I. ENVIRONMENTAL IMPACT AND MANAGEMENT PLAN

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
LAND				
☑ Consistency with land use	Current land use w/in 1km radius (as per zoning ordinance): ☐ Residential ☐ Commercial/ Institutional ☐ Industrial ☐ Agricultural/ Recreational ☐ Protected Areas ☐ Others, specify Actual land uses w/in 1km radius: ☐ Residential ☐ Commercial/ Institutional ☐ Industrial ☐ Agricultural/ Recreational ☐ Protected Areas ☐ Others, specify	☑ See attached proof of compatibility with land use ☑ Limit project activities to what is compatible to the land use ☐ Others, specify	Actual land uses w/in 1km radius: ☐ Residential ☐ Commercial/ Institutional ☐ Industrial ☐ Agricultural/ Recreational ☐ Protected Areas ☐ Others, specify	

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
☐ Land tenure / compatibility issue	Identify land tenure / compatibility issues: ☐ CARP ☐ CADC/ CADT/ CALC/ CALT ☐ ROW ☐ Informal settlers ☐ Ecologically sensitive or protected area ☐ Others, specify	☐ Obtain the following clearances/ permits from concerned agencies: ☐ Resettlement Plan prepared ☐ Provide relocation/disturbance compensation packages ☐ Ensure participation of IPs in consultations and dialogues ☐ MOA prepared/signed ☐ Provide adequate buffer ☐ Others, specify	☑ Regularly monitor presence/absence of complaints ☑ Regular coordination with LGU or appropriate agencies ☐ Others, specify	
☐ Disturbance to wildlife due to vegetation clearing	Existing vegetation in the area: ☐ Forestland ☐ Marshland ☐ Grassland ☐ Mangrove ☐ Wetland	☑ Comply with conditions of DENR/LGU SLUP, Tree Cutting Permit, ROW, PCA Permit ☑ Limit land clearing as much as possible ☑ Provide temporary fencing for vegetation that will be retained ☑ Promote restoration of damaged or	☑ Annual inspection of area replanted/ re-vegetated ☐ Others, specify	

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
	☐ Others, specify	destroyed vegetation where possible (e.g., tree planting) ☐ Provide adequate buffer zone		
☐ Change in surface landform/ topography/ terrain/slope ☐ Soil Erosion	Slope: ☐ flat (0-3%) ☐ gently sloping to rolling (3-18%) ☐ Steep (>18%) Is the project site located in an area identified by MGB/PAGASA/ PHIVOLCS as hazard prone? ☐ Yes ☐ No	Considering the natural hazards and climate projections in the area: ☐ Employ appropriate soil erosion control and slope protection measures ☐ Designate a spoils storage area, with topsoil set aside for later use and allow maximum re-use of spoils ☐ Construct during dry season ☐ Stabilize of embankment with grasses or other soil cover ☐ Conduct Engineering Geological and Geo-hazard Assessment (EGGA) and implement corresponding recommendation ☐ Others, specify	☐ Regular inspection of slope protection measures in erosion-prone areas ☐ Regular inspection for new eroded areas near the site ☐ Others, specify	

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
Building of structure and improper solid waste disposal leading to: ☐ Impairment of visual aesthetics ☐ Devaluation of land values	Solid Waste Management Scheme in the area: ☐ SLF ☐ MRF ☐ Composting ☐ Regular Collection of Solid Wastes Presence of visually significant landforms/landscape/structures? ☐ Yes ☐ No	☑ Implement recovery re-use and recycling of waste materials ☑ Provide receptacles / bins for solid wastes ☑ Implement proper segregation, collection and disposal of domestic wastes in designated areas ☐ Composting of Organic Wastes ☐ Coordinate with the municipal / city waste collectors ☐ Implement landscaping and other beautification measures ☐ Provide adequate buffer ☐ Compensate adjacent property owners ☐ Others, please specify	☑ Daily inspection of waste handling including segregation in waste/recycling bins ☑ Weekly inspection of waste accumulation and disposal ☐ Regular inspection of landscaping and other beautification activities ☐ Regular monitoring of buffer zones ☑ Regular monitoring for presence/absence of complaints from adjacent property owners ☐ Others, specify	
☐ Soil/Land contamination due to materials (including fuel) leakage ☐ Depletion of soil nutrient content/soil productivity/Change in acidity/alkalinity of soil	Existing soil type in the area: ☐ sandy ☐ clay ☐ sandy-loam ☐ concrete/cement ☐ Others, specify	☐ Secondary containment (pls. specify): ☐ Engage third party company for waste collection	☐ Regular inspection for leakage of materials that can cause land/soil contamination. ☐ Testing of soil physical and chemical properties ☐ Quarterly ☐ Semi annual	

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
	Soil acidity/alkalinity ☐ acidic ☐ basic	☐ Others, specify	☐ Annual ☐ Others, specify	
WATER				

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		

Possible Environmental/Social Impacts

- ☐ Increased siltation due to project implementation
- ☑ Water quality degradation
- ☐ Others, specify

Baseline Environment

Specify nearest/receiving water body:

Distance to nearest/receiving water body:

- ☐ 0 to less than 0.5 km
- ☐ 0.5 to 1 km
- ☐ More than 1 km

Classification of nearest/receiving water body:

☐ Freshwater	☐ Marine/ coastal water
☐ AA	☐ SA
☐ A	☐ SB
☐ B	☐ SC
☐ C	☐ SD
☐ D	

Preventive/Mitigating Measures

- ☑ Set up proper and adequate sanitary facilities
- ☑ Ensure strict observance of proper waste handling and disposal and proper sanitation including by the contractors and its workers (if any)
- ☑ Provision of wastewater treatment facility
- ☑ For process wastewater, specify type of treatment facility:
- ☑ For domestic wastewater, specify type of treatment facility:
- ☑ Set up silt traps/settling basins and other similar facilities to minimize downstream siltation
- ☑ Provide oil containment system (ie. ring canal, grease traps) for fuel tanks/ motorpool/ maintenance areas
- ☑ Others, specify

Monitoring Parameters/ Implementation

Regular (ocular) inspection of:

- ☑ Drainage / canal systems
- ☑ Water treatment facility (i.e., grease trap, septic tank, etc.)

Regular monitoring of ambient water quality:

Parameter	Frequency
☑ pH	☐ Annual ☐ Semi-annual ☐ Quarterly
☑ TSS concentration	☐ Annual ☐ Semi-annual ☐ Quarterly
☑ BOD	☐ Annual ☐ Semi-annual ☐ Quarterly
☑ Color	☐ Annual ☐ Semi-annual ☐ Quarterly
☑ Total Coliform	☐ Annual ☐ Semi-annual ☐ Quarterly
☑ Oil and Grease	☐ Annual ☐ Semi-annual ☐ Quarterly

Remarks

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
	Current Water Use: ☐ Fishery ☐ Tourist Zone / Park ☐ Recreational ☐ Industrial ☐ Agricultural ☐ Others, specify: Size of population using receiving surface water: ☐ ≤ 1,000 persons ☐ >1,000 and ≤ 5,000 persons ☐ >5,000 persons Distance of project area to the nearest well used: ☐ 0 to less than 0.5 km ☐ 0.5 to 1 km ☐ More than 1 km Use of the nearest well: ☐ Drinking/Domestic ☐ Industrial ☐ Agricultural		Regular monitoring of plant effluent: ☑ pH — ☐ Annual ☐ Semi-annual ☐ Quarterly ☑ TSS concentration — ☐ Annual ☐ Semi-annual ☐ Quarterly ☑ BOD — ☐ Annual ☐ Semi-annual ☐ Quarterly ☑ Color — ☐ Annual ☐ Semi-annual ☐ Quarterly ☑ Total Coliform — ☐ Annual ☐ Semi-annual ☐ Quarterly ☑ Oil and Grease — ☐ Annual ☐ Semi-annual ☐ Quarterly	

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
☐ Competition in water use ☐ Depletion of water resources	Size of population using receiving surface water: ☐ ≤ 1,000 persons ☐ >1,000 and ≤ 5,000 persons ☐ >5,000 persons Available/nearest water source. ☐ Deepwell ☐ Water district/LGU ☐ Surface water ☐ Others, specify	☐ Implement rainwater harvesting and similar measures as an alternative source of water ☐ Observe water conservation measures ☐ Carefully select project site to avoid disruption of traditional water uses ☐ Obtain Water Permit from NWRB ☐ Improve efficiency of water supply and distribution system ☐ Increase storage capacities of water supply structures for resilience to greater climate variations and extremes ☐ Others, specify	☑ Regular monitoring for presence/absence of complaints ☑ Regular coordination with concerned agencies ☑ Regularly monitor occurrences of water shortages ☐ Others, specify	
☐ Increased occurrence of flooding	Is the project site located in an area identified by MGB/PAGASA as flood prone? ☐ Yes ☐ No	☐ Use appropriate design for project facilities including appropriate drainage mechanism considering the existing local drainage system. ☐ Regularly remove debris and other materials that may obstruct water flow ☐ Use appropriate technology (e.g., raised hand-pumps) to protect	☑ Regular monitoring for presence/absence of complaints ☑ Regular coordination with concerned agencies ☑ Regular monitoring for increased frequency of flooding ☐ Others, specify	

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures ☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost	Monitoring Parameters/ Implementation	Remarks
		drinking water from flood contamination ☐ Others, specify		
AIR / NOISE				
☐ Air quality degradation	Distance to nearest community: ☐ 0 to less than 0.5 km ☐ 0.5 to 1 km ☐ More than 1 km Is the wind direction blowing towards the nearest community most of the year? ☐ Yes ☐ No	☑ Properly operate and maintain all emission sources (e.g. vehicles, pumps, generator, etc) ☑ Install the appropriate air pollution control device/s ☑ Strictly enforce good housekeeping practices ☑ Control vehicle speed to lessen suspension of road dust ☐ Conduct water spraying to suppress dust sources and minimize discomfort to nearby residents ☑ Use covered vehicles to deliver materials that may generate dust ☐ Other, specify	☑ Regular monitoring for presence/absence of complaints Regular (ocular) inspection of: ☐ Absence of white or black smoke from vehicles, heavy equipment and generator ☐ Absence of black smoke from stack/s ☐ Presence of truck cover during deliveries Regular monitoring of ambient air quality: ☑ PM10 — ☐ Annual ☐ Semi-annual ☐ Quarterly ☑ TSP — ☐ Annual ☐ Semi-annual	

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<tr><th>Possible Environmental/Social Impacts</th><th>Baseline Environment</th><th>Preventive/Mitigating Measures</th><th>Monitoring Parameters/ Implementation</th><th>Remarks</th></tr>
<tr><td></td><td></td><td>☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost</td><td></td><td></td></tr>
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<tr><td></td><td>☐ Quarterly</td></tr>
<tr><td>☑ NO_2</td><td>☐ Annual
☐ Semi-annual
☐ Quarterly</td></tr>
<tr><td>☑ SO_2</td><td>☐ Annual
☐ Semi-annual
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Regular monitoring of stack emissions:
<table>
<tr><th>Parameter</th><th>Frequency</th></tr>
<tr><td>☑ PM10</td><td>☐ Annual
☐ Semi-annual
☐ Quarterly</td></tr>
<tr><td>☑ TSP</td><td>☐ Annual
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<tr><td>☐ Nuisance due to generation of obnoxious/unpleasant odor</td><td>Distance to nearest community:

☐ 0 to less than 0.5 km
☐ 0.5 to 1 km
☐ More than 1 km</td><td>☐ Regular clean-up and good housekeeping practices
☐ Use of environment-friendly deodorizer or odor masking substances</td><td>☑ Regularly monitoring for presence/absence of complaints
☐ Others, specify</td><td></td></tr>
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Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
	Is the wind direction blowing towards the nearest community most of the year? ☐ Yes ☐ No	☐ Spraying natural / microbial disinfectants ☐ Provide adequate buffer and/or planting of trees ☐ Others, specify		
☐ Nuisance due to noise generation	Distance to nearest community: ☐ 0 to less than 0.5 km ☐ 0.5 to 1 km ☐ More than 1 km	☐ Properly operate and maintain all noise sources (e.g. vehicles, pumps, generator, etc) ☐ Install, when applicable, the appropriate noise control device/s (e.g., mufflers, silencer, sound barriers, etc.) ☐ Implement appropriate operating hours ☐ Provide adequate buffer and/or planting of trees ☐ Others, specify	☐ Regular monitoring for presence/absence of complaints ☐ Regular monitoring of buffer zones ☐ Quarterly monitoring of noise level ☐ Others, specify	
PEOPLE & CULTURE				

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
☐ Displacement of residents including indigenous people in the project site and within its vicinity ☐ Enhanced employment and/or livelihood opportunities ☐ Reduced employment and/or livelihood opportunities ☑ Increased revenues for LGU ☐ Disruption/Competition in delivery of public services (e.g., education, peace and order, etc.) ☐ Enhanced delivery of public services (e.g., education, peace and order, etc.) ☐ Increase in traffic volume and worsening of traffic flow	Size of population of host barangay: ☐ ≤ 1,000 persons ☐ >1,000 and ≤ 5,000 persons ☐ >5,000 persons ☐ Indigenous People Size Classification of host barangay: ☐ Urban ☐ Rural Employment/Livelihood Opportunity Rate in the host Municipality: ☐ High ☐ Low Description: Available services within/near the host barangay: ☐ Schools (e.g., elementary, high school, college) ☐ Health facilities (e.g., clinics, hospitals, etc.)	☐ Provide relocation/disturbance compensation packages ☐ Prioritize local residents for employment ☐ Promptly pay local taxes and other financial obligations ☐ Regularly coordinate with LGU ☐ Conduct prior consultation and coordination to minimize disruption of daily domestic activities ☐ Ensure participation of IPs in consultations and dialogues & consider IP rights and cultural practices in the provision of relocation/disturbance compensation packages ☐ Provide appropriate traffic/warning signs, lighting, etc ☐ Others, specify	☑ Regular monitoring for presence/absence of complaints ☑ Regular coordination with LGU ☐ Others, specify	

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
	☐ Peace and order (e.g., police outpost, Brgy. Tanod, etc.) ☐ Recreation and sports facilities ☐ Others, specify			
☐ Destruction/disturbance of physical cultural resources. *(✓ if project site has been identified to have such by NM, NHCP, NCAA and LGUs)*	Physical Cultural resources within the vicinity of the project site:	☐ Implement appropriate protocols based on NM, NHCP, NCAA and LGU guidelines including those for chance finds (if any). Specify:	☐ Regular coordination with NM, NHCP, NCAA and LGU	
Safety Risks ☑ Fire ☐ Structural Failure	Source of risks ☐ Flammable substances, please specify ☐ Toxic substances, please specify	☑ Regularly coordinate with LGU ☐ Provide appropriate warning signs, lighting and barricades, whenever practicable ☑ Observe proper housekeeping ☐ Provide on-site medical services for any emergency. ☐ Participate in public awareness programs on health and safety ☐ Implement appropriate safety programs for both community and workers	☑ Regular monitoring for presence/absence of complaints ☐ Regular monitoring of buffer zones ☑ Regular coordination with LGU ☑ Regular submission of reports to concerned agency ☐ Others, specify	

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
	☐ Others, specify	☑ Strictly comply with fire, safety and similar regulatory requirements ☐ Strictly comply with requirements of RA 6969 ☐ Others, specify		