drainage designs should be constructed to decrease rates of erosion. 	<ul style="list-style-type: none"> 80-90%
II. CONSTRUCTION PHASE			
Land	Changes in surface landform, geomorphology, topography, terrain, and slopes within the DGMP	<ul style="list-style-type: none"> Engineering solutions such as barriers and retaining walls for cut slopes, drainage pipes and catchments to reduce surface run-off, benching or terracing to reduce slope steepness, rock bolts and wire mesh to control rock falls, and immediate revegetation 	<ul style="list-style-type: none"> 85-95%
	Subsidence and disruption of groundwater resources due to dewatering of underground workings	<ul style="list-style-type: none"> Regular monitoring of groundwater through installation of piezometers 	<ul style="list-style-type: none"> 85-95%
	Stream capture via subterranean diversion	<ul style="list-style-type: none"> Installation of diversion pipes over broken ground where these waters seep through 	<ul style="list-style-type: none"> 85-95%
	Mudrush into mine workings	<ul style="list-style-type: none"> Proper disposal of mine wastes, including all other material that could behave as a fluid, far away from mine working areas 	<ul style="list-style-type: none"> 85-95%
	Rockfalls in mine workings	<ul style="list-style-type: none"> Results of proper ground conditions assessment utilized for appropriate mine development Installation of rock bolts, wire mesh, shotcrete, among others 	<ul style="list-style-type: none"> 85-95%
	Hazards associated with slope stability such as landslides and other forms of mass movement	<ul style="list-style-type: none"> Engineering solutions such as barriers, retaining walls, drainage pipes, slope gradient reduction and benching 	<ul style="list-style-type: none"> 80-90%
	Seismic induced hazards at the Mabatás Tailings Facility	<ul style="list-style-type: none"> Results of geotechnical investigations (including PGA values) will be critical inputs to the design of the tailings facility to address seismic-induced hazards 	<ul style="list-style-type: none"> 85-95%
	Strip the land of the upper organic matter-rich top soils.	<ul style="list-style-type: none"> Deforestation and attendant soil erosion can be minimized through efficient land management* 	<ul style="list-style-type: none"> 80-90%
	Loss of superficial materials will likely affect the soil fertility in the	<ul style="list-style-type: none"> Minimize footprints of structures and of work areas 	<ul style="list-style-type: none"> 80-90%

Project Phase/ Module	Key Environmental Impact	Built-in Measures	Target Efficiency
	area and may reduce the ability of the soil to provide sufficient nutrients for optimal vegetation growth	<ul style="list-style-type: none"> • Rehabilitation of affected areas conducted immediately after completion of each stage of the project* • Soil-friendly vegetation practices such as alternating deep-rooted and shallow-rooted plants can improve soil structure and reduce erosion* • For mining operations, hydraulicking should be avoided at all cost 	
	Land / site clearing for temporary housing, transport of materials,	<ul style="list-style-type: none"> • Regular and adequate spraying of water in sites of land development activities • Replacement of vegetation in areas devoid of structures • Regular maintenance of heavy equipment and motor vehicles • Regular monitoring of PM_{2.5}, PM₁₀, TSP, SO₂ and NO₂ concentrations, to ensure that levels are within the NAAQS 	• 80-90%
	Health & other services for workforce	<ul style="list-style-type: none"> • Provide a clean, safe, healthy and sustainably managed working environment for mine workers, labourers, and support workforce • Address health hazards and reduce the occurrence of mercury and cyanide poisoning, and • Promote health and safety standards in the workplace. 	• 80-90%
	Number of workers required per milestone	<ul style="list-style-type: none"> • The bulk of the unskilled workforce will be hired from local and neighboring communities. • The number of workers required per milestone are presented in Table 1.11 (Manpower Requirements) 	• 80-90%
Water	Physical disturbance of river channels	<ul style="list-style-type: none"> • Redirection/diversion of flows of runoff water away from croplands to prevent further contamination of planted areas • Installation of culverts and/or gabions, as necessary 	• 80-90%
	Increase in turbidity of water bodies	<ul style="list-style-type: none"> • Proper management of spoils from earthworks in compliance with Civil Works Guidelines 	• 80-90%
	Oil leaks and accidental oil spills	<ul style="list-style-type: none"> • Collection of used oil and storage in appropriate containers • Installation of oil-water separators to remove oil from effluents prior to discharge 	• 85-95%
	Potential impacts of uncontrolled sediment runoff to river organisms and habitats	<ul style="list-style-type: none"> • Construction of temporary surface interception drains to divert surface run-off from construction sites • Construction of sediment or settling ponds and related structures to collect waters containing high sediment levels (such as soils, subsoil and other particulate matter) for precipitation of suspended solids prior to discharge into receiving waters • Conduct of regular freshwater quality monitoring, including in-situ measurements of turbidity, DO, pH, TDS and temperature, as well as sampling and analysis in DENR accredited laboratories for other applicable water quality parameters. 	• 80-90%
Air	Fugitive dust from ground clearing operations and structure erection	<ul style="list-style-type: none"> • Regular and adequate spraying of water in sites of land development activities • Replacement of vegetation in areas devoid of structures • Regular maintenance of heavy equipment and motor vehicles 	• 80-90%
	Noise generation	<ul style="list-style-type: none"> • Documentation of heavy equipment and typical noise level generated during use • Measures to ensure noise levels are within DENR Class C standards (light industrial areas) during daytime 	• 80-90%

Project Phase/ Module	Key Environmental Impact	Built-in Measures	Target Efficiency
		<ul style="list-style-type: none"> • Conduct of regular noise level measurements, to ensure adherence to DENR Class C standards as well as DOLE permissible noise exposures • Scheduling of heavy equipment operations during daytime • Establishment of noise barriers and enclosure of stationary vibrating equipment • Provision of ear mufflers to community workers directly exposed to noisy equipment 	
People	Employment and livelihood	<ul style="list-style-type: none"> • Adoption of strict policies requiring contractors to source workforce from qualified locals • Development of prioritization scheme on local hiring that provides equal opportunities for men and women 	• 85-95%
	Improvement of overall accessibility in host barangays	<ul style="list-style-type: none"> • Proper planning and implementation of the road network interconnecting the three project components 	• 80-90%
III. OPERATION PHASE			
Land	Denudation of slopes as a consequence of unregulated small-scale mining activities that may lead to massive landslides and cause injuries and fatalities	<ul style="list-style-type: none"> • Strict implementation of mine safety practices for small-scale miners operating >600 masl of the Victory Area 	• 80-90%
	Soil and water contamination from ore transport and plant operations,	<ul style="list-style-type: none"> • Regular and adequate spraying of water in sites of land development activities • Replacement of vegetation in areas devoid of structures • Regular maintenance of heavy equipment and motor vehicles • Conduct of regular freshwater quality monitoring, including in-situ measurements of turbidity, DO, pH, TDS and temperature, as well as sampling and analysis in DENR accredited laboratories for other applicable water quality parameters. 	• 80-90%
	Hazards associated with slope stability such as landslides and other forms of mass movement	<ul style="list-style-type: none"> • Engineering solutions such as barriers, retaining walls, drainage pipes, slope gradient reduction and benching 	• 80-90%
	Seismic induced hazards at the Mabatás Tailings Facility	<ul style="list-style-type: none"> • Results of geotechnical investigations (including PGA values) will be critical inputs to the design of the tailings facility to address seismic-induced hazards 	• 85-95%
Water	Contamination from domestic wastes	<ul style="list-style-type: none"> • Treatment of domestic sewage in a site modular treatment plant prior to discharge to receiving surface water bodies. • Implementation of an Integrated Solid Waste Management Plan • Placement of stockpiles away from any water body and drainage systems, to prevent seepage of contaminated waters • Monitoring of acid mine drainage 	• 85-95%
	Mabatás tailings pond discharge of clean effluents to the Mabatás Creek and, further, Naboc River	<ul style="list-style-type: none"> • Regular maintenance and inspection of tailings and associated facilities to ensure clean effluents, within acceptable standards set by DAO 2016-08 	• 85-95%
Air	Generation of air pollutants from various sources, including fuel	<ul style="list-style-type: none"> • Installation of an adequate number of stacks at designed height to efficiently disperse emissions • Installation of a continuous emissions monitoring system (CEMS) for particulate 	• 80-90%

Project Phase/ Module	Key Environmental Impact	Built-in Measures	Target Efficiency
	burning, ore handling, ore crushing, fugitive dust and household cooking	<ul style="list-style-type: none"> matter, SO_x, and NO_x emissions Regular checks and maintenance of vehicles to reduce exhaust emissions 	
	Increase in sound levels from heavy equipment	<ul style="list-style-type: none"> Provision of ear protective devices and other safety paraphernalia to workers during shift duty Regular briefing on safety protocols and strict implementation of Safety Plans Provisions of buffer zones at the project site perimeter to improve noise attenuation and improve aesthetics, with proper vegetation and tree species planted in the prescribed buffer zone 	<ul style="list-style-type: none"> 80-90%
	Alteration of air quality from vehicles, fugitive dust and from equipment use	<ul style="list-style-type: none"> Regular and adequate sprinkling of water in the premises to minimize generation of dust particles Preventive maintenance of heavy equipment and vehicles Regular monitoring of PM_{2.5}, PM₁₀, TSP, SO₂ and NO₂ concentrations, to ensure that levels are within the NAAQS 	<ul style="list-style-type: none"> 80-90%
People	Improved overall health and well-being in host communities	<ul style="list-style-type: none"> The Mabatás Tailings Storage Facility will significantly reduce environmental and health hazards associated with the indiscriminate disposal of mercury and cyanide-laden wastes generated by small-scale mining operators Victory Area activities will rationalize activities and promote improvements to health and safety practices in Diwalwal. The Special Economic Zone will entail the planning for and proper implementation of auxiliary facilities that will be able to accommodate people and activities in the area, including those related to health, sanitation and waste management 	<ul style="list-style-type: none"> 80-90%
	Public health and safety	<ul style="list-style-type: none"> Resources for the implementation of medical outreach and feeding programs, construction and repair of health facilities and the provision of medicines and medical supplies 	<ul style="list-style-type: none"> 80-90%
	Enhanced employment and livelihood activities	<ul style="list-style-type: none"> Increased business opportunities and associated economic activities related to mining Special Economic Zone brings with it more and improved employment opportunities for the Monkayo population Adoption of a policy to prioritize the hiring of qualified local residents for employment 	<ul style="list-style-type: none"> 80-90%
IV. DECOMMISSIONING/REHABILITATION PHASE			
Land	Recovery of visual amenity of the project area	<ul style="list-style-type: none"> Mine rehabilitation in accordance with closure plans 	<ul style="list-style-type: none"> 80-90%
Water	Retention of the DGMP drainage system as a permanent system at closure to provide efficient post-closure water management	<ul style="list-style-type: none"> Monitoring of DGMP drainage flows, given that preliminary assessments indicate that drainage waters will not be polluted and can be discharged into the Naboc River and its tributaries 	<ul style="list-style-type: none"> 80-90%
	Life of project and alternative uses of project area	<ul style="list-style-type: none"> Currently, the life of the project is estimated at eight (8) years although plans will be dependent on the outcome of further scheduled exploration works 	<ul style="list-style-type: none"> 80-90%

Project Phase/ Module	Key Environmental Impact	Built-in Measures	Target Efficiency
	Abandonment plan including long term management plan for the project	<ul style="list-style-type: none"> • Abandonment will entail the formal designation of the area as a SEZ, with its intended use reflected in the Municipal Comprehensive Development and Land Use Plans (CDP/CLUP) • At end of project life, the proponent shall execute the following activities as part of its general decommissioning, abandonment and rehabilitation policy for all three components of the DGMP: <ul style="list-style-type: none"> ○ Inform the community of the decommissioning plan ○ Isolate contaminated areas ○ Remove all structures and equipment ○ Clear all irrelevant or unused infrastructure ○ Implement proper solid waste removal and management ○ Conduct public consultations to address environmental and social concerns within and around the project footprint area, and ○ Gradually reclaim disturbed land • During the post-abandonment phase, decommissioning of the domestic wastewater treatment facility will be conducted and the rehabilitation of the plant site will commence. • Closure and rehabilitation strategies will integrate long-term measures that will ensure the physical and chemical stability of affected areas. • Measures to be integrated include continued monitoring of surface water quality as a component of aftercare activities and the implementation of appropriate mitigating procedures for identified sources of pollutants • Based on financial requirements that will accompany an approved Environmental Protection and Enhancement Program (EPEP), PACOMINCO shall create a Mine Rehabilitation Fund (MRF) to serve as a trust fund for physical and social rehabilitation of areas impacted by the project's activities and for study on the social, technical and preventive aspects of rehabilitation • The MRF shall be formulated with the intention of bringing back the area to or improve on its baseline conditions • Existing housing or office buildings, as well as all direct, ancillary and infrastructure developments within and related to the Diwalwal Special Economic Zone, will either be dismantled or turned over to the local government, as appropriate and depending on the intended future use for the site and facilities. 	80-90%
People	Loss of economic benefits Loss of livelihood and employment	<ul style="list-style-type: none"> • Establishment of alternative modes of livelihood during the operation phase 	• 80-90%

Copies of the full Environmental Impact Statement (EIS) for this project may be downloaded at the EMB website:
<https://emb.gov.ph/environmental-impact-assessment/>