



Environmental Performance Report and  
Management Plan Summary for the Public (ESP)

**Solid North Mineral Corporation**  
**Quarry Expansion & 1.5 MMTPY**  
**Limestone Pulverizing Plant**

Brgy. Akle, San Ildefonso, Bulacan



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**Clean Initiatives.**

## EXECUTIVE SUMMARY

### 1.0 Project Description

<b>Name of Project</b>	Solid North Mineral Corporation (SNMC) Quarry Expansion & 1.5 MMTPY Limestone Pulverizing Plant			
<b>Project Location</b>	Province of Bulacan, Municipality of San Ildefonso, Barangay Akle			
<b>Project Area</b>	Existing plant site approx. 14.89 hectares with 757-hectare MPSA 161-2000-III			
<b>Nature of Project</b>	<ul style="list-style-type: none"> <li>Quarrying of limestone, shale and pozzolan</li> <li>Limestone pulverizing</li> </ul>			
<b>Project Size</b>	<b>Quarry Expansion:</b> <ul style="list-style-type: none"> <li>Limestone: 7.1 Million Metric Tons Per Year (MMTPY) from 1.2 MMTPY</li> <li>Shale: 0.81 MMTPY</li> <li>Pozzolan: 0.75 MMTPY</li> </ul> <b>Limestone Pulverizing:</b> <ul style="list-style-type: none"> <li>Pulverized Limestone: 1.5 MMTPY</li> </ul>			
<b>Environmental Compliance Certificate</b>	CO-0911-0007 issued March 1, 2010			
<b>Summary of Major Project Components (Existing &amp; Proposed)</b>	<b>Major Components</b>		<b>Existing Components (as per ECC)</b>	<b>Components to be Modified</b>
	<b>Quarrying</b>	<b>Limestone</b>	▪ 1.2 MMTPY	▪ Additional 5.9 MMTPY
		<b>Shale</b>	▪ 0.21 MMTPY	▪ Additional
		<b>Pozzolan</b>		Shale/Pozzolan Extraction Rate
	<b>Limestone Pulverizing</b>		▪ 0.75 MMTPY (cement)	<ul style="list-style-type: none"> <li>Removal of kiln cement production</li> <li>Retention of limestone crusher and pulverizer</li> </ul>
	<b>Rehabilitation</b>		<ul style="list-style-type: none"> <li>(a) Power Supply &amp; Support Utilities Upgrade</li> <li>(b) Electromechanical Work at the Production Line</li> <li>(c) Finish Mill &amp; Auxiliaries</li> <li>(d) Raw Mill Upgrade &amp; Energization</li> </ul>	<ul style="list-style-type: none"> <li>(a) Power Supply &amp; Support Utilities Upgrade</li> <li>(b) Electromechanical Work at the Production Line</li> <li>(c) No Rehabilitation of Finish Mill &amp; Auxiliaries</li> <li>(d) Raw Mill Upgrade &amp; Energization</li> </ul>
<b>Resource Utilization</b>	<b>Water</b>		<p>The water requirement for the operations of SNMC Quarry Expansion &amp; 1.5 MMTPY Limestone Pulverizing Plant is estimated at about <b>72 m<sup>3</sup>/day</b>.</p> <p>Two deepwell facilities with a combined capacity of 27 m<sup>3</sup>/hr. shall supply the cooling water requirement of the system. There is also a stand-by lagoon that can deliver a water a capacity of 30 m<sup>3</sup>/hr. in case the deepwell facilities are not available.</p>	

	<b>Power</b>	Manila Electric Company (MERALCO) has a substation power house that supplies the electricity requirement of the plant with <b>483,000 kW/hr.</b>
<b>Project Alternative</b>	<p>No other sites were considered as the current facility, including MPSA 161-2000-III, is already owned by SNMC. The current plant site is ideal because the existing facilities, such as crushers and storage silos will be utilized. Since the existing facility is within an area where quarrying activities are prevalent, people in the area are used to these kinds of industries. In addition, most of the residents were previously or currently employed by these industries.</p> <p>No other technologies were considered since the crushing facilities to be used for the limestone pulverizing operation is already existing. Furthermore, the limestone pulverizing mill was chosen because it can produce 0.1-1.5mm of pulverized limestone for circulating fluidized bed (CFB) power plants, one of the potential customers of SNMC. This pulverizing mill is efficient because it produces no waste; limestone greater than 1.5mm will be supplied to the nearby Eagle Cement Corporation.</p>	
<b>Project Cost</b>	Php 300,000,000.00	
<b>Construction Period</b>	2017 to 2018	
<b>Commercial Operation Date</b>	2019	

## 2.0 Major Components of the Project

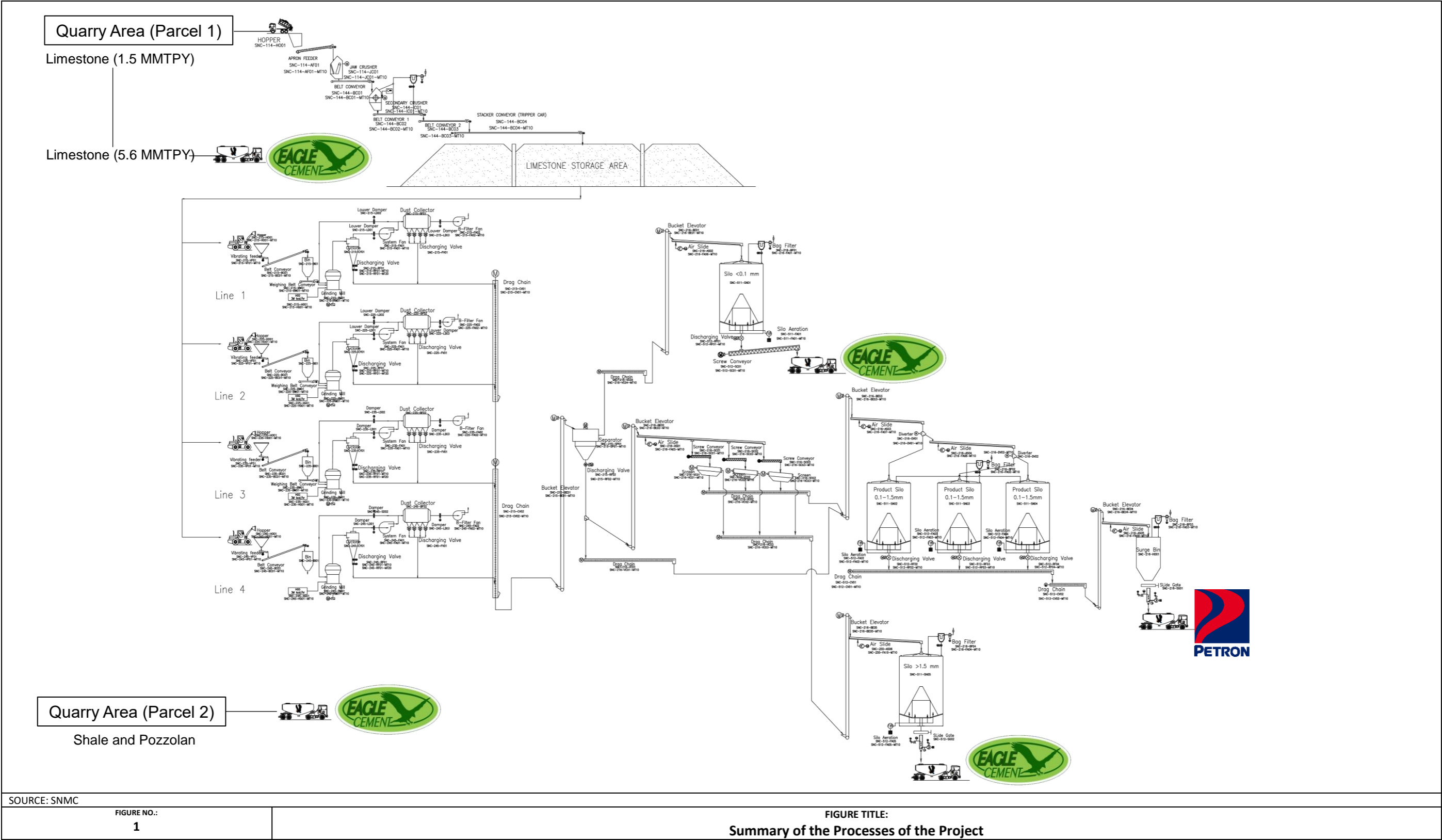
**Table 1** presents the major project components and the equipment to be utilized by the project.

**Table 1: Major Project Components**

Component		Specifications	
Quarry Operations			
<b>Quarrying</b> <ul style="list-style-type: none"><li>▪ Excavation</li><li>▪ Explosives Blasting</li><li>▪ Extraction of limestone, shale and pozzolan</li><li>▪ Transfer of limestone, shale, and pozzolan from quarry area to plant site</li></ul>	<b>EQUIPMENT</b>		<b>NO. OF UNITS</b>
	Hydraulic drills		2
	Bulldozers, D9 or equivalent		2
	Rock breaker		1
	Loaders, 2 m <sup>3</sup> capacity		4
	10-wheeler trucks		9
	Road grader		2
	Water truck		2
	Road compactor		2
	Hydraulic excavator, 1 m <sup>3</sup> capacity		1
	Fuel lorry		1
	Utility trucks		3
	Service vehicles		6
Limestone Pulverizing			
<b>Limestone Crushing and Conveying</b>	▪ 3 units 250 tons per hour (TPH) Double-Stage Reduction System composed of Jaw Crusher and Impact Hammer		
<b>Limestone Grinding</b>	▪ MTW215 European Type Trapezium Mill composed of 4 units with a rated capacity of 40 TPH each		
<b>Limestone Storage</b>	▪ 9,953 MT capacity		
<b>Pulverized Limestone Storage &amp; Bulk Loading</b>	▪ 900 x 4 MT capacity		

3.0 Process/Technology

Figure 1: Summary of the Processes of the Project



## 4.0 Summary of Major Impacts and Residual Effects After Mitigation

Table 2 presents a concise summary of environmental impacts caused by the operation, as well as the corresponding mitigating measures and residual impacts.

Table 2: Summary of Major Impacts, Mitigating and Enhancement Measures, and Residual Impacts

Module	Impact	Mitigating/Enhancement Measures	Residual Impact
Land	More waste (hazardous and residual) will be produced with the construction and operation of Limestone Pulverizing Plant	SNMC applies a waste management procedure as part of its environmental management plan. This procedure encompasses solid waste management, hazardous waste management, and scrap management.	Residual and hazardous waste are hauled off by accredited off-takers. Wastes will not be stocked in the area.
	Loss of flora and fauna in the areas to be developed as quarry sites.	As part of the EPEP, SNMC commits to monitoring and evaluation of species survival within identified habitat.  SNMC will also establish buffer zones around the quarry areas. These areas will be allocated for planting of fast growing indigenous tree species such as acacia and ipil-ipil and fruit bearing trees.  A nursery will also be established to provide required seedlings for the buffer zones.	Flora and fauna within the quarry areas are expected to be lost. However, vegetation within buffer zones is expected because of the efforts of SNMC. Furthermore, SNMC will diligently follow progressive rehabilitation plans as outlined in the EPEP and FMRDP. The company will set aside enough funds for rehabilitation.
Water	Water consumption	Since a dry process will be applied, less water will be consumed by the pulverizing facility. SNMC may opt to adopt a water sustainability program or a water reuse program to further reduce water consumption.	Water will still be consumed by the facility. Water is also allotted for domestic purposes and for watering to mitigate fugitive emissions.
	Siltation in water bodies.	Installation of siltation ponds in plant and quarry areas. Proper maintenance of siltation ponds.	The siltation due to the operations of SNMC will be minimized.
	Water contamination due to oil spills and leaks.	SNMC implements spill management procedures.	Implementation of spill management procedure shall greatly minimize the risk of contamination due to oil spills and leaks.
Air	Fugitive dust	Regular road watering is conducted.  Bag filters will be installed as part of the limestone pulverizing facility.	Fugitive dust, while still prevalent, will significantly be lessened.
	Noise	Heavy equipment is muffled. Workers use appropriate PPE. Noisy activities are performed only during daytime. Sound barriers and sound proofing are installed.	Noise from the facility will still be emitted.
People	Blasting may cause ground vibration and presence of fly rocks.	Optimum blasting design through optimum blast holes pattern and optimum explosives	Vibration and noise will be eliminated.
	Exposure of workers to occupational hazards	SNMC currently follows a Safety and Health Program, which is observed throughout the operation of the plant.	Accidents may still occur, but the safety and health guidelines currently in place significantly lowers the

Module	Impact	Mitigating/Enhancement Measures	Residual Impact
			exposure of workers to occupational hazards.
	Higher fund allocation for social development programs	<b>SNMC</b> conducts yearly IEC activities with various barangay representatives to formulate SDMP activities.	The community will continue to reap benefits of social development programs
	Job opportunities	The company continues to prioritize local hiring.	Higher employment rates in the community
	Higher local tax to be paid owing to higher revenue of company	<b>SNMC</b> will continue to pay taxes.	Higher local tax.

## 5.0 Identified Stakeholders

**Table 3** presents the identified stakeholders for the project:

**Table 3: Identified Stakeholders**

Stakeholders	Name
<b>Local Government Unit</b>	Municipality of San Ildefonso Barangay Akle (Direct Impact Area) Barangay Alagao (Indirect Impact Area) Barangay Talbak (Indirect Impact Area)
<b>Sector Representatives within Barangay Akle</b>	Education Health Livelihood Religious Business Owners Senior Citizens Women
<b>Non-Government Organization</b>	APO SIBAAO

## 6.0 Statement of Commitment and Capability to Implement Necessary Measures to Prevent Negative Impacts

**SNMC** commits to:

- Comply with the conditions that will be stipulated in the ECC and other related environmental laws;
- Foster mutually beneficial partnership and cooperation with host communities;
- Promote sustainable use and responsible development of resources by adopting appropriate technologies;
- Develop livelihood programs and upgrade skills of host communities to contribute and enhance the quality of life; and
- Develop training programs for its employees which will ensure that they will be continually prepared for the tasks assigned to them.

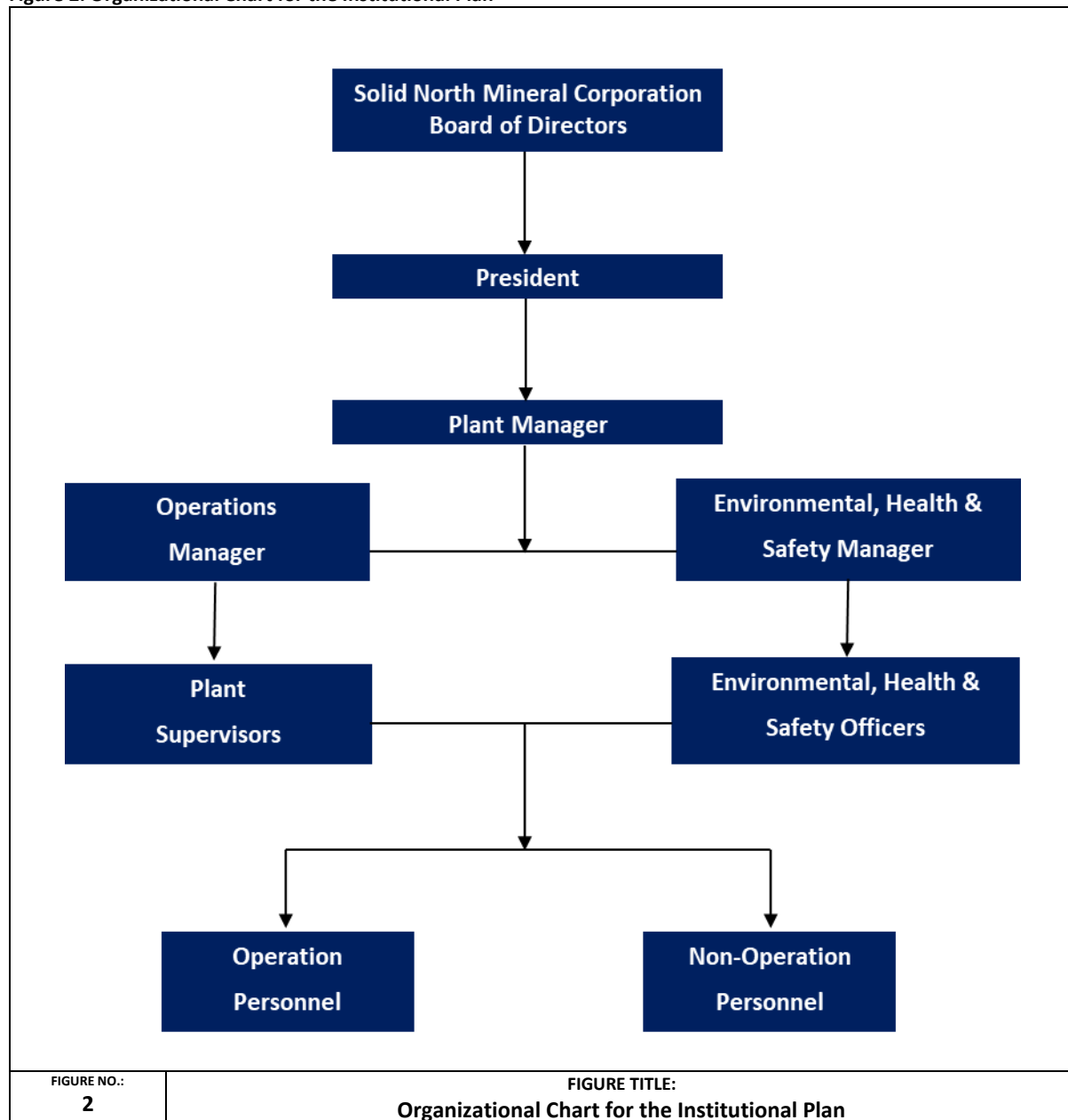
The institutional organization of the quarry expansion and 1.5 MMTPY limestone pulverizing plant as shown in **Figure 2** contains people with their assigned responsibilities that require interaction among **SNMC's** different departments. The objective of this organization is to achieve the following:

- Economical and safety operations and maintenance of the proposed project's components;
- Implementation of company policies;
- Environmental compliance and sustainability; and

- Promotion and enhancement of the social acceptability of the proposed project.

The institutional organization will involve **Solid North Mineral Corporation's** top-level management, since this group is responsible for providing the corporate direction and policies of the company. The policies shall then be disseminated to department heads and managers for implementation of the company personnel, including those who will be working on the operations of the proposed project.

**Figure 2: Organizational Chart for the Institutional Plan**



## 7.0 Proponent and Preparer Details

For more information about the **SNMC Quarry Expansion & 1.5 MMTPY Limestone Pulverizing Plant**, the following people may be contacted:

<b>Proponent Name</b>	Solid North Mineral Corporation (SNMC)
<b>Proponent Authorized Representative</b>	<b>Mr. Erdulfo A. Arañas</b> President
<b>Proponent Address and Contact Details</b>	<b>Solid North Mineral Corporation</b> Unit 3505-B Summit One Tower, 530 Shaw Blvd., Mandaluyong City, NCR, The Philippines, 1550 Tel No.: (+632) 535-0245
<b>EPRMP Preparer (Consultant)</b>	LCI Envi Corporation
<b>Preparer Contact Person</b>	<b>Engr. Jose Marie U. Lim, MSc.</b> Managing Director
<b>Preparer Address and Contact Details</b>	<b>LCI Envi Corporation</b> Unit 8LM Future Point Plaza 3 111 Panay Avenue, South Triangle Quezon City, NCR, The Philippines, 1103 Telephone no.: (+632) 442-2830 Fax No.: (+632) 961-9226