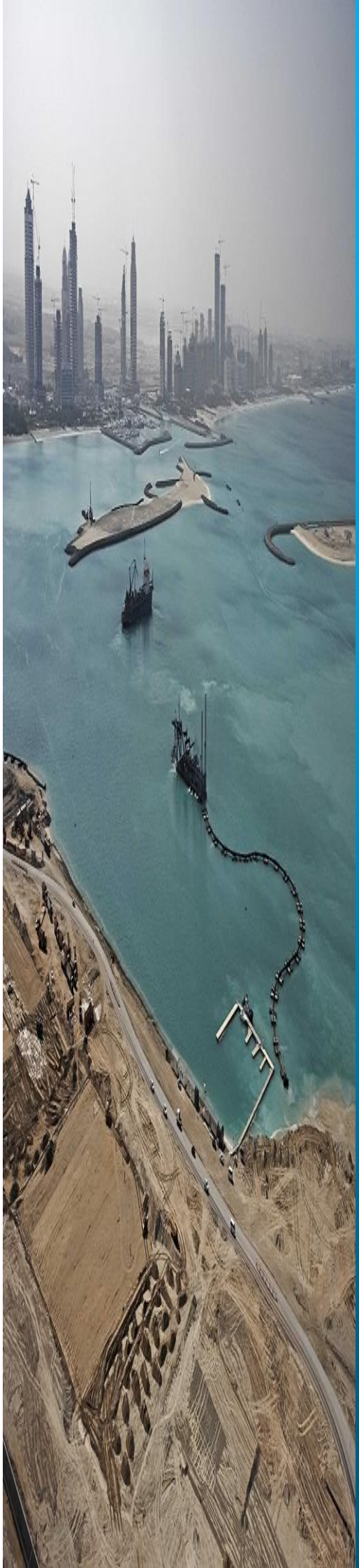


The Propose Seabed Dredging & Quarrying Project

Philippine Luzon West Coast
(Manila Bay approaches West Offshore within the municipal waters of Cavite City, Noveleta and Rosario, Province of Cavite)

PROJECT DESCRIPTION SUMMARY

For

Scoping

AVALAR MINING CORP

One Esplanade Seaside Blvd. corner JW Diokno Blvd., MOA Complex, CBP-1A, Zone 10 Brgy. 76, Pasay City, Metro Manila, Philippines

I. PROOF OF CONDUCT OF IEC

PRE-SCOPING STAGE OF IEC

Avalar Mining Corporation's Information, Education & Communication (IEC) documentation report is being presented in this Project Description Report (PDR) for Scoping in a participative and consultative method to carry out awareness for all the stakeholders in relation to the direct and indirect impacts of the proposed operation of our seabed and dredging project.

The EIA Team of Avalarwere able to identify target audiences, various stakeholders were identified, to convey their messages, issues and concerns by using effective IEC tools and strategies. It is significant to note the consequences of this project to the local-folks, thereby empowering the public to participate in environmental baselining in the formulation of this community development strategy.

Multi-sector groups in the province of Cavite and the profile of dredging activity and seabed quarry process are considered paramount variables as basis of these study, taking into consideration the dredging site, its location, affected community and the participation of the people through conduct of interviews and surveys by adopting both the Social Impact Assessment (SIA) and Participatory Rapid Appraisal (PRA) methods of study.

It is explicitly provided under the DENR-RPM DAO 2003-03 that; at the earliest stage of EIA Process, the conduct of IEC activities is based on a timely, well-informed public participation of potentially affected communities thereby identifying stakeholders in both direct and indirect impact areas need to be informed and consulted with, on these project proposal of Avalar.

During this pre-EIA study,the direct primary stakeholders of the proposed project shall be covered at the minimum by the project's social preparations/IEC and shall comprise the reference or coverage of socio-economic perception surveys.

Focus Group Discussions (FGDs) conducted by Avalar EIA Team on February, 2020 with business sector during the Pre-Scoping Stage (IEC)

OBJECTIVE

DENR Administrative Order No. 2017-15 entitled "Guidelines on Public Participation uner the Philippine Environmental Impact Statement" states in Section 6, that the objective of this AO is *"to improve and rationalize Public Participation under the Philippine EIS System by incorporating best practice principles and standardizing the procedure and requirements."*

IEC is being conducted in preparation for the public scoping by providing identified stakeholders about the project, the proponent and the scoping process.

METHODOLOGY

Avalarconducted the IEC activity thought the following means

1) Meetings with the traditional leaders
2) Informal dialogues with community members
3) Community meetings with the LGU-Barangays
4) Key Informant interviews was conducted in the community and barangay level
5) Use of appropriate IEC campaign materials and other form of dissemination campaign that includes distribution of leaflets and flyers
6) Visual Information Dissemination- were used to inform, educate and communicate with the people regarding the proposed project
7) Community Relations and information division

A. Perception Survey Activity
B. Key Informant Interviews
C. IEC development and distribution of information materials

STRATEGY

Avalar started its campaign at the community and barangay level through the following strategies;

1) Coastal Barangay visits
2) Briefings & Meetings
3) Production & distribution of campaign materials

Summary List of Pre-Scoping IEC Activities and Issues
Annex 2-4 DENR-RPM 2003-03

LGUs Covered by IEC	Actual IEC Schedule/Dates	Issues Raised/Suggestions Provided	Proponent's Response
Barangays & Municipalities within the Impact Areas	February 16, 2020	Marine damage Seabed disturbance	Pls. see under issues & concerns

**LGUs are required to be covered by EIC at the pre-scoping stage as a requirement for preliminary identification of sectoral stakeholders who shall be invited to attend the Public Scoping Proper*

Affected Coastal Barangays in the Project Area

CITY/MUNICIPALITY	BARANGAY	BRGY. CAPTAIN
Cavite City	Barangay 8 (Manuel S. Rojas)	ROGELIO M. QUIZOL SR
	Barangay 11 (Lawin)	ROEL C. BELLA
	Barangay 13 (Aguila)	ADORA M. MENDOZA
	Barangay 14 (Loro)	EDUARDO M. VIDAL
	Barangay 29 (Lao-lao/Aries)	SAMMY H. BUENAVENTURA
	Barangay 29-A (Lao-lao A/Aries	ARACELI A. SESE
	Barangay 30 (Bid-bid)	OLIVER C. ARAGA
	Barangay 36 (Sap-Sap)	ROMMELITO P. RIEL
	Barangay 36-A (Sap-sap A)	EFREN N. ENRIQUEZ
	Barangay 37(Cadena de	ROBERTO V. BERNAL
	Barangay 37-A (Cadena de Amor	ROOFERT C. FERNANDEZ
	Barangay 48 (Narra)	ARIEL DC. PAGKALINAWAN
	Barangay 48-A (Narra A)	BAYANI G. JARO
Noveleta	San Rafael 2	NELSON S. ALIX
	San Rafael 3	MELVIN E. TORRES
	San Rafael 4	RUT C. SAMARTINO
Rosario	Bagbag II	DENNIS V. AMOT
	Kanluran	JOMER M. BUMATAYO
	Ligtong I	ABNER B. RICASA
	Ligtong IV	JONATHAN D, CRISOSTOMO
	Muzon I	CONRAD V. ABUTIN
	Muzon II	HENER C. VARGAS
	Sapa II	JOSEPH S. PACIFICO
	Sapa III	SAUDIA D. CANGAS
	Wawa I	RANDY D. LEGASPI
	Wawa II	OLIVER G. ASPA
	Wawa III	ERMER J. PAGKALIWANGAN

SUMMARY OF ISSUES, CONCERNS AND RESPONSES

Below shows a summary of the issues and concerns raised during IEC campaigns by the participants and stakeholder representatives distributed into different categories.

Summary of Issues, Concerns and Recommendations Raised

Category	Issues and Concerns
Project Description	• What type of project will Avalar Mining Corporation be implemented in the area? • Does the project have a go-signal from the LGUs? If so, when will the project start?
Other Projects	• Do you have environmental programs? • What are the mitigating measures to be done by the proponent?
Project Impacts	• What effect on the marine life can be expected if the output of the sea water desulfurizer is released back to the ocean • There should be a regular check-up on the environment for all the barangays; especially since air pollutants travel beyond administrative borders. • Are the mitigating measures for hazards, considering climate change? • What can be the expected effects of the project to the fisherman?
Training and Livelihood	• What livelihood can be provided to senior fishermen and senior citizens? • What types of livelihood can the company offer for the senior citizens so that we can benefit from the project as well? The government support for the senior citizens is insufficient. They are in need of maintenance medicines and medical consultations. • The graduates of the scholarships should then be prioritized when it comes to hiring.

II. Initial Perception Report

With this new project, **Proposed Seabed Dredging & Quarrying of Avalar Mining Corporation located in Philippine West Coast traversing the Municipalities of Rosario and Noveleta, and** City of Cavite, a community survey was conducted to the affected communities on 16 February 2020 to 18 February 2020 with satisfactory rating as follows:

Table 1. Community survey satisfactory rating (2020)

Municipality	Satisfactory rating (%)
Cavite City	89.2
Noveleta	95.8
Rosario	98.0

To determined community's perception on the project, an initial perception survey was conducted in three (3) different municipalities as mentioned. The survey was conducted from 16 February 2020 to 18 February 2020.

The survey was conducted particularly along the impacted coastal barangays of the three municipalities exercising jurisdiction over the project. A total of 80 respondents were surveyed with 90% of the total respondents are residents of the barangays living along the shore.

Figure 1

Project Awareness

Table 2. Awareness of Project's Operation

	Awareness	Cavite City	Noveleta	Rosario	Count	%
1	Yes	8	3	5	16	100.00
2	No	20	14	18	52	0
	TOTAL	28	17	23	62	100.00

With the meetings and consultations conducted, e.g. focus group discussion, distribution of flyers, and other media tools used in the information dissemination prior to the exploration of the project, all respondents have already been aware on the project's environmental impact. The awareness instilled was made possible prior to the current initial project scoping. In addition, the local residents who are fishermen are the one concerned and know much of the operation of the project, whereas, others were not as they are not directly affected by the operation of the project since such is located offshore.

Other sources of information received by the local residents were from other proponents who had earlier conducted the same survey. Fisher folks expressed concern on the operation of the project in which they perceived that fishing activity would be disturbed.

Table 3. Sources of Information

	Sources	Count
1	Government /Municipal and Barangay Officials	108
2	Community/Relatives	32
3	Avalar Mining Corp.	15
4	Meetings or consultation	27
5	Observation	45
6	Others (previous proponent)	7

LGU officials and the local residents were the usual source of information regarding the project (Table 4). Some of these respondents may have known this information through previous meetings and interviews regarding the implementation of the project located within their territorial boundaries.

Table 4. Source of Information regarding the project

	Sources	Count	%
1	LGUs (Municipal and Barangay Officials)	30	25%
2	Community/Relatives	20	25%
3	Avalar Mining Corp.	4	20%
4	Meeting or consultation	2	15%
5	Observation	0	0%
6	Others (Previous proponent)	20	15%
	TOTAL	76	100.00%

Possible Social and Environmental Effects of the Project

All respondents believe that the proposed project will increase employment opportunities of the local residents. The impacted community members shall be given priority. (Table 6)

Table 5. Positive Social and Environmental Effects of the Project

	Positive Effects	**Cavite City**	**Noveleta**	**Rosario**
1	Increase employment	48	23	41
2	Increase business activity in the areas of the project	76	54	58
3	Progress in LGUs	32	21	40
4	Improved	25	13	8
5	No positive effect	4	2	1

PROJECT DESCRIPTION FOR SCOPING

1.1 Project Information

1.1.1 Name of Project	**The Proposed Seabed Dredging & Quarrying Project of Avalar Mining Corporation**
1.1.2 Location	Philippine Luzon West Coast (Manila Bay approaches West Offshore of Cavite City, Noveleta and Rosario, Province of Cavite)
1.1.3 Nature of Project	**Seabed Quarry and Dredging Project**
1.1.4 Project Size (Phase 1)	4,810 Hectares
1.1.5 Contact Nos./& Contact Persons	Company -+632 6214593/ +632 6252263 Elvin B. De Leon - 0930-3600017 Julie Rose G. De Guzman – 0995-1833203 Julius Rey De Guzman – 0945-4257302
1.1.6 Email Address	edeleon@avalarminingcorp.com envicompliance@yahoo.com
1.1.7 Project Description/ Background & Nature of Project	**Avalar Mining Corporation's** project is the proposed seabed dredging and quarry activity along Luzon-West covering Municipalities of **Noveleta, Rosario** and **Cavite City**, all located in the **Province of Cavite.** The Contractor's primary mineral to be dredged and extracted are marine aggregate resource consisting of sand materials with minor amounts of gravel and silt that are suitable to use as dredge fill material. This offshore dredging activity covers 4,810 hectares**.** Dredging is a process whereby large quantities of submerged soil or rock are excavated and removed, and it is inherent in the very nature of such operations that they are likely to give rise to various types of environmental damage. This **EIS (Environmental Impact Statement**) Report of the proponent, offers guidance on the EIA process, the engineering and its environmental aspect of projects involving this dredging and maintenance dredging. It is a guidance that is intended to eliminate or mitigate the potentially harmful impacts that dredging works can have upon the coastal and the estuarine environment. This article presents good practices of dredging control and management in this kind of industry to

	ensure the adequate technical, financial and environmental control of the works, and helping to reduce waste resources and minimizing risks. Project description of this project entails the best practice for planning of seabed quarry and dredging works. The success of a dredging work depends initially on good planning and this is only possible if it is supported by appropriate contracts to the complexity, deadlines and resources involved in the work, as well as a detailed design that should be contains at least the following information: • Areas to be dredged; • Volume to be excavated; • Depths to be reached; • Horizontal and vertical tolerances to be adopted; • Disposal site for the dredged material; • Equipment's to be used; • Productivity to be obtained; • Works schedule; • Costs estimated; • Environmental constraints such as sedimentation rates, hydrodynamic conditions, sediment characteristics, presence of rocks or obstacles, proximity to sensitive environments such as corals, etc.
1.1.8 Manpower	Total of 108 workforce consisting of officers & crew members of dredging ships, support staff & the management, monitoring & control of dredging operations

Table 1- Summary Details on the Basic Information of the Proposed Project

1.2 Proponent Profile

1.2.1 Proponent's Name	**Avalar Mining Corporation**
1.2.2 Proponent's Address	One Esplanade Seaside Blvd., corner JW Diokno Blvd., MOA Complex, CBP-1A, Zone 10 Brgy. 76, Pasay City, Metro Manila, Philippines
1.2.3 Authorized Signatory/ Authorized Represenative	Frederick Domingo L. Borromeo (General Manager/ Operations Manager) Elvin B. De Leon, Geologist (Company's Pollution Control Officer)

to apply for ECC	Julie Rose G. De Guzman (Environmental Consultant/Preparer for the proponent)
1.2.4 Contact Details	Tel No. : +632 6214593 Cp. No. : 0998-414-1613/0930-360-0017 Email : edeleon@avalarminingcorp.com envicompliance@yahoo.com

Table 2- Company's Name and Details

1.3 Project Details

SUMMARY of PROJECT DETAILS			
1	**Area**	4,810 Hectares	
Project Brief	**Commodity**	primary mineral to be dredged and extracted are marine aggregate resource consisting of sand materials with minor amounts of gravel and silt that are suitable to use as dredgefill material	
	Main Activity	***Seabed Dredging & Quarrying Project*** *sand materials to be excavated or seafloor materials, marine sand and aggregates in particular, will be used as filling materials for its reclamation area	
	Estimated Daily Production of dredge materials	69,600 cu.meter or 112,056 metric tons	
	Annual Production of dredge materials	23,664,000 cu. meter	
	Type of Waste	Marine Mud, Silt & Clay	
	Identified Sediment Layers	Unit 1	**Marine Mud(4m to 8m below seabed)** *Unsuitable fill/reclamation materials (Waste)* 159 million cubic meters
		Unit 2	**Marine Sand (4m to 30m below seabed)** *Suitable Fill/reclamation materials* 188 million cubic meters
		Total	347 million cubic meters of dredging materials
	Indicative Project Cost	Total	**Php 2,597,625,360.0 or US$ 50,933,830.58**

cription of this project entails the best practice for planning of seabed dredging and quarrying works. The success of a dredging work depends initially on good planning and this is only possible if it is supported by appropriate contracts to the complexity, deadlines and resources involved in the work, as well as a detailed design that should be contains at least the following information:

• Areas to be dredged;
• Volume to be excavated;
• Depths to be reached;
• Horizontal and vertical tolerances to be adopted;
• Disposal site for the dredged material;
• Equipment's to be used;
• Productivity to be obtained;
• Works schedule;
• Costs estimated;
• Environmental constraints such as sedimentation rates, hydrodynamic conditions, sediment characteristics, presence of rocks or obstacles, proximity to sensitive environments such as corals, etc.

All detailed description and its environmental impacts of our proposed project were discussed under our EIS (Environmental Impact Statement) Report, which is a documentation of environmental impacts and the effectiveness of our environmental measures for critical projects as provided in the Revised Procedural Manual of DENR. Hence, this PDSis being submitted by the proponent to the Department of Environment and Natural Resources-Environmental Management Bureau(DENR-EMB) for its review for the purpose of issuance of an Environmental Compliance Certificate (ECC), which serves as an initial reference summary for the purpose of scoping. **TheProposed Avalar Seabed and Quarry Project** is considered as Critical Project by Article II, Section 1 of DENR Administrative Order No. 96-37, as amended by DENR Administrative Order No. 2003-30. The initial step for the application of our ECC is the submission of this Project Description as stated in DAO 2017-15.

Proponent's **(Avalar Mining Corporation)**seabed dredging and quarrying operations will be located at the ***Philippine Luzon West Coast - Manila Bay approaching and traversing along the areas of West Offshore within the municipal waters of Cavite City, Noveleta, and Rosario, all Province of Cavite.***

The preparation of this Report for the **Proposed Seabed Dredging and Quarrying Project** was undertaken in close coordination with DENR and all reports followed the format prescribed by the Revised Procedural Manual for DENR-Administrative Order No. 2003-30.The Revised Procedural Manual for DAO 2003-30 provides a clear direction on the preparation of the appropriate EIS Report for any development endeavor that will cause any disturbance on the environment. The document is practically our road map to ensure that our EIS document preparers are able to produce a useful and significant report.

Apart from this project's main activity in excavation of sand materials or seafloor materials, marine sand and aggregates in particular that will be used as filling materials for its reclamation area, there are positive impacts and benefits also of this project. Hence, **Avalar Mining Corporation's** purpose is not only for commercial operation. Hence, the environmental objective are as follows;

1) Dredging and disposal at sea of over two million cubic meters area to be dredged, in particular the Manila Bay area for the purpose of clean-up operation and rehabilitation.

2) Dredging to restore the original water depths in the turning area in front of the refinery dock, where decades of siltation have significantly reduced the available berthing depth.

3) This project of the proponent aims to carry out dredging activities in the coastal area to create or improve navigable waterways, to restore the depths of waterways that have become silted for a long period of time, or to recover submerged material for beneficial use.

For contingency clean-up activities, environmental enhancement measures, damage prevention programs and social equity measures (e.g. livelihood, social development programs) including the necessary IEC and capability building activities, public scoping and related to the project will be implemented under DENR-DAO 2015-17.

2.2 Project Location & Area

Operative principle of seabed dredging and quarrying industry and its focal point of study of the proposed project **of Avalar Mining Corporation** will be situated at the ***Philippine Luzon West Coast - Manila Bay approaching and traversing along the areas of West Offshore within the municipal waters of Cavite City, Noveleta, and Rosario, all Province of Cavite.*** Cavite is located in the southern shores of Manila Bay in the Calabarzon Region and it is situated 21 kilometers (13mi) southwest of Metro Manila.

The seabed dredging and quarrying project will cover an area of about 4,810 hectares and it is approximately centered on geographic coordinates East longitude 120º 50' 00" and North latitude 14º 29' 00".

The geographic coordinates of its boundary corners are presented in **Table 4** and the project location map is shown in **Figure 1.**

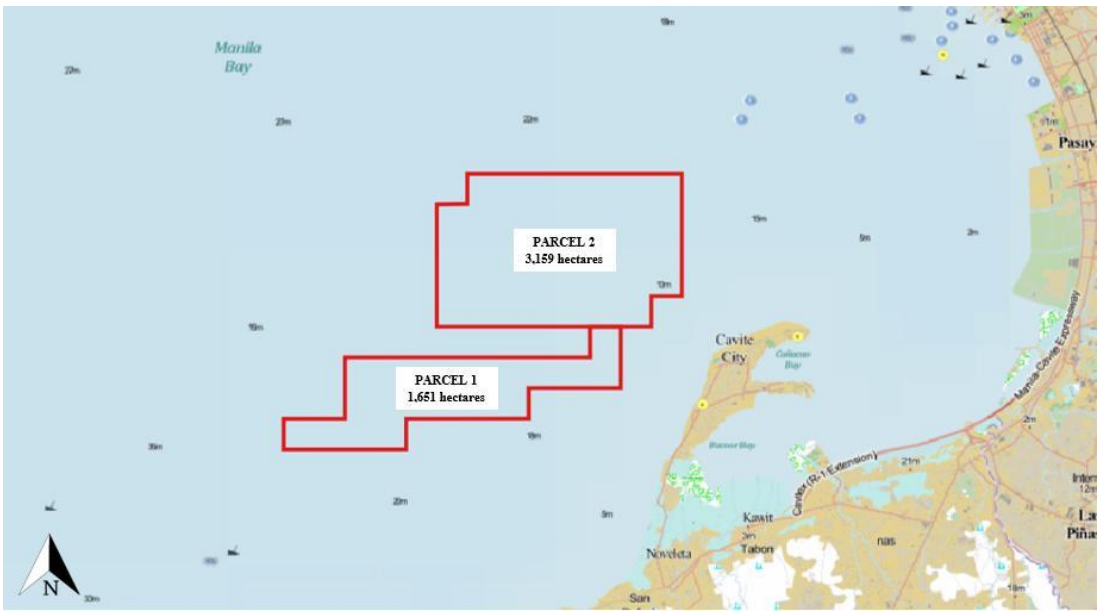
Illustrated in the next succeeding pages are; 1**) Figure 2-** Location Map of the Proposed project area 2)**Figure 2**- Map of Province of Cavite 3)**Figure 3-** Satellite image of Manila Bay and 4)**Figure 4-** Map Showing Project Site of Proposed Dredging and Seabed Quarry Project and 5)**Figure 5**- Impact barangays and towns of Province of Cavite.

Parcel 1		
Coordinate System: Luzon Datum		
POINT	Eastings	Northings
1	14° 28' 00"	120° 46' 30"
2	14° 28' 30"	120° 46' 30"
3	14° 28' 30"	120° 47' 30"
4	14° 29' 30"	120° 47' 30"
5	14° 29' 30"	120° 51' 30"
6	14° 30' 00"	120° 51' 30"
7	14° 30' 00"	120° 52' 00"
8	14° 29' 00"	120° 52' 00"
9	14° 29' 00"	120° 50' 30"
10	14° 28' 30"	120° 50' 30"
11	14° 28' 30"	120° 48' 30"
12	14° 28' 00"	120° 48' 30"
AREA	**1,651 Hectares**	

Parcel 2		
Coordinate System: Luzon Datum		
POINT	Eastings	Northings
1	120° 49' 00"	14° 30' 00"
2	120° 49' 00"	14° 32' 00"
3	120° 49' 30"	14° 32' 00"
4	120° 49' 30"	14° 32' 30"
5	120° 53' 00"	14° 32' 30"
6	120° 53' 00"	14° 30' 30"
7	120° 52' 30"	14° 30' 30"
8	120° 52' 30"	14° 30' 00"
AREA	**3,159 Hectares**	

Table 4- Boundary Coordinates of Project Area

Figure 1. Location of Project Area (GSQP)



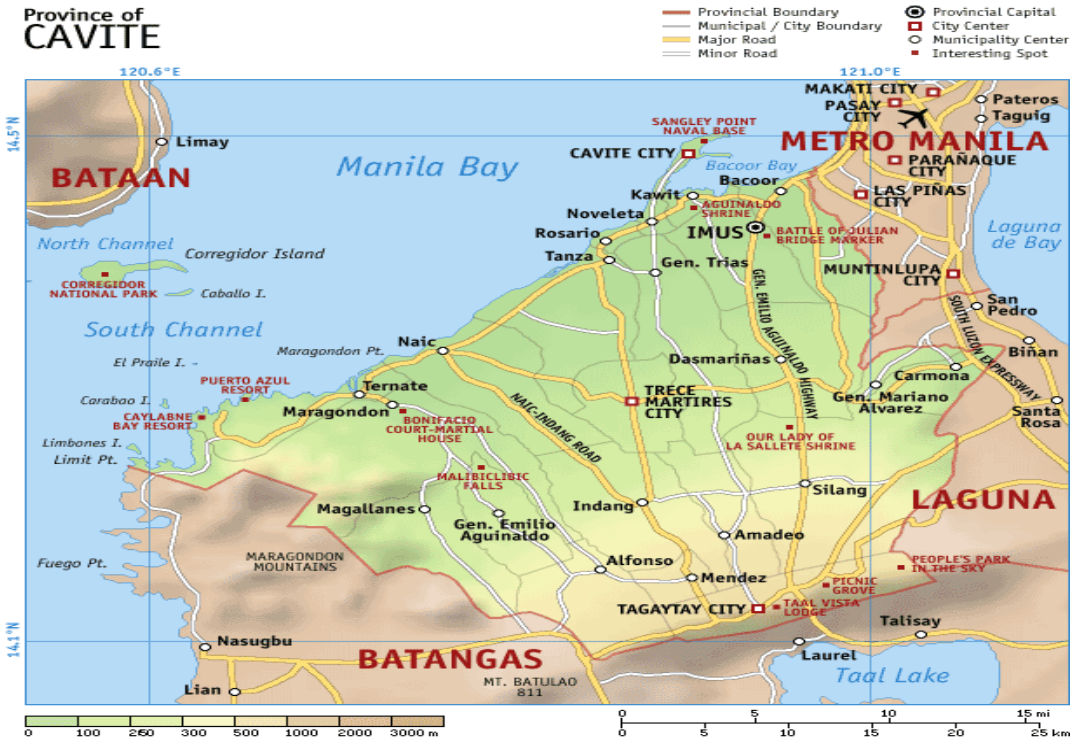


Figure 2- Map of Province of Cavite

Figure 3- Satellite image of Manila Bay

2.2.1 Project Impact Areas

MUNICIPALITY	BARANGAY
Cavite City	Barangay 8 (Manuel S. Rojas)
	Barangay 11 (Lawin)
	Barangay 13 (Aguila)
	Barangay 14 (Loro)
	Barangay 29-M (Lao-lao/Aries)
	Barangay 29-A (Lao-lao A/Aries
	Barangay 30 (Bid-bid)
	Barangay 36-M (Sap-Sap)
	Barangay 36-A (Sap-sap A)
	Barangay 37-M (Cadena de Amor)
	Barangay 37-A (Cadena de Amor A)
	Barangay 48-M (Narra)
	Barangay 48-A (Narra A)
Noveleta	San Rafael 2
	San Rafael 3
	San Rafael 4
Rosario	Bagbag II
	Kanluran
	Ligtong I
	Ligtong IV
	Muzon I
	Muzon II
	Sapa II
	Sapa III
	Wawa I
	Wawa II

Table 5- Affected Impact Coastal Barangays in the Project Area

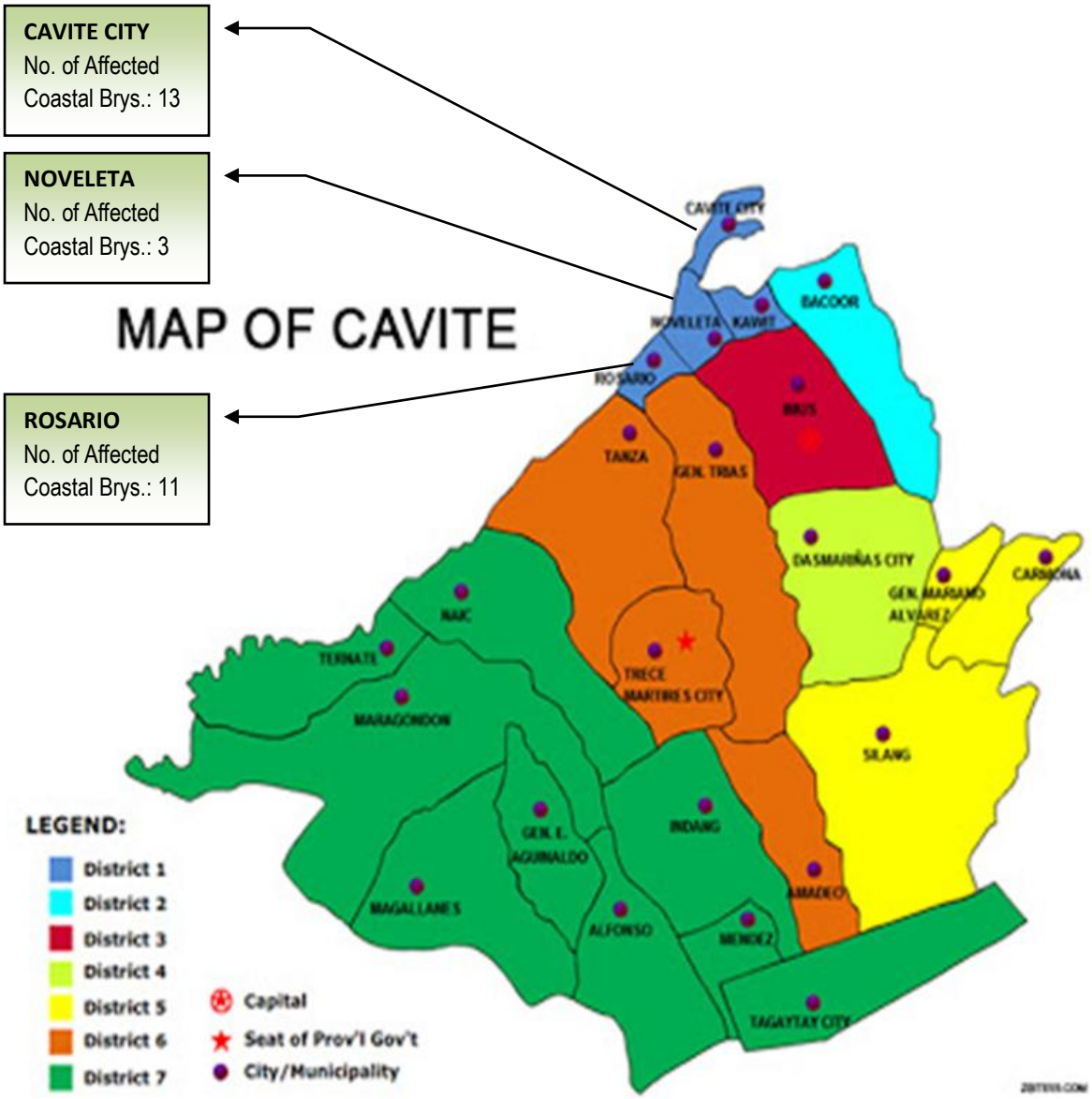


Figure 4- Locational Map of Impact Areas

2.2.2 Water and Dredge Depht

Seabed Dredging and Quarrying Project

Area	-	1,651 Hectares
Water Depth	-	15m to 29m below sea level
Dredge Depth	-	30m below seabed (Maximum)

2.2.3Identified Sediment Layers

Unit 1---------- Marine Mud (4m to 8m below seabed)

- Unsuitable fill/ reclamation materials (Waste)
- 159 million cubic meters

Unit 2---------- Marine Sand (4m to 30m below seabed)

- Suitable fill/ reclamation materials
- 188 million cubic meters

Total---------- 347 million cubic meters of dredging materials

2.2.4 Project Description & Details based on Sketch Plan of the Proposed Dredging Project

Methods & Parameters used	Description
Positions	Position on this chart differ from those on Luzon (1911) Datum chart of this area by varying amounts: positions should be transferred by bearing and distance from common charted objects, not by latitude.
Satellite-Derived Positions & Chart Accuracy	Positions obtained from satellite navigation systems, such as GPS, area normally referred to WGS84 Datum. Such positions can be plotted directly on this chart. However, due to the age and quality of some of the source information, such position may be more accurate than the charted detail.
Depths	Many areas of this chart have not been surveyed to modern standards. Depths over banks, reefs and shoals may be less than the indicated. Uncharted shoals and patches of corals may exist.
Vessel Traffic Service	Guidelines implementing the Vessel Traffic Management System at the Port District of Manila is covered by Philippine Ports Authority Administrative Order No. 03-2006
Submarine Cables and pipelines	Mariners are advised not to anchor or trawl in the vicinity of submarine cables and pipelines or they risk prosecution if they so damage it.
Restricted Areas (14`23'N,120`35'E &14'23'N,120`36'E)	The Restricted areas have been declared national Defense Zones by the Philippine Government. Vessels should not approach the islands closer than 1 mile except for those transiting the traffic separation schemes or their approaches. Such vessels shall not stop, anchor or lay to without authorization from the armed forces of the Philippines. Passage between La Monja I. (14`22.5'N,120`31.3'N) and Corregidor I. (14`23.0'N,120`35.0'E) is prohibited.

Table 7- Description based on Sketchplan of the Project Philippine Luzon West Coast (Manila Bay Approaches)

2.3 Project Rationale

2.3.1 Project Need at the National Level

One of our company's vision relative to our Proposed Seabed and Dredging Project, is to contribute to the national economy of our country. Since national taxation is the "lifeblood" of country's economy, it will greatly contribute to economic growth and it will foster sustained development in the Philippines.

The contribution of dredging industry to sustainable development shall be maintained in order to realize the true value of positive economic consequences and growth, with a cost-benefit. But it's particularly relevant in this time of dramatic change in the world's development industry. Growing demand and increasingly complex operating environments are making the delivery of economic progress is one of the biggest challenges of today.

2.3.2 Project Need at the Regional and Local Level

Across the region of Cavite and particularly the Local Municipalities of Noveleta, Rosario and Cavite City, there exist models for sustainable development. First, is business investment.Second, building a local work force.Third, enabling local supply chains. Fourth, investing in the community, and fifth, supporting policies that promote economic growth and a stable environment.

The impact areas of this project in the province of Cavite creates an economic benefits for the local economy since dredging is significant to our social and economic development. In truth, the construction industry also largely depends on dredging activities for the supply of sand and gravel.

2.3.3 Project Benefits

This dredging industry investment promotes the leveraged into the creation of a trained and skilled workforce. Leveraging core investment to create jobs in local markets in the coastal municipalities of Noveleta, Rosario and Cavite City. It has a powerful multiplier effect throughout the local economy, as well as providing companies with a committed workforce.

In summary, robust business investment, local jobs and local content, and community development – are fundamental components of sustainable economic growth.

2.4 Project Alternatives

2.4.1 Site Selection

The proponent and the contractor conducted a thorough selection of the location of the said project. Since site selection is the process of examining multiple options and assessing their relative advantages and disadvantages, it conducted a feasibility study on the area.

Thus, it created a Site Selection Team.

The site selection process of the proponent involves the following interrelated tasks:

- Assemble an experienced site selection team. It should be a sub-team with representation from the project development team.

- Review site selection criteria, identify a site, and devise a plan for your project.

With multiple site options, **Avalar Mining Corporation** can rank project priorities — e.g., cost, location, and size. Analyzing alternative site plans allows the company to compare costs and design features in a practical rather than abstract way. The site selection team may find a site that is not ideal, but with a creative design plan can meet our requirements. By contrast, it may conclude that no redesign can overcome a site's inherent deficiencies.

2.4.2 Development of Monitoring Program

As embodied in our GSQP (Government Seabed Quarry Permit) application and also for our application of our ECC, provisions for environmental protection and monitoring plans were formulated as guidelines in minimizing environmental impacts of our project has been considered, for example, our erosion and sediment control plan (ESC) consisting of three parts as follows;

1. Description:

• Existing conditions and the proposed dredging activities, site conditions (soils, topography, vegetation, property lines, buildings, etc.), and adjacent protected natural resources (i.e. coastal sand dune systems, coastal wetlands, significant wildlife habitat, fragile mountain areas, freshwater wetlands, community public water system primary protection areas, great ponds, and rivers, streams or brooks).

• Areas that are subject to serious erosion problems.
• Measures that will be used to control erosion and sedimentation, where they will be installed and when needed.
• Construction schedule and planned inspections with frequency and required maintenance.

2. Site Plans:

• Topographic land contours and drainage before and after construction.
• The limits of vegetation clearing and grading.
• Any vegetated buffers that should be protected.

• Sensitive areas within 100 feet of the site (streams, lakes, wetlands or areas sensitive to erosion).
• Drainage swales, ditches, roads, and stormwater control structures.
• The location and types of ESC measures.

3. Construction Details:

• Plans and specifications of ESC structures.
• Amount, type, and installation details for seeding, mulching and other vegetative specifications.
• All pertinent maintenance instructions.

2.4.3 Technology Selection

Primarily, the proponent employ mining method by using **Trailing Suction Hopper Dredger** (TSHD) used to collect the sediments in the seabed such as mud, silt, sand and gravel.

Technologies used during the exploration activities in the area comprises of high resolution seismic reflection survey, bathymetric profiling and offshore drilling.

2.4.4 Summary of Environmental Assessment of the Site

As a result of marine Geophysical Survey and Geological Assessment of **Avalar MiningCorporation** for the purpose of assessment of the project site, led to dileanation of marine aggregate resource for reclamation project covering a total area of 1,651 hectares.

Likewise, the proponent herein shall implement its assessment of the site in consideration of potential effects of seabed quarrying and dredging on the marine environment of its dredging process and disposal process. The dredging site shall undergo biological, physical and chemical impacts since dredged material may cause suspended solids during dredging as a result of substratum disturbance. Dredging may affect the physical environment by changing the bathymetry, current velocity and wave conditions.

In our Environmental Protection and Enhancement Program (EPEP), a report requirement in our GSQP (Government Seabed and Quarry Permit),**Avalar Mining Corporation** provides activities and environmental plans that include rehabilitation of seabed dredging disturbed areas, reforestation, construction and maintenance of environmental facilities, solid waste management, hazardous waste management, air quality monitoring, and preservation of downstream water quality. Thus, risk assessment of the project site is required.

At the time of the operation of the seabed dredging and quarry, **Avalar Mining Corporation** is committed to present Impact Control Strategies, including its mitigation measures. Aspect of soil erosion control, rehabilitation, vegetation of disturbed lands by providing a comprehensive and strategic land, air and noise protection management.

2.5Project Component

2.5.1 Mining and Milling Equipment

2.5.1.1 Mobile and Fixed Equipment for Development and Construction

The establishment of support facilities onshore such as field office, personnel accommodation, warehouse, laboratory, engineering and motor pool facilities will be carried out prior to the start of dredging operations. These facilities shall be established by the dredging contractors to be engaged by the company. The necessary equipment, machineries and apparatus shall be supplied by the contractor.

2.5.1.2 Mobile and Fixed Equipment for Mining

The **Trailing Suction Hopper Dredger (TSHDs)** to be utilized shall be equipped with necessary equipment and appurtenances such as drag heads, suction pipes, swell compensators, pumps, transport tubes, overflow pipes and hopper (storage).

(TSHD) is used to collect the sediments in the seabed such as mud, silt, sand and gravel.

TSHD's various components:

1) Suction tubes & drag head;

2) Pump;

3) Transport tube;

4) Overflow pipe; and

5) Hopper (storage)

2.5.1.3 Mobile and Fixed Equipment for Processing

The dredge fill material will not be subjected to mineral processing.

2.5.1.4 Offshore Drilling Equipment

The contractor used a **drilling rig** with complete accessories and a floating bamboo platform.

The various sediments encountered during the drilling were logged, properly labelled for further laboratory analyses.

The sediments encountered during the drilling program consist of top layer of silty mud overlying older sediment layers including the prograded sediment sequence and fluviatile sediments. The various seismostratigraphic units identified in the seismic records were correlated with the results of drilling. The type of sediments recognized through drilling correlated well with the seismostratigraphic units identified in the seismic reflection profiles.

2.5 Process/Technology Options

2.6.1 Dredging Plan/Description of Mining Method

The mining method to be employed is dredging using suction dredgers. The size and capacity of the dredging vessel shall be determined by the contractor to be engaged. The designed draft of the dredging ship when fully loaded shall be considered taking into account the water depths in the GSQP area ranging from 14 meters near the sandspit to 30 meters further west.

TSHD is designed with two suction tubes equipped with a drag head that are mounted on the sides of the vessel. These are lowered on the seabed and are trailed on the bottom to gather sediments. A pump system onboard the vessel sucks up a mixture of sand, silt, fine gravel and water (slurry) and discharge it to 'hopper' or hold of the ship. Once the capacity of the hopper is reached, the ship then sails to the delivery point and discharges its load of fill materials.

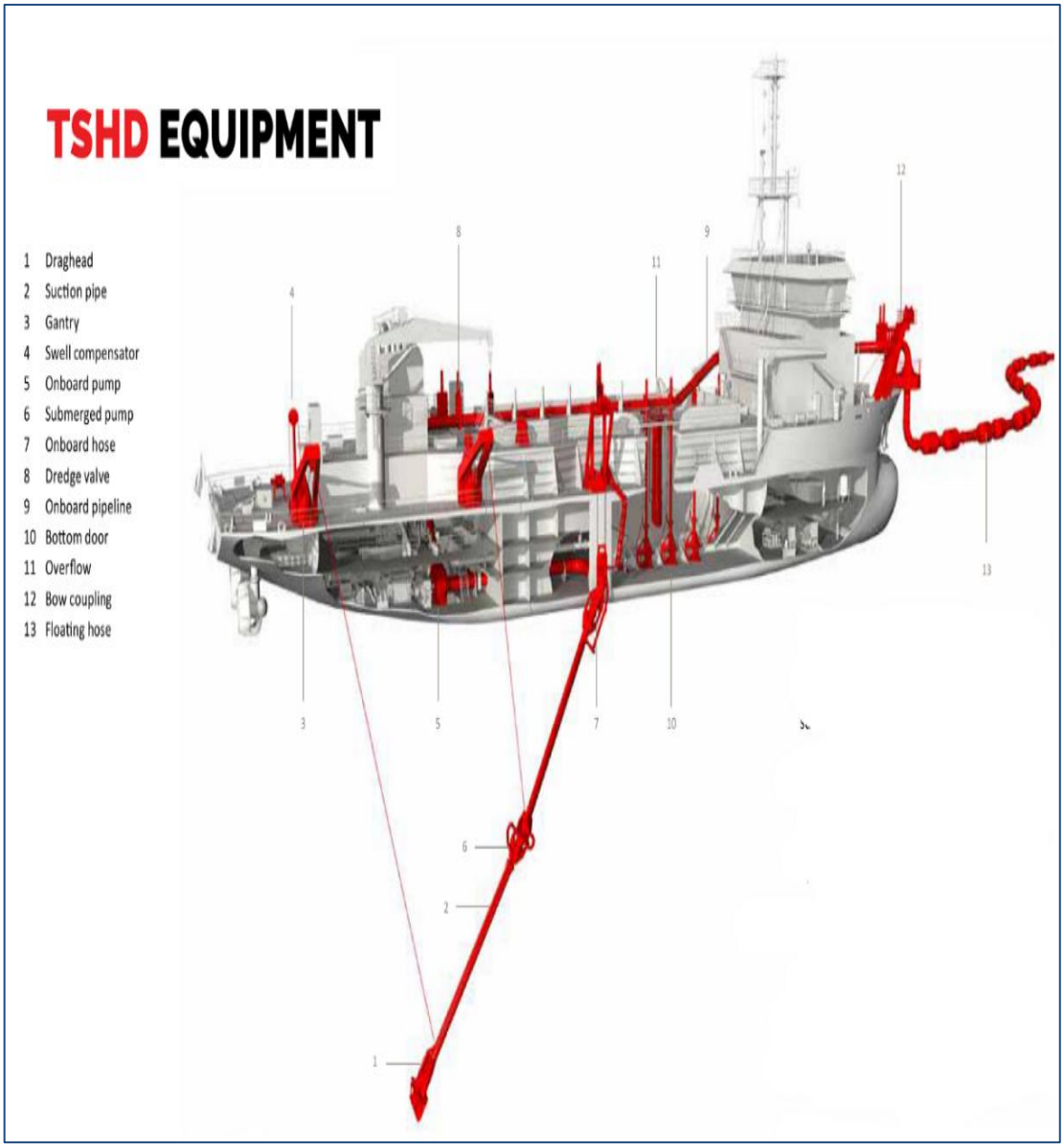


Figure 5- Trailing Suction Hopper Dredger (TSHD) used to collect the sediments in the seabed such as mud, silt, sand and gravel.

Below is the schematic representation of TSHD;

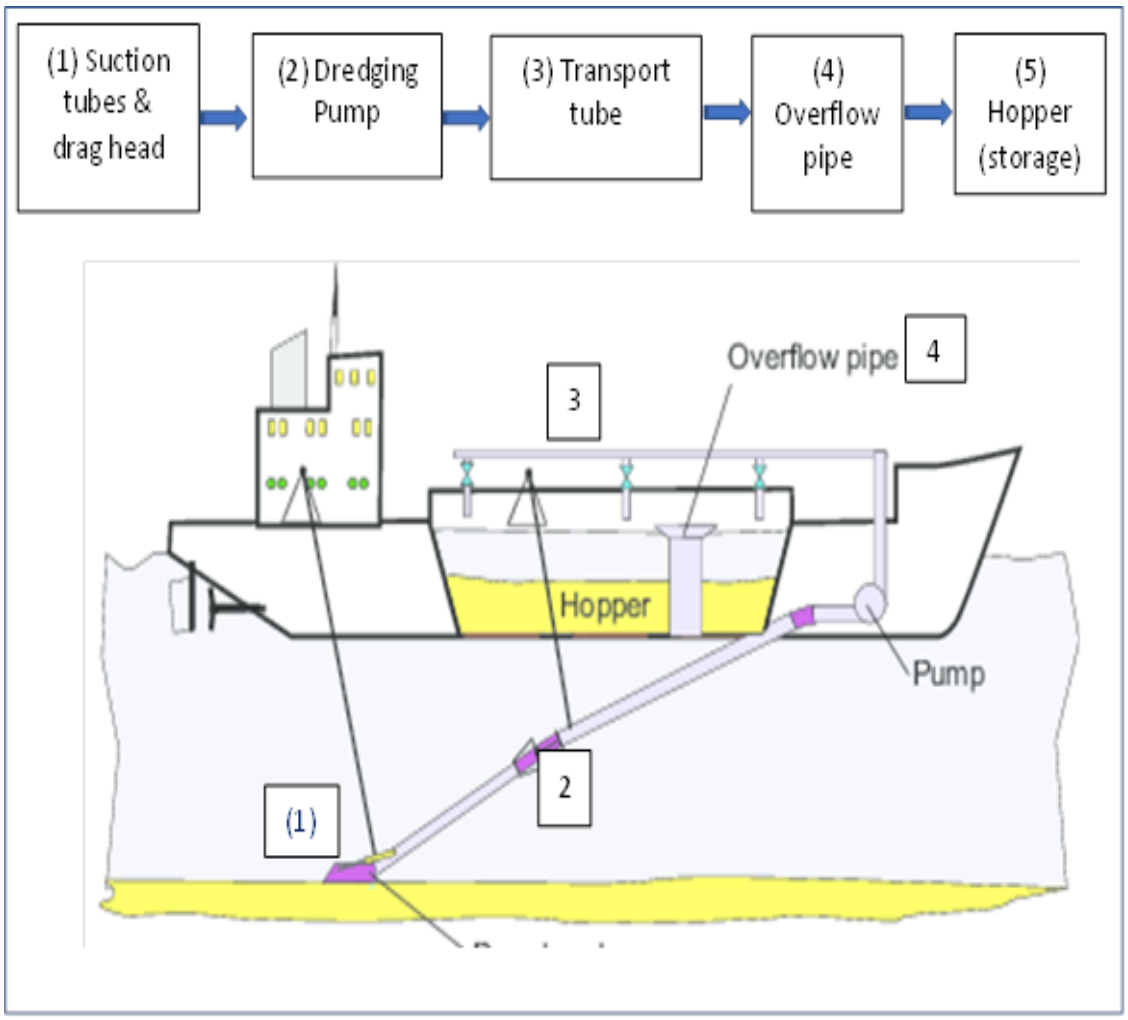


Figure 6- Schematic diagram of TSHD showing its various components: 1) Suction tubes & drag head; 2) Pump; 3) Transport tube; 4) Overflow pipe; and, 5) Hopper (storage)

The slurry contains about 20% solid and 80% water. The overflow mechanism allows the excess water to flow out of the hopper leaving behind the solid components and the water contained in the sand's interstices. Dredging will be a continuous 24-hour per day operation.

The marine sand aggregate is overlain by a layer of silty mud that ranges in thickness of 2 meters to 7 meters thick. This layer of sediment will be dredged and later transported to a re-handling pit or temporary storage in the reclamation area or vicinity. The silty mud shall be used as additional fill material for the area above the sea level.

Considering the depth of the reclamation area ranging from 1 meter to 7 meters, the discharge of the fill materials shall be done using any of the following methods:

- Rainbowing – this method is applied when the TSHDs cannot navigate close enough to the unloading site because of shallow depth. The ship pumps the fill materials into the air through a hose with a nozzle;

- Pipeline – submerged or floating pipes are used to discharge the fill material to unloading point from the TSHDs; and,

- Flat bottom discharge barge – This is applied when the TSHD has a barge discharge capacity. The barge discharges its load by opening the bottom of its hull and let the fill material to flow through the seabed

2.6.2 Dredging Operations

The **Trailing Suction Hopper Dredger (TSHD**) type shall be used in the dredging operations because of its advantage with regard to mobility. The hopper capacity ranges from 11,750 to 46,000 m3. that would allow the vessel to safely navigate and operate even in shallow waters.

Please see additional information on dredging operations under Operation Phase.

2.6.3 Project Size

The project area covering about **1,651 hectares** is situated west of the Cavite sandspit within the municipal waters of Cavite City, Noveleta and Rosario; Province of Cavite. The area is approximately centered on geographic coordinates East longitude 120° 50' 00" and North latitude 14° 29' 00".

2.7 Description of Project Phases

2.7.1 Pre-Dredging Activities

Seabed Quarry & Dredging Activities	Description
Exploration on the Marine Geophysical Survey & Geological Assessment	The data generated during the course of the various stages of the exploration, specifically the high-resolution seismic reflection profiling, bathymetric measurements and geological sampling through offshore drilling was all considered in the estimation of the resource. The seismic reflection data was used in delineating potential targets for drilling and in identifying prospective sand bearing horizons. The sand resource estimation is computed using the conventional polygon method. From selected seismic reflection profiles, the varying thicknesses of unit 2 were measured. The vertical areas were determined by polygon method and their respective volumes are then calculated using area of influence of 200 meters, i.e. 100 meters on each side. In some instances, 400 and 300 meters' influence were used. This was done on occasions where the quality of adjoining seismic sections are blurred or masked by the presence of gas charged sediments.
Additional Exploration drillings	necessary
Bathymetric Survey	A bathymetric survey of the area to be dredged conducted prior to commencement of the dredging works, and regular progress surveys will be conducted during the dredging operations. The frequency of these surveys depends on the progress of works, but will be at least once per week weather permitting. The volume calculation to determine the in-situ volumes disposed at the sea disposal site will be performed by calculating the difference in levels between the pre-dredge survey and the most recent progress survey. Total volumes calculated are to be adjusted to take into account the measured tonnages of competent rock excavated directly using the BHD, and transported onshore by flat top barge. An average agreed bulked density for this rock is to be used to calculate the in-situ volumetric equivalent. The in-situ volumetric equivalent will be deducted from the total volume calculated from the differences in survey levels. The surveys will be conducting using Real Time Kinematic (RTK) GPS for horizontal and vertical control, and multi-beam depth sounding for vertical measurements. Calculations based on the initial bathymetric survey and progress surveys will be provided. The results of bathymetric surveys prior to the commencement of dredging and following completion of dredging in each dredging season will be used to generate plots of the

	changes in depth in the dredged area. Additional reporting, in the format required to facilitate annual reporting to the International Maritime .
Detailed Planning for Dredging	The service provider/contractor provides the engineering plan for dredging
Topographic Survey and site investigation	Conducted by the geologist of the proponent
Procurement of vehicle & equipment	In preparation for dredging and quarry activities to be used
Acquisition of land	Land to be used for facilities to be utilized during the construction of the project
Establishment of field office	Target Sites/Areas The above-mentioned facilities shall be established in Barangay San Antonio within the municipality of Imus, Cavite.
Warehouse & Camp Facilities	For appropriate and proper management and monitoring of the dredging operations to be carried out by contractors, support facilities shall be established on land near the proposed seabed and dredging project area. Among the facilities to be established include the following: - Office facility and site camp; - Warehouse; and, - Laboratory facility with sample storage area
Establishment of laboratory	To be located at the target-site
Acquisition of necessary government permits and licenses	*Present Status of the Project* The **Avalar Mining Corporation** (Avalar) officially filed an exploration permit located (EXPA-139-IVA) west of the Cavite sandspit within the municipal waters of Cavite City, Noveleta and Rosario; Cavite covering a total area of 2,153 hectares. Following the issuance of an Authority to Verify Minerals, dated January 9, 2020, Avalar immediately implemented exploration activities in the area consisting of high-resolution seismic reflection survey, bathymetric profiling and offshore drilling. The encouraging results of the exploration activities led to delineation of marine aggregate resource for reclamation project covering a total area of about 1,651 hectares. Hence, Avalar opted to apply for a Government Seabed Quarry Permit. For our application of our ECC under the jurisdiction of DENR, initial step is the submission of this Project Description of our propose project for evaluation and assessment
Call for tender of bids	For the purpose of selecting qualified bidders as service provider for dredging projects
Selection dredging contractors	Awarding of contract to the service provider/contractor shall be qualified
Engagement of Winning contractors	The winning contractor shall be responsible for the construction of the project until its abandonment, as dictated under the contract agreement between the proponent and the former

Table 8- Summary of Pre-Construction/Pre-Operational Phase of Dredging Project

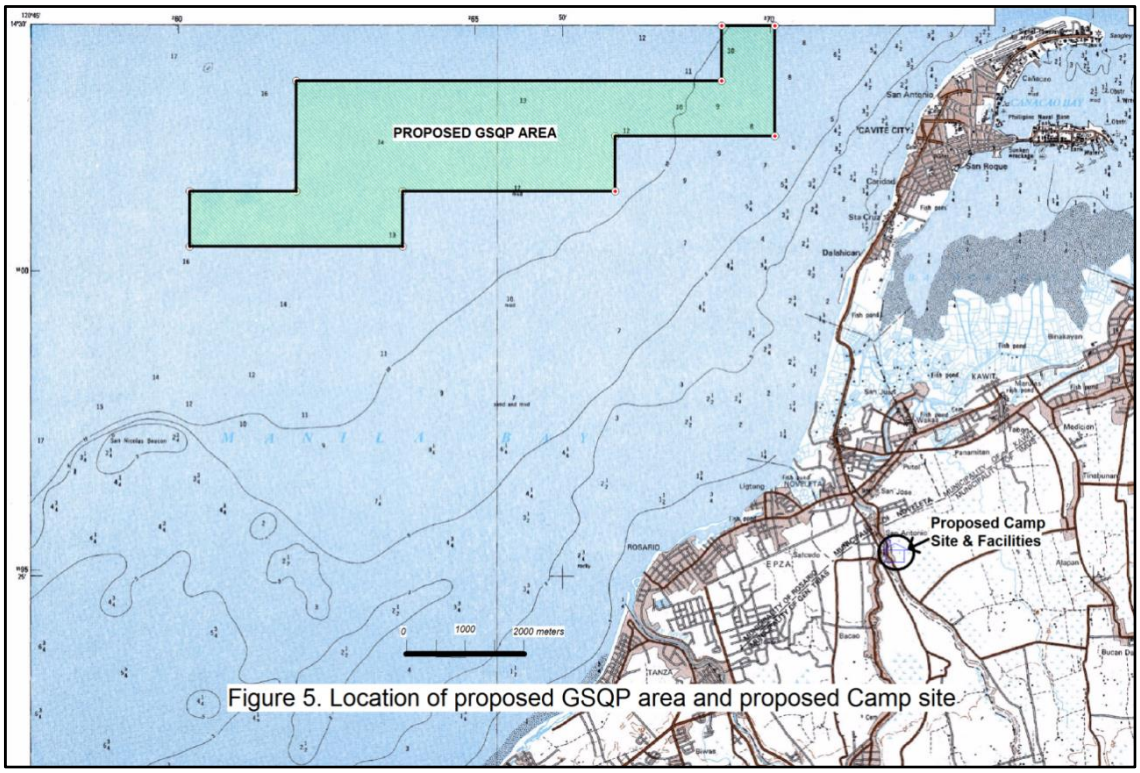


Figure 8- Location of proposed project area and proposed camp site

2.7.2 Marine Geophysical Survey

- Traverse lines were oriented in east-west direction almost perpendicular to the coastline of the Cavite sand spit and spaced at 100 meter interval whereas the tie lines are oriented at nearly north-south direction at 300 meter interval.

- A total of 320.8 km of survey traverses were completed.

- High- resolution seismic reflection profiling and bathymetric measurements were run simultaneously at ship's speed of 4 to 5 knots (i.e. 7.2 to 9 km/hour)

- The survey activities undertaken by Trinav basically consisted of high resolution shallow seismic reflection profiling using Boomer Transducer-Applied acoustics, Bathymetric survey using portable echosounder and navigation instruments.

- The location of marine seismic and bathymetric survey traverses is graphically shown in Figure 9.

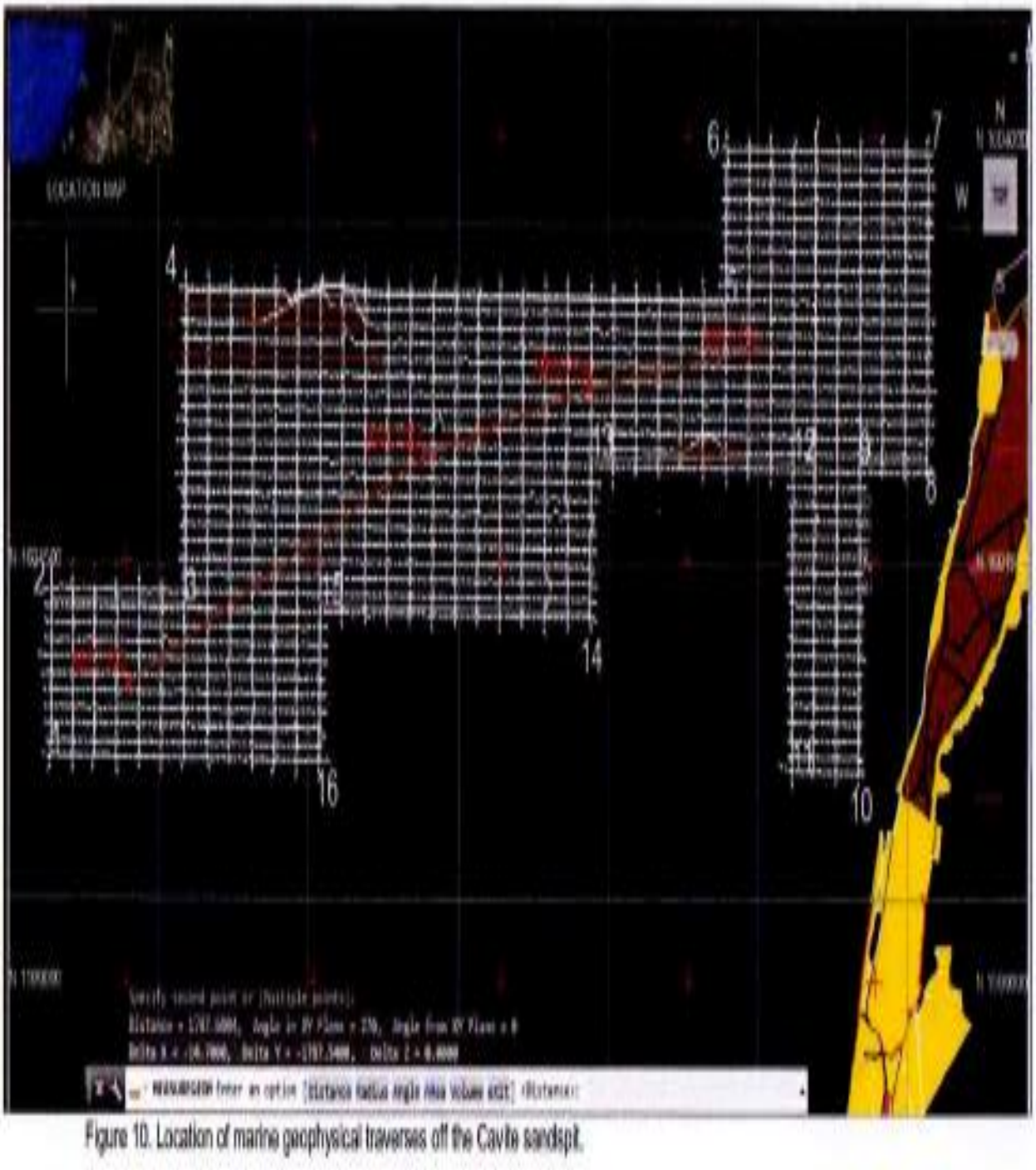


Figure 9- Location of marine geophysical traverses of the Cavite sandpit

- The following equipment and peripherals were utilized during the survey:
    - Seismic Reflection Profiling System
        - Bubble Gun Boomer type sub-bottom profiling system;
        - Low and High frequency filters;
        - Depth Seismic data acquisition and processing system;
        - 20-element hydrophone streamer
    - Digital Echosounder
    - DGPS precise positioning system Hemisphere GPS with omnistar correction

- Sea bottom topographic measurement was continuously carried out using 50-200 KHz precision-type portable echo sounder along a pre-determined traverse grid lines at an average survey speed of about 4 to 5 knots.

- The resulting data was recorded in an onboard laptop computer every one (1) minute interval and precise positioning was made possible with the use of a Differential Global Positioning System (Trimble R3 DGPS Reference Station and Navigator) with sub-meter accuracy.

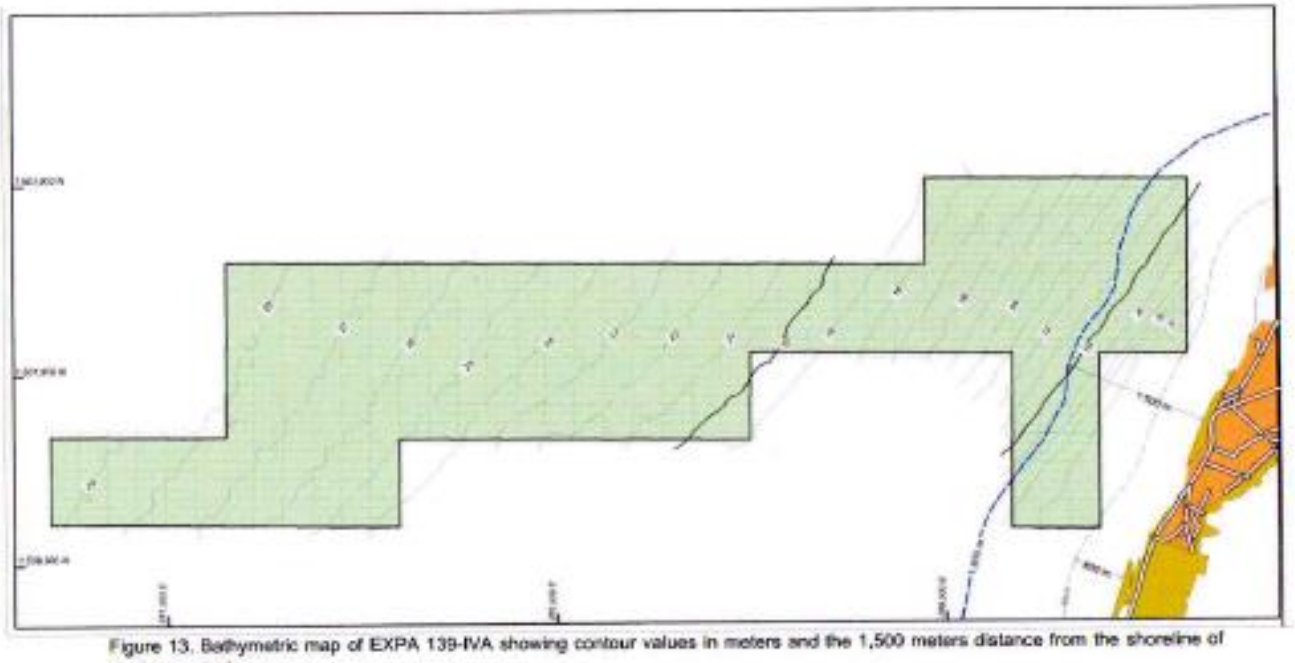


Figure 13. Bathymetric map of EXPA 139-IVA showing contour values in meters and the 1,500 meters distance from the shoreline of Cavite sandspit

Figure 10- Bathymetric Map

2.7.3 Offshore Drilling

- Drilling was undertaken using a bamboo raft as platform with the percussion/rotary type rig mounted at the center of the raft.
- Six (6) drill sites were chosen during the initial field based interpretation of seismic data.
- The sites have about 1.5 to 2 kilometer interval
- Oceaneering Contractors (Philippines) Inc. (OCI) was engaged by the proponent to implement the drilling component of the mineral verification program.
- Standard Penetration Test (SPT) drilling was applied in the drilling program to drill the sediments down to 40 meters depth from the seabed.
- Subsurface sediment samples were gathered at intervals of 2 meters by driving a BW casing sampler. The sampler has a steel shoe with a sharp cutting edge and is equipped with a fabricated ample stopper to prevent loss of samples due to hydrostatic head.

Figure 15. Three different sizes /types of samplers used

Figure 11- Three different size/types of samplers used

(A) Wash Rod Sampler (1m length x 5cm dia.), used in rotary wash boring when the material is compacted and hard to drill.

(B) BW sampler (1m length x 5cm dia.), used in extracting loose and compacted samples

(C) BW sampler (0.5m length x 4cm dia.), used in extracting loose and compacted samples

2.7.4 Results of Survey

2.7.4.1 Seismic Reflection Patterns and Characteristics

- Progradational sediments were also identified in some areas of the tenement that is believed to grade into finer sediments seaward.
- An illustration of a generalized seismo-stratigraphy of nearshore area is provided in Figure below.

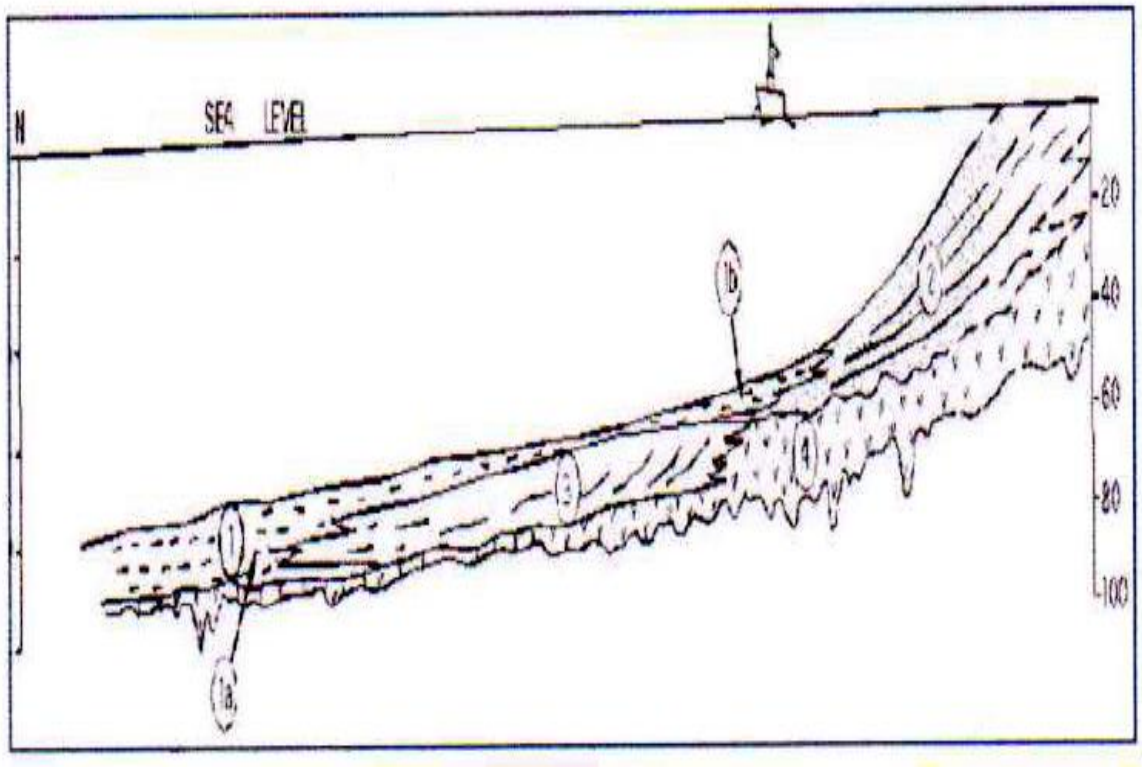


Figure 3-11. Generalized seismo-stratigraphy of near shore areas

The following reflection pattern/characteristics were considered in the assessment of the area:

- Parallel to subparallel reflection pattern – Fine-grained horizontally layered marine sediments consisting mostly of mud and silt *(unit 1)*. This unit is interpreted to be the dominant sediment cover within Manila Bay and has been normally referred to as Holocene mud;

- Oblique to sigmoidal reflection pattern – Prograded sediments consisting chiefly of sand derived from delta building and wave concentrated deposits *(unit 2)*. Toplap termination are more common and clearly indicates almost steady sea level.
- Chaotic reflection characteristics – channel filled sediments deposited in fluvial environment *(unit 3)*; and,

- Irregular and chaotic pattern – *Unit 4* representing the bedrock. This unit is not well identifiable in the seismic profiles**.**

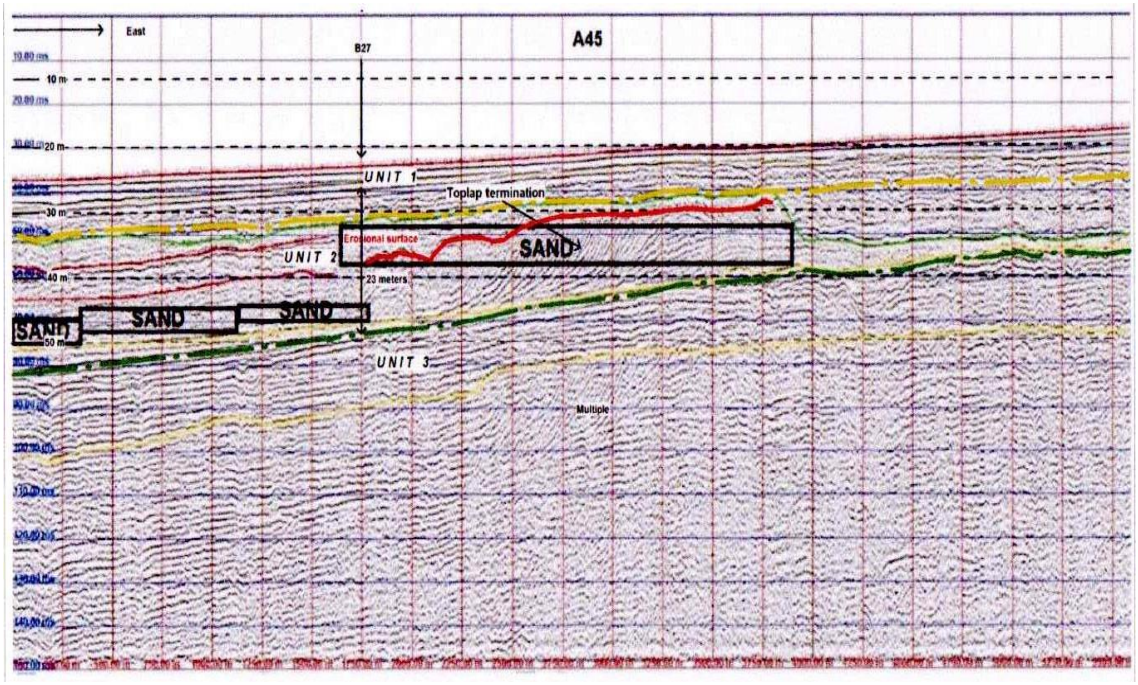


Figure 3-12. East-west line along line A45 showing the various seismo-stratigraphic units 1 to 3 and the prograded sequence showing oblique reflection pattern (downlap termination) with erosional truncations.

- Figure 3-12 presents the seismic profile along line A45 that runs from west to east showing the various seismo-stratigraphic units I to 3 and the prograde sequence that exhibit oblique reflection pattem. The uppermost unit is described as *Unit I and is believed to represent the Holocene mud deposited in Manila Bay and is about 4 to 8 meters in thickness*. Underlying the topmost sequence is Unit 2 believed to consist chiefly of silty fine grained sand on top with prograded sediment sequence derived from delta building when sea level is almost stationary (stillstand) leading to toplap termination sediment sequence along arcuate delta front. Erosional surface can also be noticed on the upper portion of sediment sequence. The thickness of *Unit 2 is measured to be about 15 to 21 meters.*

- The prograded sediments are characterized by inclined beddings that result from the deposition and accumulation of relatively coarse and heavy materials along the shore in a high-energy environment such as those in deltaic environment. The winnowing action of waves and tides bring forth concentration of comparatively heavy sediment grains along the shore and wash away the lighter and often fine grained fractions of sediments. They are also affected by long shore currents which cause deposition of sand parallel to the shoreline. It is characterized by oblique to sigmoidal reflection character and often has a high amplitude signal indicating sharp impedance contrast owing to the high density and sound velocity variations between the sediment types.

  Changes in sea level causes the sediment sequence to be eroded when sea level is lower and buried beneath younger sediment layer during sea level rise.

  High gas content was observed in portions of seismic sections near the Cavite sandspit. This is believed to have been caused by the rotting or decay of vegetation emitting gaseous substances. Acoustic blanking can thus be observed in sections with gas-charged sediments.

  Figures3-13 to 3-17, show seismic profiles of lines A39, B23, A13, A52 and A15.

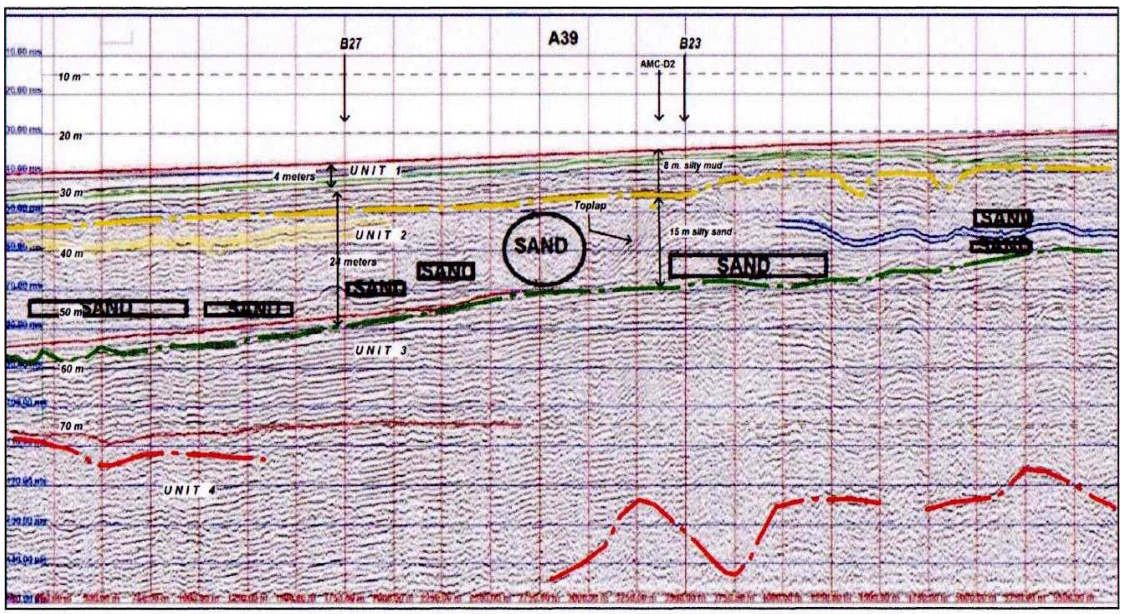


Figure 3-13. Seismic profile A39 showing intersection with tie lines B27 and B23.

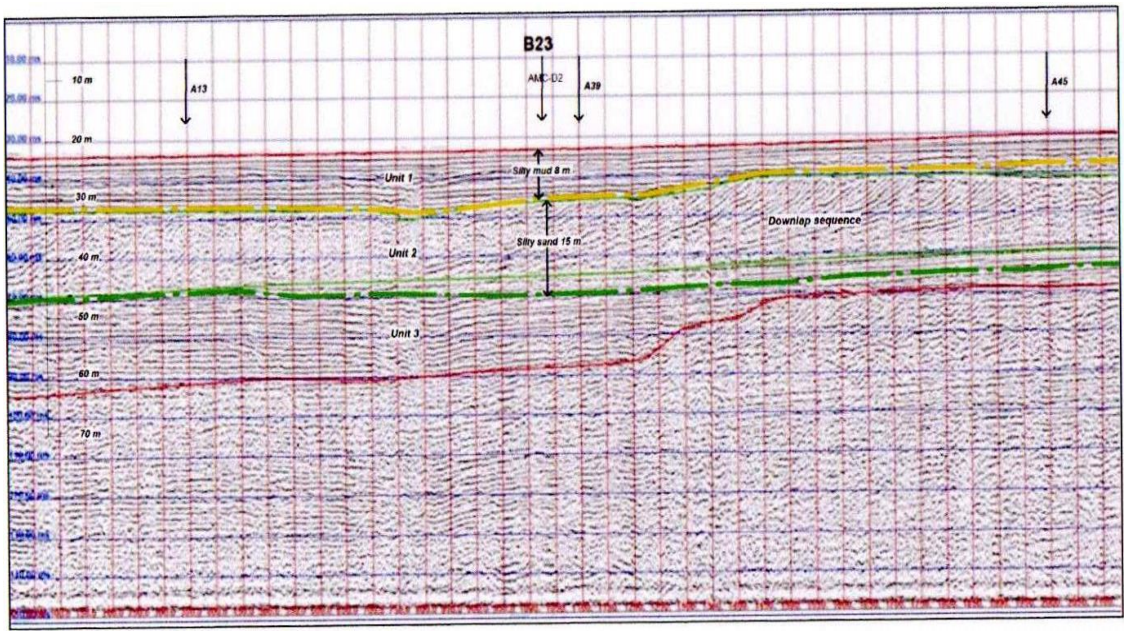


Figure 3-14. Seismic profile along line B23 showing the approximate location of drillholeAMC-D2 and the downlap sequence.

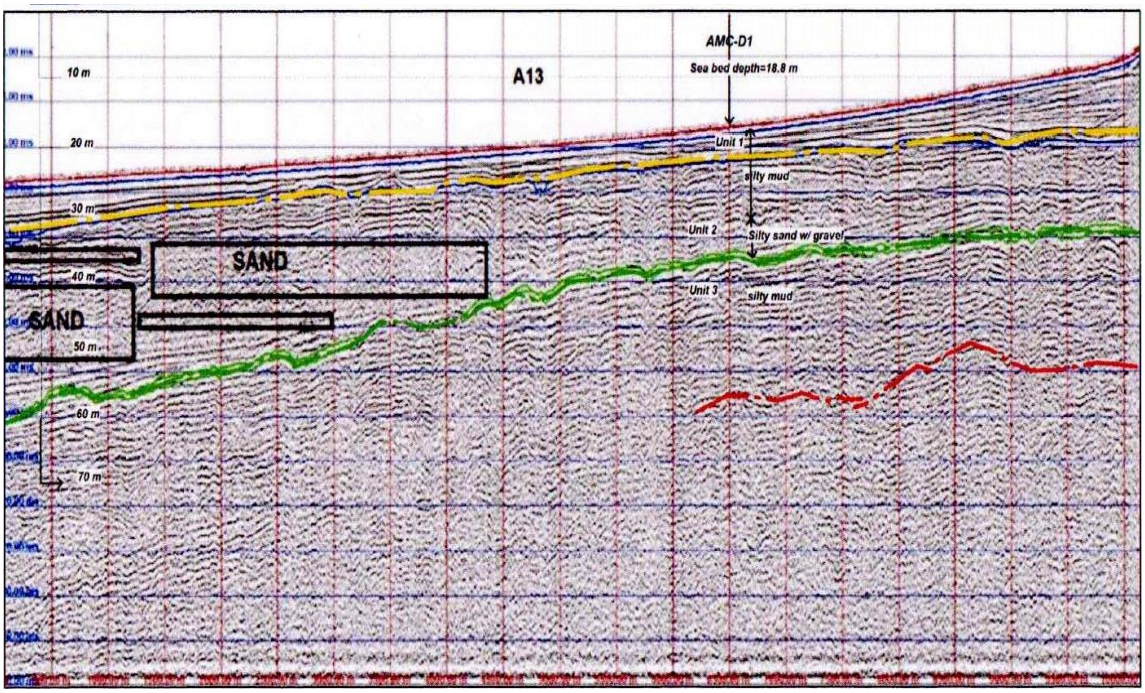


Figure 3-15. Seismic line A13 showing wide vertical extent of silty mud from the seabed (unit 1 & unit 3).

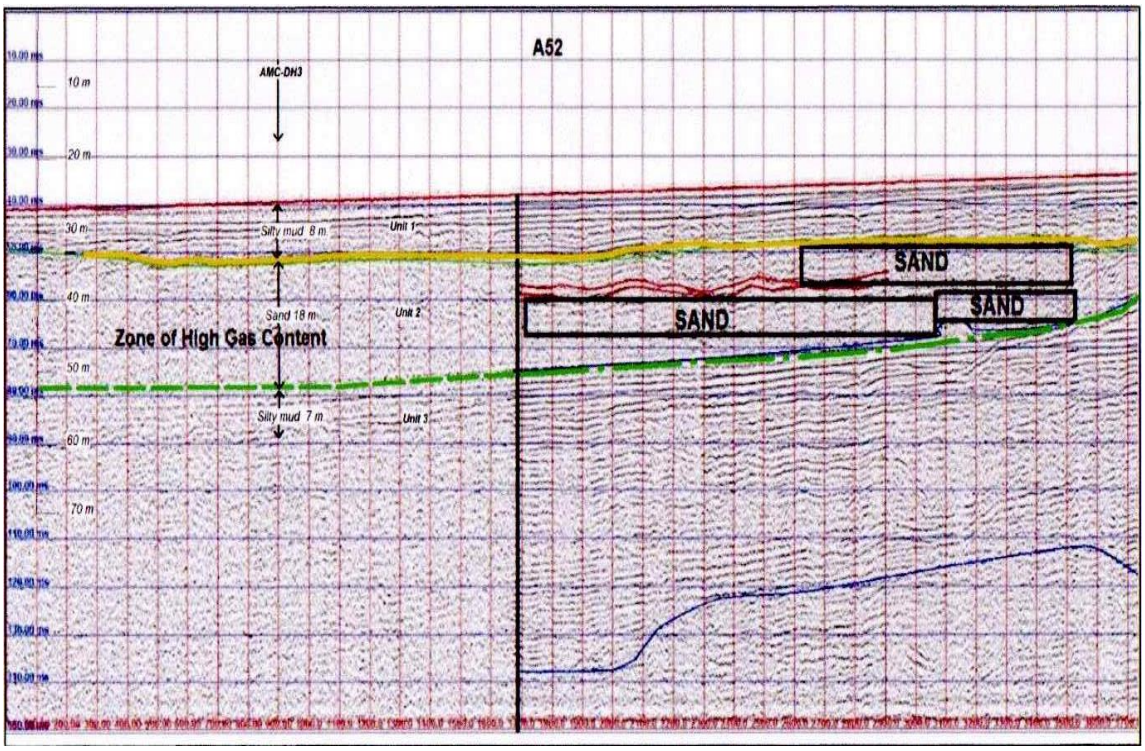


Figure 3-16. Seismic line A52 showing the location of AMC-DH3 within the zone of high gas content.

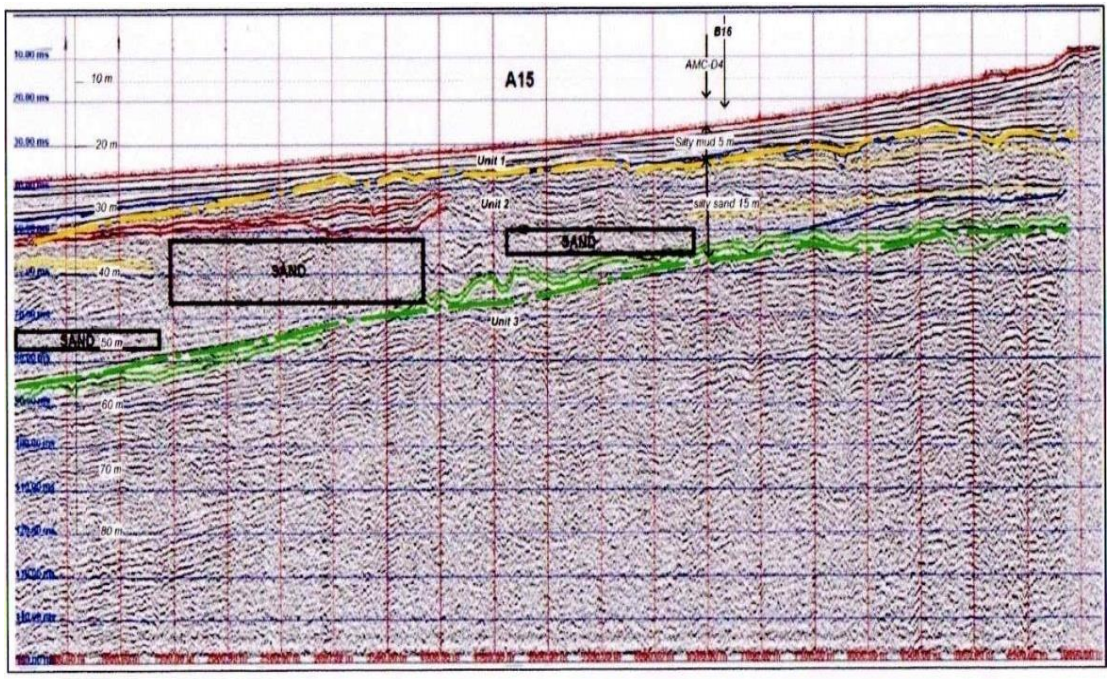


Figure 3-17. Seismic line A15 traversing through AMC-D4 where 15 meters thick silty sand underlying the 5 meter Holocene mud has been reported.

2.7.5 Offshore Drilling

Based on the results of seismic data interpretation where *Unit 2 (4m- 30m from seabed) has been identified as most viable source of sand aggregates*, six (6) drilling targets were recognized. The location of these drill targets is shown in Figure 24 and their geographic coordinates are enumerated in Table 9 below.

Drill Hole No.	Latitude	Longitude	Water Depth (meters)
AMC-DH-Ol	140 29' 15.82"	1200 51' 48 05	16
AMC-DH-02	140 28' 53.82"	1200 49' 20.72"	20
AMC-DH-03	149 28' 08.66"	120047 18"	20
AMC-DH-04	140 29' 07.83"	1200 50' 34.16"	20
AMC-DH-05	140 28' 30.22"	1200 48' 54 37	23
AMC-DH-06	140 29' 05.77"	1200 48' 05 72"	27

Table 9- Geographic coordinates of drill holes (WGS-84)

The contractor used a drilling rig with complete accessories and a floating bamboo platform.

The various sediments encountered during the drilling were logged, properly labelled for further laboratory analyses.

The sediments encountered during the drilling program consist of top layer of silty mud overlying older sediment layers including the prograded sediment sequence and fluviatile sediments. The various seismostratigraphic units identified in the seismic records were correlated with the results of drilling. The type of sediments recognized through drilling correlated well with the seismostratigraphic units identified in the seismic reflection profiles**.**

Figure 19- Location of drill holes

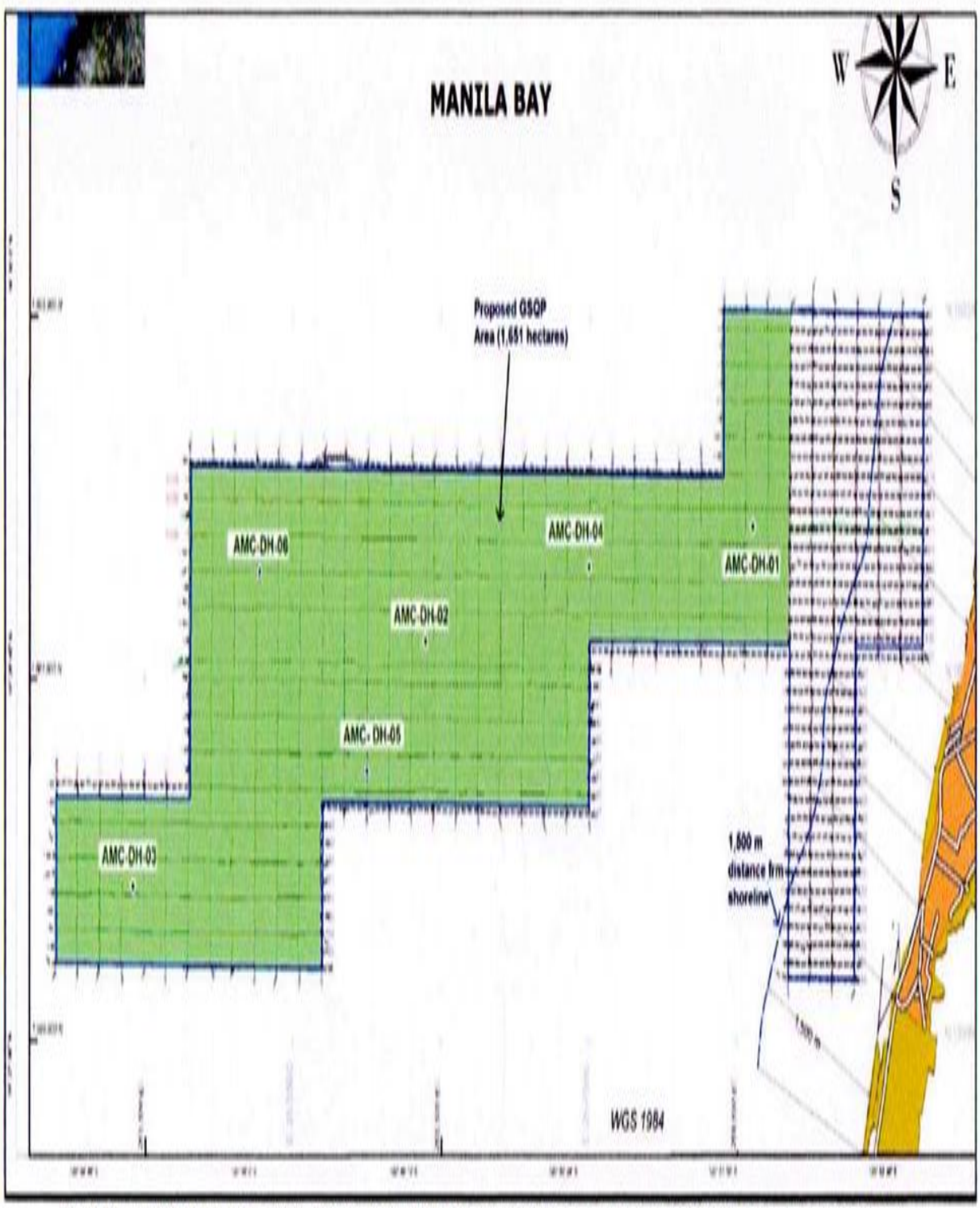


Figure 24. Location drill holes in EXPA-139-IVA showing the proposed GSQP area and the1,500 meters buffer zone (blue dash line)

2.7.6 Offshore and Sand Resource

The various lithology and sediments were identified based on seismic reflection pattern and characteristics and later confirmed through offshore drilling. Among the seismostratigraphic units identified through analysis and interpretation of seismic data, *Unit 2 (4m- 30m from seabed) appears to be the most viable sand resource consisting of sand mixed with minor amounts of gravel and fine grained sediments (silt and mud).* The type of sediments was later confirmed by offshore drilling and the subsequent analyses of samples.

Based on the results of the various laboratory tests carried out, the marine aggregate of Unit 2 generally contain 4.85% gravel, 73.11% sand and 22.04% silt and clay. The largest particle size is 19mm corresponding to medium to coarse pebble, While lowest particle size has less than 0.074mm diameter passing through sieve no. 200. Thus, the sediments that can be used as dredge fill materials are mostly silty sand with minor amount of gravel. Table 2 presents a summary of physical test results of samples gathered in the area.

Results of drilling and analyses of samples obtained were used in the delineation and calculation of the sand resources in conjunction with the results of seismo-stratigraphic analysis and interpretation.

2.7.6.1 Estimation Method

The data generated during the course of the various stages of the exploration, specifically the high-resolution seismic reflection profiling, bathymetric measurements and geological sampling through offshore drilling was all considered in the estimation of the resource.

The seismic reflection data was used in delineating potential targets for drilling and in identifying prospective sand bearing horizons.

The sand resource estimation is computed using the conventional polygon method. From selected seismic reflection profiles, the varying thicknesses of unit 2 were measured. The vertical areas were determined by polygon method and their respective volumes are then calculated using area of influence of 200 meters, i.e. 100 meters on each side. In some instances, 400 and 300 meters' influence were used. This was done on occasions where the quality of adjoining seismic sections are blurred or masked by the presence of gas charged sediments.

2.7.6.2 Resource Estimate

The mineable sand resource in the area occurs within *Unit 2(4m- 30m from seabed)* consisting mostly of silty sand and some are with small quantity of gravel.

The quantity of the resource was estimated by measuring the length and height of the polygon and by multiplying the resulting area with the accepted area of influence to come up with the volume of the aggregate material. The tonnage is then calculated by simply multiplying the total volume obtained with the average density of the core samples analyzed. An average density of 1.61 tons/m ^{3} was used in estimating the tonnage of the deposit.

A total of 267.95 million cubic meters was delineated within the proposed GSQP area. Using an average density of sand of 1.61 tons/m^3, the total tonnage of the deposit is 431.4 million tons of marine aggregate. The measured resource using 70% mineable recovery factor, will yield a total volume *187.56 meter^3 and 302 million tons of sand*.

2.7.6.3Construction & Commissioning

Quality assurance during construction and commissioning.

A quality assurance/quality control programme ensures that the seabed dredging and quarry equipment is purchased and built according to the design requirements, while meeting all applicable legal and technical standards and codes. The dredging project is recommended to have a quality assurance/quality control programme in place to prevent equipment failures that could result from:

(a) Use of faulty parts / materials due to improper delivery controls;
(b) Improper fabrication, installation or repair methods.

The operator's manual should provide guidance and mechanisms to assure that appropriately qualified and trained personnel are used for specified vessel and piping fabrication and for installing safety critical equipment and instrumentation.

Hazard management during construction and commissioning of dredging project should have a procedure in place during the construction and the commissioning of the seabed dredging and quarry. Typically, risk assessments as described on Safety Report/Declaration also apply during the Operations Phase. Pre-Start-up Safety Reviews are often being used during commissioning.

2.8 Operational Phase

Industrial facilities like a dredging project with high potential to large-scale accidents occurrence, due to operations performed, installed equipment, handled or processed hazardous substances and other distinctive features. Technology and equipment accepted during the design and planning stage and implemented during procurement/construction/asset integrity management stage cannot generate emergency situation alone. Various emergency scenarios including large-scale accidents occur only in the process of industrial activity, i.e. during the operational stage. Workforce (experts of various specializations and qualification, etc.) is one of the key elements of industrial activity. Operated facility safety status depends much on the personnel actions. Successful personnel performance, causing no emergency situations, depends on systematic approach to oil terminal industrial process safety management.

Avalar Mining Corporation formulated its Safety & Healthy Program as compliance for GSQP which is applicable to its workforce during this operational phase.

Process Safety hazards, on the other hand, can give rise to more severe consequences or major accidents involving the release of potentially hazardous materials, the release of energy (fires and explosions) or both; they can have catastrophic consequences and may

result in multiple fatalities, economic loss, substantial loss to property or severe environmental damage.

Risk assessments as stated on Safety Report/Declarations of the proponent also apply during the Operations Stage. Task-based risk assessments are often used for all routine tasks while Job Safety Analyses and Pre Start-up Safety Reviews are being used for more complex and non routine tasks such as safe start-ups after shutdown and specific maintenance activities. Expert safety reviews, Process Hazards Analysis, legal compliance checks and due diligence reviews are being used for life extension considerations, closure and decommissioning activities.

Dredging Methods

The **Trailing Suction Hopper Dredger (TSHD**) type shall be used in the dredging operations because of its advantage with regard to mobility. The hopper capacity ranges from 11,750 to 46,000 m3. that would allow the vessel to safely navigate and operate even in shallow waters.

Spoil Disposal and Management

Barge Movements once a barge is full, it will de-berth from the BHD, be towed to the disposal site and return to be moored alongside the dredge for reloading. Depending on weather and current conditions, it is expected that a typical round trip for the barge will be in the order of two to three hours. Expected loading times are in the order of four hours, and it is expected that three or four barge loads will be disposed of per day.

Bathymetric Survey

Bathymetry of Area to be Dredged and Disposal Ground Bathymetric surveys of the Dredge Spoil Disposal Ground will also be conducted.

2.9 Abandonment Phase

Closure and Decommissioning of the Seabed and Dredging Project

The features dominating the decommissioning activities of seabed quarry and dredging project of **Avalar Mining Corporation** are the pollution prevention and control requirements. This requires establishing a Decommissioning Plan for both existing and new industrial facilities in order to prevent or minimize pollution to the environment. A distinction is made between temporary closure and final decommissioning. The service provider of**Avalar Mining Corporation** shall be responsible to the clearing operation as provided in their contract.

2.10 Built-In Pollution Control Measures

WASTE MANAGEMENT CONTROL MEASURES

Implement the following Pollution Control Measures vis-a-vis the proposed seabed and dredging project, as follows;

a. Dust Control Management for Air Pollution
b. Land Resource Management Control Measures
c. Sediment and Water quality Pollution Control Strategies

d. Marine Protection Measures
e. Rehabilitation Plan and
f. Compliance to five (5) main environmental law to abate/reduce pollution, to wit;

- Solid Waste Management under RA9003
- Air Control Management under RA 8975
- Water Waste Management under RA 9275
- Hazardous & Toxic Waste Management, including the transport & disposal of its identified dredging waste under RA 6969

Disposal Site(Proper Transport & Disposal of Waste)

The flexible pipeline would be secured to a floating pontoon which is anchored to the seafloor at the disposal site and moved periodically to spread the material to gain the required finish levels. Because the dredged material is placed close to the seabed it results in less mixing through the water column than disposal via bottom dumping methods. However material placement via this method is continuous when the dredge is operating so any turbidity created develops over a day of dredging works.Waste is transported to proper facility or reclamation site.

Proponent shall comply with the provision of RA 6969 on the transport and disposal of its waste material.

Pre & Post-Disposal Activities

Surveys will be conducted prior to the commencement of disposal activities and after the completion of disposal activities in each dredging season. The pre- and post-disposal surveys will be used to produce plots of changes in depth as a result of disposal activities and to estimate the amount of disposed material retained on the disposal ground.

Surveys of the Disposal Ground Seabed Characteristics Surveys will be conducted of the physical characteristics of the seabed in the disposal ground after the completion of disposal activities using a combination of side scan sonar and towed video transects. This is the most efficient way to determine the distribution of large material on the spoil ground after disposal.

2.11 Manpower Requirements

2.11.1Total Operational Workforce

The dredging operation shall be handled by qualified contractors with sufficient experience and track records in dredging and reclamation works. Details of the design and plan of dredging will be discussed to the qualified contractors for implementation including the rate of extraction and necessary engineering works to minimize the impacts of dredging on marine environment and water quality.

The total number of officers and crew members for the dredging ships is estimated to be 108 personnel including technicians. Land based personnel is estimated to be about 40 support personnel.

Avalar Mining Corporation shall also field its workforce for the management and monitoring of dredging operations consisting of 3 senior staff, 5 junior staff and 20 support personnel.

As part of its commitment, the company shall prioritize the hiring of qualified local applicants from the nearby communities and municipalities. Skilled personnel and technical professionals needed for the project will be sourced from Metro Manila and other areas outside of the immediate municipality.

2.11.2Staff Organizational Set-up

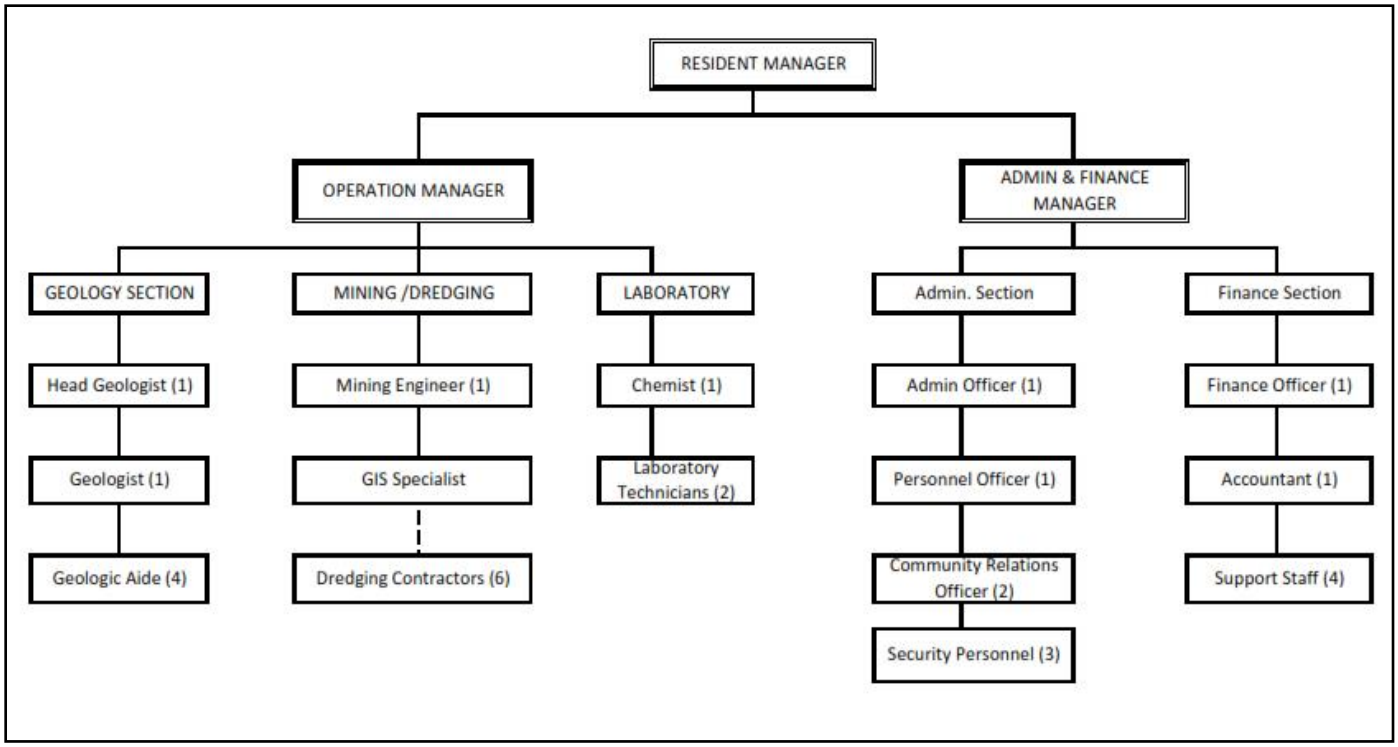


Figure 21- Organizational Set-up of Field personnel

2.11.3 Estimated Capital Cost

Investments will be sourced from stockholders equity and loans from financial institutions. These will be used to acquire assets and to provide working capital during the start-up period. The total project investment is Php 2,597,625,360.00 or US$ 50,933,830.58

2.11.4 Project Duration and Schedule

Avalar Mining Corporation's proposed project will commence its construction upon the issuance of Environmental Compliance Certificate (ECC) and other government permits.

Project schedule of activities for thisproject is illustrated thru the Gantt Chart for the purpose of preparation prior and during the development of the project, until the implementation of the same, as tabulated below;

Gantt Chart of Activities

Pre-Development/Development	Year 0				Year 1				Year 2				Year 3				Year 4				Year 5				Year 6				Year 7				Year 8			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1. Additional Exploration Drilling																																				
2. Procurement vehicle & equipment																																				
3. Acquisition of land																																				
4. Establishment of field office																																				
5. Warehouse & camp facilities																																				
6. Establishment of laboratory																																				
Preparations for Dredging																																				
1. Call for tender of bids																																				
2. Selection of dredging contractors																																				
3. Engagement of winning contractors																																				
Operational Stage																																				
Dredging operations																																				

Table11- Gantt Chant of Activities

2.12 Key Environmental Aspects& Impacts

The Land

The seabed dredging and quarrying operations shall have minimal impact on land within the three (3) areas of Cavite. Thus, the activities will not cause changes in vegetation and land-use and will also not lead to the loss of topsoil. However, a reforestation program will be implemented as part of the Social Development and Management Plan and the Environmental Performance and Enhancement Program since Cavite is mostly classified as residential and agricultural. Within the project site, there are no lands covered by the Comprehensive Agrarian Reform Law and none are ancestral domains or ancestral domain claims. It does not encroach on an Environmentally Critical Area, protected area, geothermal reserve, or the like. Episodic hazards such as volcanic eruptions, flooding, and storms and the slope stability will be considered during the implementation of dredging activities.

The Water

Avalar Mining Corporation's proposed seabed dredging and quarrying project will have the most significant impact on the water environment. The dredging activities shall have impact on the immediate surroundings through the re-suspension of unconsolidated sediments. This can be mitigated by sediment controls such as silt screens and curtains in the dredging area and disposal area. In addition to this, the exit port of the dredgers will be introduced at an indicative distance from the shelf bottom of about 3 meters so as to minimize re-suspension from dispersion, from transport or from the shelf bottom deflection. The impact on marine resources can also be managed by avoiding existing fish corrals and cages in the area.

The Air

Air control management is the key to minimize the impact of the project as to its air emissions. This project has no significant impact on the climate. Its greenhouse gas emissions are significantly lesser than that of other industries and transport systems. Aside from this, no significant impact on air quality and noise emissions can be attributed to this project as majority of the operations occur offshore. Transportation equipment should be properly maintained and operated so as to prevent the release of such contaminants.

The People

In the EIA process, public participation is a requirement for environmentally critical projects in order to better understand the community's concerns as well as how it can be mitigated. **Avalar Mining Corporation's** conduct of **Information Education Campaign (IEC) per DAO 2017-15** is necessary to inform the public on the proposed project, giving them information as to its environmental aspects that will affect the host communities must then be properly mitigated and continuous communication between the proponent and the community must be conducted. In addition to this, a comprehensive social development plan and alternative livelihood programs should be established in the community to assist the affected communities.

2.13 The Conduct of Information Education and Communication (IEC)

It is mandatory under the DENR rules to conduct Information Education and Communication (IEC), which serves as a basis for preliminary identification of stakeholders. **Avalar Mining Corporation** follows the guidelines in Annex 2-19(DAO 2003-30). During this project's pre-scoping stage, proponent's EIA Team and its Community Relations Officer conducted the same activity for the purpose of informing the Local Government Unit concern and the local folks for the establishment of the proposed project. As a result of this IEC, stakeholders were identified in the impact areas of Noveleta, Rosario and Cavite City and they raised some issues/questions and concerns relative to the instant project.Methods used is through focus group discussions, interviews, meetings and consultation with some of the Brgy. Chairman of Noveleta and Rosario, local folks of Cavite City, leader of fishermen's organization, organization, youth, and local folks.

IEC Objectives	Identified Stakeholders	Methods & Strategies used	Issues & Concerns
▪ To inform the affected communities for the implementation of the proposed project for public awareness ▪ preliminary identification of stakeholders and related issues ▪ To establish socio-economic/perception surveys which shall be used as the basis for the subsequent formulation of social development plans/community development programs	▪ LGUs-Coastal Barangay of direct impact areas represented by their Brgy. Chairman &Bgry. Councilors ▪ Leader of fishermen's association ▪ Local residents living nearby coastal direct impact area ▪ Youth sector ▪ The market sector of Noveleta, Rosario & Cavite City	▪ Interviews ▪ Consultations ▪ Meetings ▪ Focus group discussions	▪ LGU: Local Economy concerns Whether or not the establishment of the project will benefit the economy Is local taxation be strengthen & distributed to the barangay level? ▪ Fishing Sector: Source of their livelihood Fishing industry might be affected due to excavation activities and water disturbance ▪ Youth: is this project will benefit local employment? ▪ Is the company will prioritize the hiring of qualified local applicants from the nearby communities and municipalities. ▪ Residents living nearby coastal affected areas; resettlement and displacement of their residence ▪ Proponent shall develop community development programs to alleviate livelihood programs ▪ Environmental concerns for marine life ▪ Management of waste to be dredged ▪ Market Sector; how would their market or source of their livelihood be supported by the company?

Table 12- Initial Conduct of IEC for Pre-scoping Stage of EIA Process

Avalar Mining Corporation's Template for IEC

AVALAR MINING CORP

Annex 2-19(DAO 2003-30)
Template for Information, Education and Communication (IEC) Plan/Framework

Target Sector Identified as Needing Project IEC	Major Topic/s of Concern in Relation to Project	IEC Scheme/Strategy /Methods	Information Medium	Indicative Timelines And Frequency
1. LGU 2. Project affected Communities 3. POs 4. NGOs 5. Schools	❑ Project Description & status ❑ EIA findings ❑ Performanc against ECC/EMP ❑ Actual Impacts & Measures	❑ Invitation Letters ❑ Focus Interviews ❑ Authority Figures & Informant Interviews ❑ Focus Group Interviews ❑ Multi-sectoral clust meetings ❑ Hand-outs ❑ Audio-visual presentation ❑ Illustrative primer abc the project ❑ Newspaper publication ❑ Radio Broadcast ❑ Posters Flyers		

ATTACHMENTS

- Invitation Letters
- List of Invites
- Proposed Program
- Maps
- Pictures of Project Site
- Pictures of IEC Activities
- SEC

DRAFT INVITATION LETTER for the MUNICIPAL MAYORS

(to be signed by the EMB)

10 July 2020

Hon._____
Municipal Mayor
(Indicate the name of the Municipal Mayor of Cavite City/ Noveleta/ Rosario)
Municipality of _____
Province of Cavite

RE: Invitation to attend Public Scoping for the proposed project of Avalar Mining Corporation entitled "Seabed Dredging & Quarrying Project" to be located at the Philippine Luzon West Coast - Manila Bay approaching and traversing along the areas of West Offshore within the municipal waters of Cavite City, Noveleta, and Rosario, all Province of Cavite.

Dear HonorableMayor,

Our Warmest Greetings!

Avalar Mining Corporation ("Avalar", the Proponent herein) applies for an Environmental Compliance Certificate(ECC) as stated in *"Philippine Environmental Impact System"*(PD 1586) and the *Revised Procedural Manual of DENR* (DAO 2003-03) for the purposes of environmental compliance and issuance of their ECCconsistent with the objective of Public Scoping at this EIS (Environmental Impact System) stage, where information and project impact assessment requirements are established to provide the proponent and the stakeholders the scope of work and terms of reference for the EIS.

This application/registration of ECC of the **Proposed Seabed Quarry & Dredging Project** of the proponent covers the construction and operation of the same, with a total area of 4,810 hectares under the jurisdiction of this DENR-EMB Central Office.

Under DENR-DAO 2017-15, we would like to invite you to attend the Public Scoping scheduled on:

DATE: 25 July 2020
TIME: 1:30 PM
VENUE: Along coastal barangay impact area, San Rafael 2, Noveleta

***NOTE: The conduct of Public Scoping shall conform to the ECQ Rules**

Public Scoping event is significant as part of Environmental Impact Assessment (EIA) process for determining also the direct and indirect impacts of Avalar's project. The proponent will present before the various stakeholders within your jurisdiction, for the purposes of involving all-concerned citizensto give a public a timely disclosure of all significant information, assessment, management and monitoring of environmental impacts of the said project. At this early stage of the EIA cycle, stakeholders shall be able to express their issues, concerns, comments and questions to the proponent to achieve an identification of the most relevant issues and impacts of seabed and quarry operations in order for the affected local community to appreciate the substance and context of EIS System. Most significantly, to implement our mandate as dictated by Executive Order No. 192, as the primary agency to protect our natural resources and preservation of the same.

Thank you and anticipating your attendance in this environmental episode.

Sincerely yours,

ENGR. WILLIAM P. CUÑADO
OIC, Director

DRAFT INVITATION LETTER for the BRGY. CHAIRMAN

(to be signed by the EMB)

10 July 2020

Hon._____
Barangay Chairman
(Indicate the name of the Barangay Chairman of the directly affectedBarangays of Cavite City, Noveleta, & Rosario)
Municipality of _____
Province of Cavite

RE: Invitation to attend Public Scoping for the proposed project of Avalar Mining Corporation entitled "Seabed Dredging & Quarrying Project" to be located at the Philippine Luzon West Coast - Manila Bay approaching and traversing along the areas of West Offshore within the municipal waters of Cavite City, Noveleta, and Rosario, all Province of Cavite.

Dear Honorable Mayor,

Our Warmest Greetings!

Avalar Mining Corporation ("Avalar", the Proponent herein) applies for an Environmental Compliance Certificate(ECC) as stated in *"Philippine Environmental Impact System"*(PD 1586) and the *Revised Procedural Manual of DENR* (DAO 2003-03) for the purposes of environmental compliance and issuance of their ECCconsistent with the objective of Public Scoping at this EIS (Environmental Impact System) stage, where information and project impact assessment requirements are established to provide the proponent and the stakeholders the scope of work and terms of reference for the EIS.

This application/registration of ECC of the **Proposed Seabed Quarry & Dredging Project** of the proponent covers the construction and operation of the same, with a total area of 4,810 hectares under the jurisdiction of this DENR-EMB Central Office.

Under DENR-DAO 2017-15, we would like to invite you to attend the Public Scoping scheduled on:

DATE: 25 July 2020
TIME: 1:30 PM
VENUE: Along coastal barangay impact area, Brgy. San Rafael 2, Noveleta

***NOTE: The conduct of Public Scoping shall conform to the ECQ Rules**

Public Scoping event is significant as part of Environmental Impact Assessment (EIA) process for determining also the direct and indirect impacts of Avalar's project. The proponent will present before the various stakeholders within your jurisdiction, for the purposes of involving all-concerned citizensto give a public a timely disclosure of all significant information, assessment, management and monitoring of environmental impacts of the said project. At this early stage of the EIA cycle, stakeholders shall be able to express their issues, concerns, comments and questions to the proponent to achieve an identification of the most relevant issues and impacts of seabed and quarry operations in order for the affected local community to appreciate the substance and context of EIS System. Most significantly, to implement our mandate as dictated by Executive Order No. 192, as the primary agency to protect our natural resources and preservation of the same.

Thank you and anticipating your attendance in this environmental episode.

Sincerely yours,

ENGR. WILLIAM P. CUÑADO
OIC, Director

DRAFT INVITATION LETTER for the VARIOUS STAKEHOLDERS

(to be signed by the EMB)

10 July 2020

MR/MS._____
Head
***i.e.*,Fishermen's Organization/ Youth Sector /Environmental Organization/ Business Sector etc.**
(Indicate the name of the head or leader of the various organizations in the Province of Cavite)
Province of Cavite

RE: Invitation to attend Public Scoping for the proposed project of Avalar Mining Corporation entitled "Seabed Dredging & Quarrying Project" to be located at the Philippine Luzon West Coast - Manila Bay approaching and traversing along the areas of West Offshore within the municipal waters of Cavite City, Noveleta, and Rosario, all Province of Cavite.

Dear Sir/Ma'am,

Our Warmest Greetings!

Avalar Mining Corporation ("Avalar", the Proponent herein) applies for an Environmental Compliance Certificate(ECC) as stated in *"Philippine Environmental Impact System"*(PD 1586) and the *Revised Procedural Manual of DENR* (DAO 2003-03) for the purposes of environmental compliance and issuance of their ECCconsistent with the objective of Public Scoping at this EIS (Environmental Impact System) stage, where information and project impact assessment requirements are established to provide the proponent and the stakeholders the scope of work and terms of reference for the EIS.

This application/registration of ECC of the **Proposed Seabed Quarry &Dredging Project** of the proponent covers the construction and operation of the same, with a total area of 4,810 hectares under the jurisdiction of this DENR-EMB Central Office.

Under DENR-DAO 2017-15, we would like to invite you to attend the Public Scoping scheduled on:

DATE: 25 July 2020
TIME: 1:30 PM
VENUE: Cavite Gym

***NOTE: The conduct of Public Scoping shall conform to the ECQ Rules**

Public Scoping event is significant as part of Environmental Impact Assessment (EIA) process for determining also the direct and indirect impacts of Avalar's project. The proponent will present before the various stakeholders within your jurisdiction, for the purposes of involving all-concerned citizensto give a public a timely disclosure of all significant information, assessment, management and monitoring of environmental impacts of the said project. At this early stage of the EIA cycle, stakeholders shall be able to express their issues, concerns, comments and questions to the proponent to achieve an identification of the most relevant issues and impacts of seabed and quarry operations in order for the affected local community to appreciate the substance and context of EIS System. Most significantly, to implement our mandate as dictated by Executive Order No. 192, as the primary agency to protect our natural resources and preservation of the same.

Thank you and anticipating your attendance in this environmental episode.

Sincerely yours,

ENGR. WILLIAM P. CUÑADO
OIC, Director

PROPOSED LIST OF INVITEES FOR THE PUBLIC SCOPING

Per Section 5.2 of DAO 2017-15

Project Location Impact Areas	Potential Impacts	Proponent's Basis for the selection of various sectors/stakeholders	Identified to be likely stakeholders/Partial List of Invitees for Public Scoping
Direct Impact Area(Affected Impact Coastal Barangays in the Project Area)			
CAVITE CITY	**Barangay 8 (Manuel S. Rojas)** **Barangay 11 (Lawin)** **Barangay 13 (Aguila)** **Barangay 14 (Loro)** **Barangay 29-M (Lao-lao/Aries)** **Barangay 29-A (Lao-lao A/Aries** **Barangay 30 (Bid-bid)** **Barangay 36-M (Sap-Sap)** **Barangay 36-A (Sap-sap A)** **Barangay 37-M (Cadena de Amor)** **Barangay 37-A (Cadena de Amor A)** **Barangay 48-M (Narra)** **Barangay 48-A (Narra A)**	Directly affected coastal Barangays in the area	❑ Barangay Chairman ❑ Barangay Councilors ❑ Association of Fishermen ❑ Youth Sector ❑ Health Sector/Health Workers/Hospitals ❑ Business Sector ❑ Local Folks living nearby the Manila Bay ❑ Residents along the coastal project area ❑ Environmental Sectors ❑ Academe
NOVELETA	San Rafael 2 San Rafael 3 San Rafael 4	Directly affected coastal Barangays in the area	❑ Barangay Chairman ❑ Barangay Councilors ❑ Association of Fishermen ❑ Youth Sector ❑ Health Sector/Health Workers/Hospitals ❑ Small Business Sector ❑ Local Folks living nearby the Manila Bay ❑ Residents along the coastal project area ❑ Environmental Sectors
ROSARIO	Bagbag II Kanluran Ligtong I Ligtong IV Muzon I Muzon II Sapa II Sapa III Wawa I Wawa II	Directly affected coastal Barangays in the area	❑ Barangay Chairman ❑ Barangay Councilors ❑ Association of Fishermen ❑ Youth Sector ❑ Health Sector/Health Workers/Hospitals ❑ Small Business Sector ❑ Local Folks living nearby the Manila Bay ❑ Residents along the coastal project area
Provincial LGU & Municipal LGUs with political jurisdiction over the project area (other than the listed barangays above)			

CAVITE CITY	***Avalar's***project is located at the Philippine Luzon West Coast - Manila Bay, situated in the northwest of the Cavite sandpit, approaching and traversing along the areas of West Offshore within the municipal waters of Cavite City.	❑ Municipal Mayor ❑ Chairman & Members of the Sangguniang Bayan	***Mayor*** Hon. Bernardo S. Paredes ***Vice Mayor*** Hon. Denver Chua ***Councilors*** CONSIGO, PERCELITO PANGAN RUSIT, BENZEN RALEIGH GREPO BARRERA, JESUS JET SANTOS PONSONES, MICHAEL RUIZ LU, MICHAEL BAUTISTA BARRON, FERNANDO SALAZAR TIRONA, EDMUND CANDELARIA NUGUID, JAMES SALUD CAMARSE, NEMUEL RESURRECION PINZON, MARRIAN MATEO
NOVELETA	***Avalar's*** project is located at the Philippine Luzon West Coast - Manila Bay , situated in the northwest of the Cavite sandpit, approaching and traversing along the areas of West Offshore within the municipal waters of the Municipality of Noveleta	❑ Municipal Mayor ❑ Chairman & Members of the Sangguniang Bayan	***Mayor*** Hon. Dino Chua ***Vice Mayor*** Hon. Arlynn Torres ***Councilors*** BUTAWAN, KATHERINE BERNAL LONTOC, EMELITO SALINAS MANALO, DAVE MALIA MAGAT, ELVIRA SANTONIL ALVAREZ, DONATO BASA SALUD, EDWIN MENDOZA ALVAREZ, ENRICO JOSEPH BAYLON LAMIT, RONEL ANTIGO
ROSARIO	***Avalar's*** project is located at the Philippine Luzon West Coast - Manila Bay, situated in the northwest of the Cavite sandpit, approaching and traversing along the areas of West Offshore within the municipal waters of the Municipality of Rosario	❑ Municipal Mayor ❑ Chairman & Members of the Sangguniang Bayan	***Mayor*** Hon. Jose M. Ricafrente, Jr. ***Vice Mayor*** Hon. Jose Voltaire Ricafrente ***Councilors*** LUNA, ANTONIO H. JR MALABANAN ETHEL ANDICO VELARDE, MARK JAY G. BADIDLES, RODENCIO L. JR. AQUINO, BRYAN DOMINIC B. GO, CHRISTOPHER P. GIONGKO, MICHAEL H. CONVENTO, ROLANDO A.
PROVINCE OF CAVITE	The two (2) municipalities and one (1) city mentioned in the first column are all located in the Province of Cavite, where the proposed seabed & dredging project will be implemented	❑ Provincial Governor	***Governor*** Hon. Juanito Victor C. Remulla, Jr. ***Vice-Governor*** Hon. Ramon Jolo B. Revilla III
****Other entities/organization which are pre-identified areas of potential impacts, shall be subject to determination in accordance to EIA Findings and it may be considered as Indirect Impact areas***			

Reference: Revised Procedural Manual for 2003-30 :ANNEX 2-9 SAMPLE PROGRAM FOR PUBLIC SCOPING WITH SUPPLEMENTAL GUIDELINES

PROPOSED PROGRAM FOR PUBLIC SCOPING

For:

AVALAR MINING CORP

"Proposed Seabed Dredging & Quarrying Project"

(Title of the Proposed Project)

Project Proponent	**AVALAR MINING CORPORATION**
Project Location	This offshore seabed operation & dredging activity covers 4,810 hectares to be undertaken along Luzon-West covering the aforementioned locations within the two (2) municipalities and one (1) City of Cavite, namely Noveleta, Rosario and Cavite
Date & Time of Scoping	25 July 2020, program activities shall commence, 8:00 AM
Scoping Venue	Along coastal barangay impact area, San Rafael 2, Noveleta
Person/s Responsible for the Program	DENR-EMB Personnel &Avalar's Management/Staff/ Avalar EIA Team / Environmental Consultants

-PROGRAMME-

Time	Activities	Person/s Responsible
8:00-9:00 AM	Registration	Avalar EIA Team member
9:00 – 9:15 AM	Opening Prayer	LGU (Brgy. Chairman or Brgy. Councilors)
	National Anthem	Avalar EIA Team member
	Welcome Remarks	LGU Governor/Mayor, Officers of DENR-EMB- CO Officals/ EMB - EIAMD/ EMB Case Handler
9:30 – 9:45 AM	An Introduction of Participants, Overview, Objectives and Expectation Setting of the Scoping	Avalar EIA Team/Environmental Consultant (RMS)
	AM Overview of EIA, Scoping Guidelines and Mechanics of the Project Scoping Activity	DENR-CO/ DENR-EMB RO EIAMD/ EMB Case Handler
9:45 – 10:15 AM	Brief Presentation of the Proposed Project, its Potential Impacts and Measures	Avalar Representative/Member of the EIA Team/Environmental Consultants
10:15 – 10:30 AM	Snacks	
10:30 – 11:00 AM	Open Forum and Raising of Issues to be addressed by the EIA Study	Avalar EIA Team Member
11:00 AM – 11:15 AM	Synthesis and Summary of Issues and Agreements	Avalar Team EIA Member
11:15 – 11:30 AM	Message from Representatives of Different Sectors Barangay Sectoral Representatives	Head of various Stakeholders/Leaders/Sectoral Re
11:30 – 11:45 AM	AM Closing Remarks and Next Steps in the EIA Process EMB-CO EIAMD or	DENR-CO-EIAMD

Nota Bene: Per Annex 2-9 (RPM), to wit;

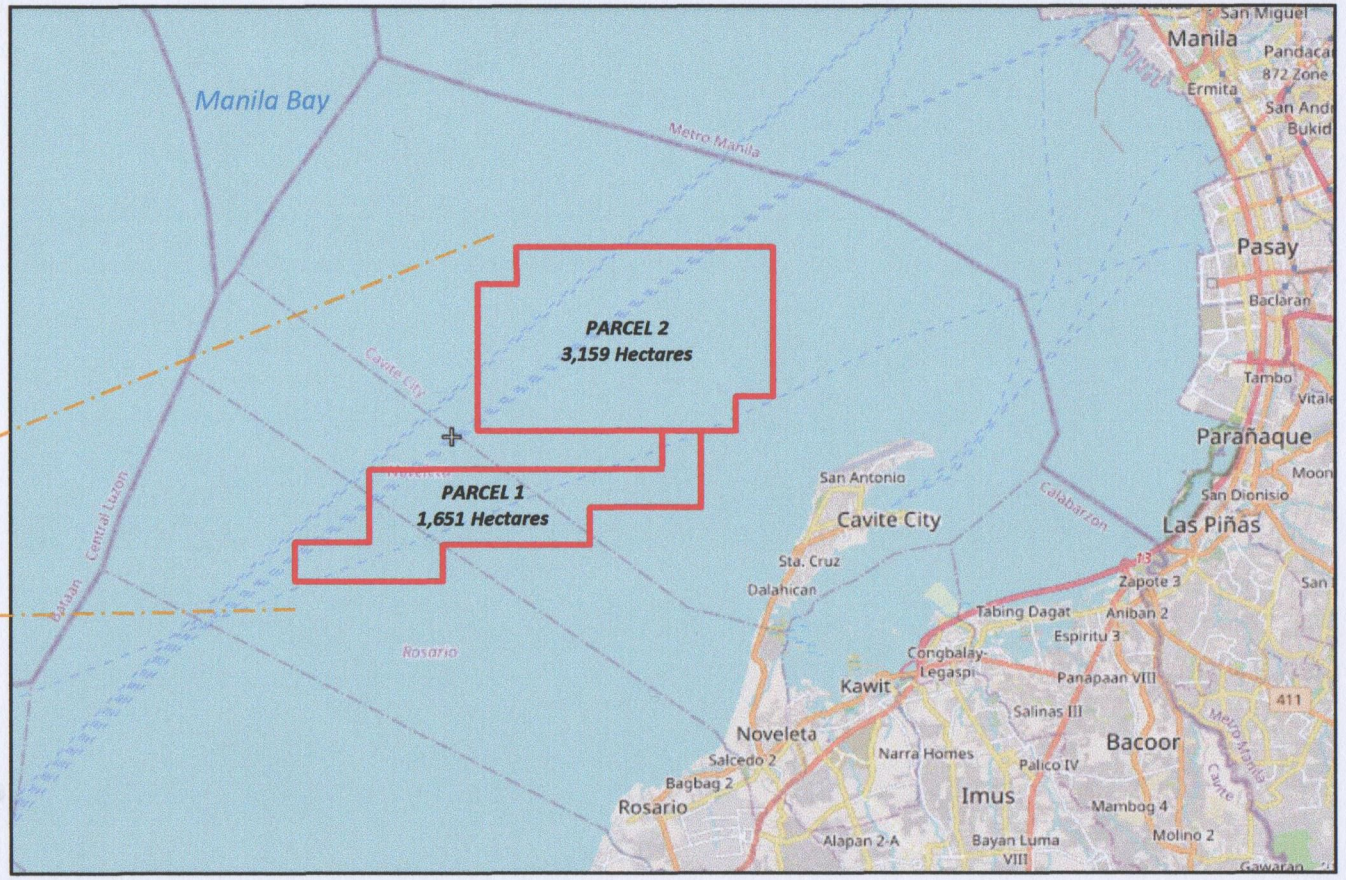
1 Registration personnel shall take note of key representatives of each sector. There will be signing of Public Scoping List of Issues by key representatives of each sector. Photo-exhibit and other visuals (maps, pictures, hand-outs, etc.) should be made available/posted as additional reference materials. 2 : Fact sheets and other documents may be distributed upon registration or at the start of the program. 3 Per sector, based on registration list 4 Assumption: Proponent/Preparers have assigned a documenter to list all issues on the board and on the computer, using the Public Scoping Form, Annex 2-7c of the Revised Procedural Manual of DAO 2003-30.

Project Location Map

PROPOSED SEABED DREDGING & QUARRY PROJECT

Manila Bay approaches West Offshore within the municipal waters of Cavite City, Noveleta and Rosario, Province of Cavite

MAP of the PHILIPPINES



AVALAR MINING CORP

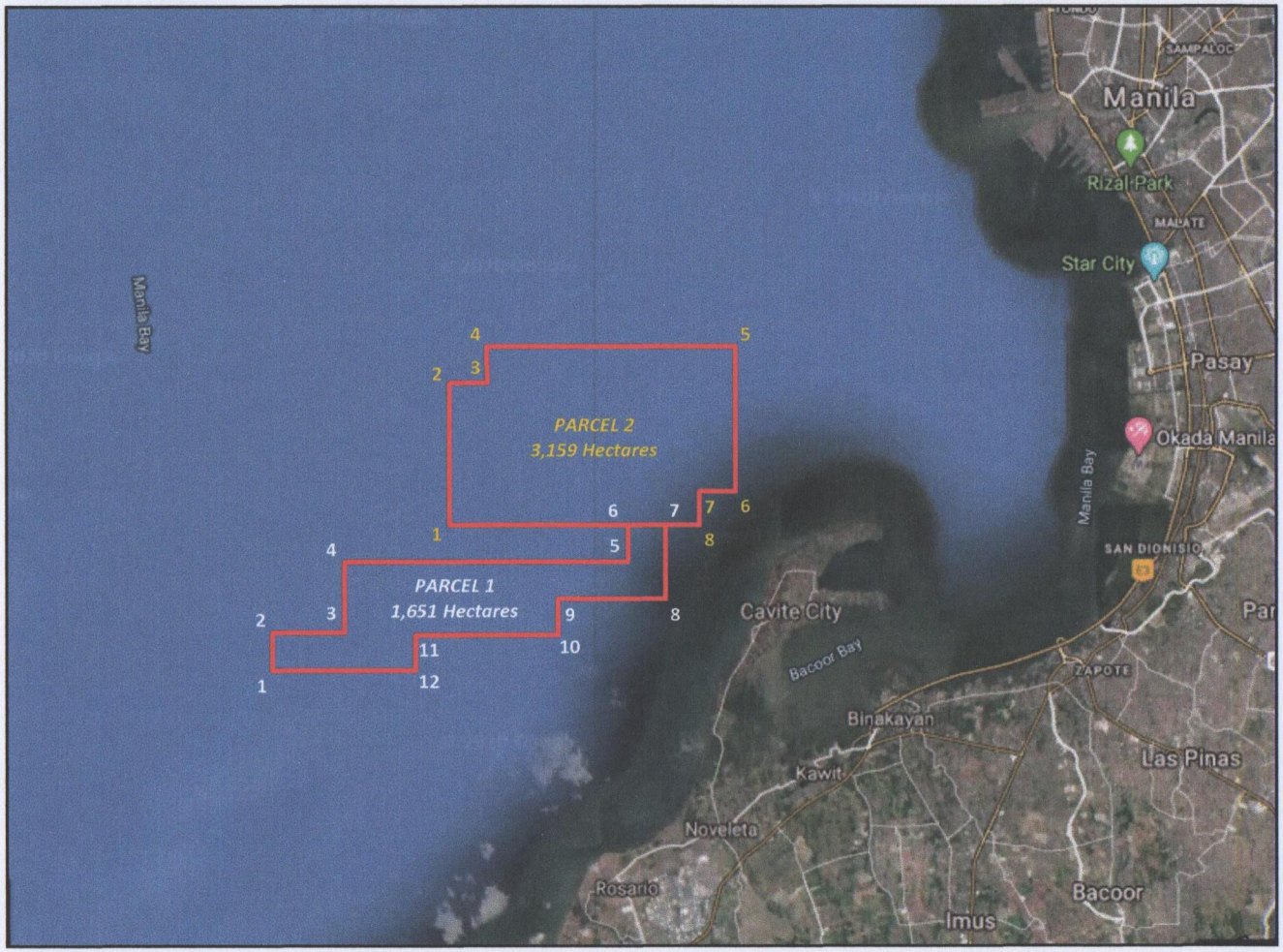
Shapefile Configuration Map

PROPOSED SEABED DREDGING & QUARRY PROJECT

Manila Bay approaches West Offshore within the municipal waters of Cavite City, Noveleta and Rosario, Province of Cavite

Technical Description
(Coordinate System: Luzon Datum)

PARCEL 1 Area: 1,651 Hectares		
POINT	EASTINGS	NORTHINGS
1	14° 28′ 00″	120° 46′ 30″
2	14° 28′ 30″	120° 46′ 30″
3	14° 28′ 30″	120° 47′ 30″
4	14° 29′ 30″	120° 47′ 30″
5	14° 29′ 30″	120°51′ 30″
6	14°30′ 00″	120°51′ 30″
7	14°30′ 00″	120°52′ 00″
8	14°29′ 00″	120°52′ 00″
9	14° 29′ 00″	120°50′ 30″
10	14° 28′ 30″	120°50′ 30″
11	14° 28′ 30″	120° 48′ 30″
12	14° 28′ 00″	120° 48′ 30″
PARCEL 2 **Area: 3,159 Hectares**		
POINT	EASTINGS	NORTHINGS
1	14° 30′ 00″	120° 49′ 00″
2	14° 32′ 00″	120° 49′ 00″
3	14° 32′ 00″	120° 49′ 30″
4	14° 32′ 30″	120° 49′ 30″
5	14° 32′ 30″	120°53′ 00″
6	14° 30′ 30″	120°53′ 00″
7	14°30′ 30″	120°52′ 30″
8	14°30′ 00″	120°52′ 30″



AVALAR MINING CORP

N

Topographic Map

of Impact/Affected Areas

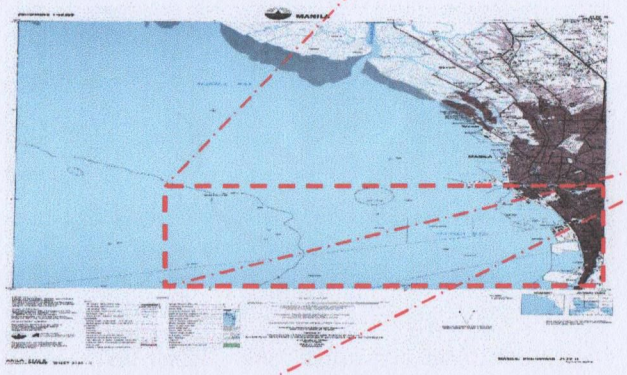
PROPOSED SEABED DREDGING & QUARRY PROJECT

Manila Bay approaches West Offshore within the municipal waters of Cavite City, Noveleta and Rosario, Province of Cavite

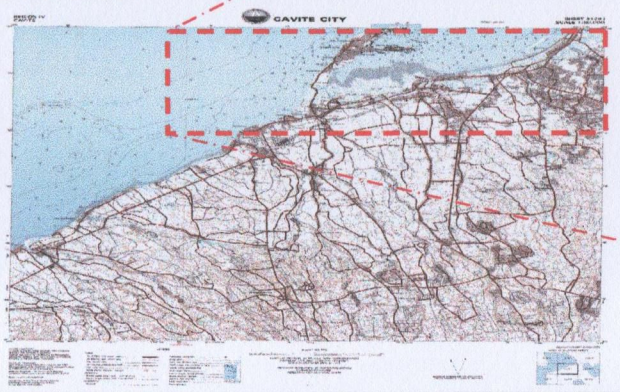
NAMRIA MAP

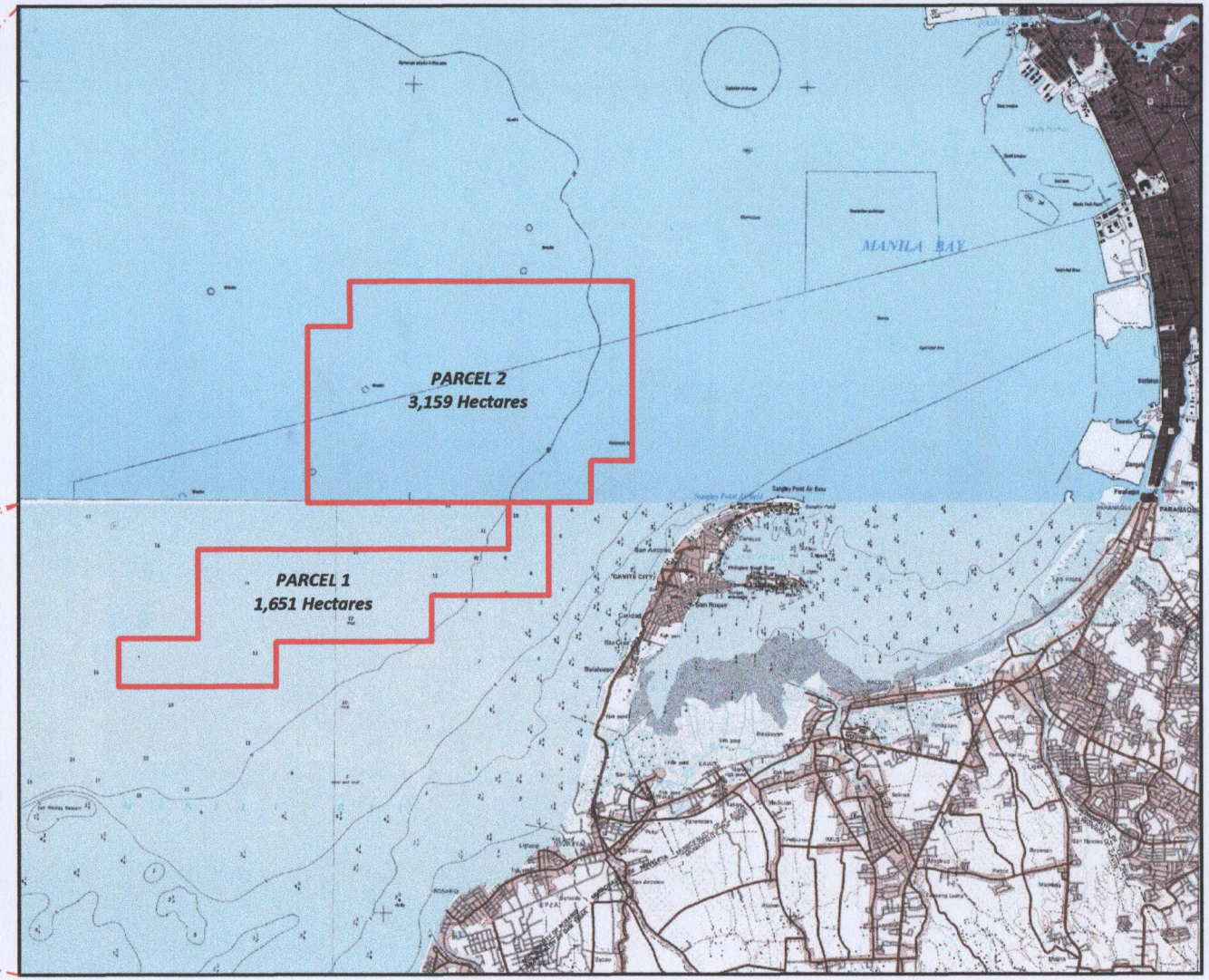
Scale 1:50,000

Sheet 7172 II



Sheet 3129 I





AVALAR MINING CORP

Vicinity Map
of Affected Communities

PROPOSED SEABED DREDGING & QUARRY PROJECT

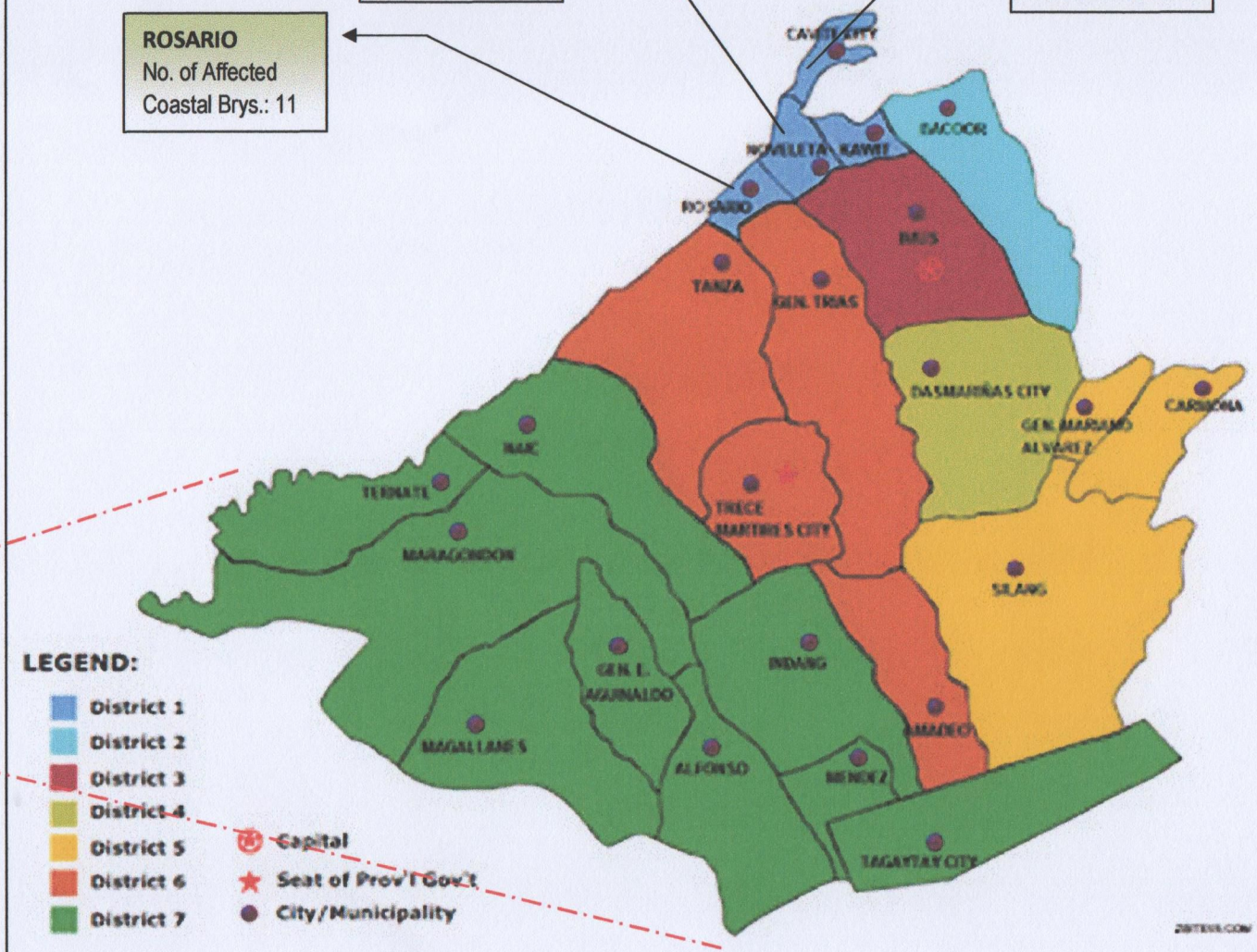
Manila Bay approaches West Offshore within the municipal waters of Cavite City, Noveleta and Rosario, Province of Cavite

MAP of the PHILIPPINES

NOVELETA
No. of Affected Coastal Brys.: 3

ROSARIO
No. of Affected Coastal Brys.: 11

CAVITE CITY
No. of Affected Coastal Brys.: 13



LEGEND:

- District 1
- District 2
- District 3
- District 4
- District 5
- District 6
- District 7

- Capital
- Seat of Prov'l Gov't
- City/Municipality

AVALAR MINING CORP

PICTURES OF PROJECT SITE

Project Name: THE PROPOSED OFFSHORE DREDGING & SEABED QUARRY PROJECT
Location: WEST OFFSHORE OF CAVITE CITY, NOVELETA, AND ROSARIO, PROVINCE OF CAVITE

Pictures of Actual Project Site

PICTURES OF IEC ACTIVITIES

Project Name: THE PROPOSED OFFSHORE DREDGING & SEABED QUARRY PROJECT
Location: WEST OFFSHORE OF CAVITE CITY, NOVELETA, AND ROSARIO, PROVINCE OF CAVITE

CAVITE CITY and ROSARIO

Group Focus Discussion with Leaders of Various Sectors of Impact Areas

NOVELETA

Meeting and Consultations with Affected LGU: Barangay Chairman & Chairman of Brgy. Environmental Committee

Fisherman addresses their Issues & Concerns

Interview with Local Folks along the Affected Coastal Barangays

Barangay Hall

REPUBLIC OF THE PHILIPPINES
SECURITIES AND EXCHANGE COMMISSION
SEC Building, EDSA, Greenhills
City of Mandaluyong, Metro Manila

COMPANY REG. NO. CS201307503

CERTIFICATE OF FILING OF AMENDED ARTICLES OF INCORPORATION

KNOW ALL PERSONS BY THESE PRESENTS:

This is to certify that the amended articles of incorporation of the

AVALAR MINING CORP.
(Amending Article II Secondary Purposes thereof.)

copy annexed, adopted on July 30, 2015 by majority vote of the Board of Directors and by the vote of the stockholders owning or representing at least two-thirds of the outstanding capital stock, and certified under oath by the Corporate Secretary and a majority of the Board of Directors of the corporation was approved by the Commission on this date pursuant to the provision of Section 16 of the Corporation Code of the Philippines, Batas Pambansa Blg. 68, approved on May 1, 1980, and copies thereof are filed with the Commission.

Unless this corporation obtains or already has obtained the appropriate Secondary License from this Commission, this Certificate does not authorize it to undertake business activities requiring a Secondary License from this Commission such as, but not limited to acting as: broker or dealer in securities, government securities eligible dealer (GSED), investment adviser of an investment company, close-end or open-end investment company, investment house, transfer agent, commodity/financial futures exchange/broker/merchant, financing company and time shares/club shares/membership certificates issuers or selling agents thereof. Neither does this Certificate constitute as permit to undertake activities for which other government agencies require a license or permit.

IN WITNESS WHEREOF, I have set my hand and caused the seal of this Commission to be affixed to this Certificate at Mandaluyong City, Metro Manila, Philippines, this 2nd day of November, Twenty Fifteen.

FERDINAND B. SALES
Director
Company Registration and Monitoring Department

COVER SHEET

for Applications at

COMPANY REGISTRATION AND MONITORING DEPARTMENT

Nature of Application

AMENDMENT

SEC Registration Number

CS201307503

Former Company Name

AVALAR MINING CORP.

AMENDED TO:

New Company Name

Principal Office (No./Street/Barangay/City/Town/Province)

1ESPLANADE SEASIDE BLVD. COR. J.W
DIOKNO BLVD. MALL OF ASIA COMPLEX
CBP-1A BGY. 076 ZONE 10, PASAY CITY.

ZIP CODE

COMPANY INFORMATION

Company Email Address	Company's Telephone Number/s	Mobile Number
N/A	857 0100	N/A

CONTACT PERSON INFORMATION

The designated person MUST be a Director/Trustee/Partner/Officer/Resident Agent of the Corporation

Name of Contact Person	Email Address	Telephone Number/s	Mobile Number
ATTY. REINIER S. QUIAMBAO	stllc.corplegal@smic.com	857 0100	09175893038

Contact Person's Address

10TH FLOOR ONE-ECOM BUILDING MOA COMPLEX PASAY CITY.

To be accomplished by CRMD Personnel

	Date	Signature
Assigned Processor		

Document I.D.

Received by Corporate Filing and Records Division (CFRD)

Forwarded to:

- Corporate and Partnership Registration Division
- Green Lane Unit
- Financial Analysis and Audit Division
- Licensing Unit
- Compliance Monitoring Division

AMENDED
ARTICLES OF INCORPORATION
OF

AVALAR MINING CORP.

Know All Men By These Presents:

The undersigned incorporators, all of legal age and majority of whom are residents of the Philippines, have this day voluntarily agreed to form a stock corporation under the laws of the Republic of the Philippines.

THAT WE HEREBY CERTIFY:

FIRST: That the name of this corporation shall be:

AVALAR MINING CORP.

SECOND: That the primary purpose of this corporation is:

To carry on the business of mining, milling, concentrating, converting, smelting, treating, preparing, exploring, prospecting, preparing for market, manufacturing, buying, selling, exchanging, or otherwise producing and dealing in gold, silver, copper, lead, zinc, brass, iron, steel, and all kinds of ores, metals and minerals, and other products and by-products thereof of any kind and description and by whatsoever process the same can be or may hereafter be produced and generally and without limit as to amount, to buy, sell, exchange, lease, acquire, deal and dispose, or secure options in and to lands, mines and mineral rights and claims and to conduct all activities appertaining thereto.

To undertake the search and discovery, exploration, development of minerals and engage in the business of mining in general, prosecuting these purposes directly of its own benefit or as an agent for, or independent contractor with, other entities, or indirectly through other entities engaged in the same process.

SECONDARY PURPOSES

1. To purchase, acquire, own, lease, sell and convey real properties such as lands, buildings, factories and warehouses and machineries, equipment and other personal properties as may be necessary or incidental to the conduct of the corporate activities, and to pay in cash, shares of its capital stock, debentures and other evidences of indebtedness, or other securities, as may be deemed expedient, for any activities or property acquired by the corporation;

2. To borrow or raise money from not more than 19 lenders including shareholders to meet the financial requirements of its business;

3. To invest and deal with the money and properties of the corporation in such manner as may from time to time be considered wise or expedient for the advancement of its interests and to sell, dispose of or transfer the activities, properties and goodwill of the corporation or any part thereof for such consideration and under such terms as it shall see fit to accept;

4. To aid in any manner any corporation, association, or trust estate, domestic or foreign, or any firm or individual, any shares of stock or any bonds, debentures, notes, securities, evidences of indebtedness, contracts, or obligations of which are held by or for this corporation, directly or indirectly or through other corporations or otherwise;

5. To enter into any lawful arrangement for sharing profits, union of interest, unitization or farmout agreement, reciprocal concession, or cooperation, with any corporation, association, partnership, syndicate, entity, person or governmental, municipal or public authority, domestic or foreign, in the carrying on of any activities or transaction deemed necessary convenient or incidental to carrying out any of the purposes of this corporation;

6. To acquire or obtain from any government or authority, national, provincial, municipal or otherwise, or any corporation, company or partnership or persons, such charters, contracts, franchises, privileges, exemptions, licenses and concessions as may be conducive to any of the objects of the corporation;

7. To establish and operate one or more branch offices or agencies and to carry on any of all of its operations and activities without any restrictions as to place or amount including the right to hold, purchase or otherwise acquire, lease, mortgage, pledge and convey or otherwise deal in and with real and personal property anywhere within the Philippines;

8. To conduct and transact any and all lawful activities, and to do or cause to be done any one or more of the acts and things herein set forth as its purposes, within or without the Philippines, and in any and all foreign countries, and to do everything necessary, desirable or incidental to the accomplishment of the purposes or the exercise of any one or more of the powers herein enumerated, or which shall at any time appear conducive to or expedient for the protection or benefit of this corporation.

9. To engage in, conduct and carry on the business of buying, selling, distributing, marketing at wholesale and retail, importing, exporting insofar as may be permitted by law, all kinds of goods, commodities, wares and merchandise of every kind and description such as but not limited to cement raw materials and equipments. Provided, the same shall not engage in solicitation of investments contracts from public investors.
(As amended on July 30, 2015)

THIRD: That the place where the principal office of the corporation is to be established or located at 1Esplanade, Seaside Blvd. cor. J.W. Diokno Blvd., Mall of Asia complex, CBP-1A, Brgy. 076 Zone 10, Pasay City 1300, Philippines.

FOURTH: That the term for which the corporation is to exist is fifty (50) years from and after the date of issuance of the certificate of incorporation.

FIFTH: That the names, nationalities, and residences of the incorporators are as follows:

Name	Nationality	Residence
EPITACIO B. BORCELIS, JR.	Filipino	Mayon St., Villa Susana Heights, Muntinlupa City
THEUNTHETH S. JAVIER	Filipino	No. 5 MC Briones corner Romualdez Sts., BF Homes, Quezon City
CHESTER T. BORDEOS	Filipino	No. 513 Brillantes St., Jackielouville Subd., Parañaque City

NOEL S. SANCHEZ	Filipino	N0. 51 Rancho Estate II, Concepcion II, Marikina City
CARLO O. ALAMPAY	Filipino	No. 50 Concepcion St., MBS Caloocan City

SIXTH: That the number of directors of the corporation is five (5) who are also the incorporators.

Name	Nationality	Residence
EPITACIO B. BORCELIS, JR.	Filipino	Mayon St., Villa Susana Heights, Muntinlupa City
THEUNTHETH S. JAVIER	Filipino	No. 5 MC Briones corner Romualdez Sts., BF Homes, Quezon City
CHESTER T. BORDEOS	Filipino	No. 513 Brillantes St., Jackielouville Subd., Parañaque City
NOEL S. SANCHEZ	Filipino	No. 51 Rancho Estate II, Concepcion II, Marikina City
CARLO O. ALAMPAY	Filipino	No. 50 Concepcion St., MBS Caloocan City

SEVENTH: That the authorized capital stock of the corporation is One Hundred Million Pesos (P100,000,000.00) in lawful money of the Philippines, divided into One Million (1,000,000) shares with the par value of One Hundred Pesos (P100.00) per share.

EIGHTH: That the following persons have subscribed to the authorized capital stock, and at least 25% of the authorized capital stock has been susbcribed and at least 25% of the total subscription has been paid as follows:

Name	Nationality	No. of Shares Subscribed	Amount Subscribed	Amount Paid
EPITACIO B. BORCELIS, JR.	Filipino	50,000	P 5,000,000.00	P 1,250,000.00
THEUNTHETH S. JAVIER	Filipino	50,000	5,000,000.00	1,250,000.00
CHESTER T. BORDEOS	Filipino	50,000	5,000,000.00	1,250,000.00
NOEL S. SANCHEZ	Filipino	50,000	5,000,000.00	1,250,000.00
CARLO O. ALAMPAY	Filipino	50,000	5,000,000.00	1,250,000.00
TOTAL		250,000	P25,000,000.00	P 6,250,000.00

NINTH: That no transfer of stock or interest which would reduce the ownership of Filipino citizens to less than the required percentage of the capital stock as provided by existing laws shall be allowed or permitted to be recorded in the proper books of the corporation and this restriction shall be indicated in all the stocks certificates issued by the corporation.

TENTH: That CARLO O. ALAMPAY has been elected by the subscribers as Treasurer of the corporation to act as such until her successor is duly elected and qualified in accordance with the by-laws; and that as such Treasurer, she has been authorized to receive for and in the name and for the benefit of the corporation, all subscriptions paid in by the subscribers.

ELEVENTH: That the incorporators undertake to change the name of the corporation as herein provided, or as amended thereafter, immediately upon receipt of notice or directive from the Commission that another corporation, partnership or person has acquired a prior right to use of the name or that the name has been declared as misleading, deceptive, confusingly, similar to a registered name or contrary to public morals, good customs or public policy.

In Witness whereof, we have set our hands this APR 03 2013 at MAKATI CITY.

(Sgd.)

EPITACIO B. BORCELIS, JR.
TIN- 103-433-196

(Sgd.)

THEUNTHETH S. JAVIER
TIN-101-303-792

(Sgd.)

CHESTER T. BORDEOS
TIN- 904-465-536

(Sgd.)

NOEL S. SANCHEZ
TIN-111-783-855

(Sgd.)

CARLO O. ALAMPAY
TIN-129-880-121

WITNESSES:

(Sgd.) Alex B. Dimla

ACKNOWLEDGMENT

Republic of the Philippines)
MAKATI CITY) S.S.

BEFORE ME , a Notary Public in and for MAKATI CITY, Philippines, this APR 03 2013, personally appeared:

Name	Tax Identification Number
EPITACIO B. BORCELIS, JR.	103-433-196
THEUNTHETH S. JAVIER	101-303-792
CHESTER T. BORDEOS	904-465-536
NOEL S. SANCHEZ	111-783-855
CARLO O. ALAMPAY	129-880-121

all known to me and to me known to be the same persons who executed the foregoing Articles of Incorporation and they acknowledged to me that the same is their free and voluntary act and deed.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my notarial seal on the date and at the place first above written.

(Sgd.)
BEN JOHN B. RAÑESES
NOTARY PUBLIC
UNTIL DECEMBER 31, 2014
PTR No. 5674241/01.07.2013/MAKATI CITY
IBP No. 922936/01.08.2013/QUEZON CITY
TIN-273-480-541 ROLL No. 59229

Doc. No. 390;
Page No. 78;
Book No. I;
Series of 2013.

SECRETARY'S CERTIFICATE

KNOW ALL MEN BY THESE PRESENTS:

I, **EPITACIO B. BORCELIS, JR.**, Filipino, of legal age, and with postal address at Mayon St., Villa Susana Heights, Muntinlupa City, being duly sworn, depose and state that:

1. I am the duly elected and qualified Corporate Secretary of **AVALAR MINING CORP.** (the "Corporation"), a corporation duly organized and existing under and by virtue of the Republic of the Philippines, with principal office located at 1Esplanade, Seaside Blvd. corner J.W. Diokno Blvd., Mall of Asia complex, Brgy. 076 Zone 10, CBP-1A, Pasay City;

2. To the best of my knowledge, no action or proceeding has been filed or is pending before any court involving an intra-corporate dispute and/or claim by any person or group against the Board of Directors, individual directors and/or major corporate officers of the corporation as its duly elected and/or appointed directors or officers or vice versa.

This SEP 28 2015 at MAKATI CITY.

EPITACIO B. BORCELIS, JR.
Corporate Secretary

SUBSCRIBED AND SWORN to before me this SEP 28 2015 at MAKATI CITY, affiant exhibited to me his Tax Identification Number 103-433-196.

ATTY. REINIER S. QUIAMBAO
NOTARY PUBLIC
UNTIL DECEMBER 31, 2016
PTR NO: 4758713 / 01.08.15 / MAKATI CITY
IBP NO: 0985092 / 01.08.15 / TARLAC CITY
TIN-238-251-699 ROLL NO. 62283

Doc. No. 186;
Page No. 37;
Book No. IX;
Series of 2015.

DIRECTOR'S CERTIFICATE OF AMENDMENT OF THE ARTICLES OF INCORPORATION OF **AVALAR MINING CORP.**

We the undersigned, the Chairman of the Board, the Corporate Secretary and a majority of the members of the Board of Directors of **AVALAR MINING CORP.**, do certify that the attached is a true and correct copy of the amended Articles of Incorporation of said corporation, duly approved and adopted by at least a majority of the Board of Directors and the unanimous vote of all stockholders owning and representing at least two-thirds (2/3) of the outstanding capital stock of the Corporation at the special meeting held on **July 30, 2015** at the principal office of the corporation.

The amended provision of the attached amended Articles of Incorporation refer to **Article II (Additional Secondary Purpose).**

IN WITNESS WHEREOF, we have hereunto affixed our signatures this SEP 29 2015 at MAKATI CITY.

NOEL S. SANCHEZ
Chairman of the Stockholder's Meeting/Director
TIN-111-783-855

THEUNTHETH S. JAVIER
Director/TIN-101-303-792

CARLO O. ALAMPAY
Director/TIN-129-880-121

CHESTER T. BORDEOS
Director/TIN-904-465-536

Attested by:

EPITACIO B. BORCELIS, JR.
Corporate Secretary of the Stockholder's Meeting/Director
TIN-103-433-196

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

SUBSCRIBED AND SWORN to before me this SEP 28 201[illegible], the following have exhibited to me their Tax Identification Number:

Name	Tax Identification Number
NOEL S. SANCHEZ	111-783-855
THEUNTHETH S. JAVIER	101-303-792
CARLO O. ALAMPAY	129-880-121
CHESTER T. BORDEOS	904-465-536
EPITACIO B. BORCELIS, JR.	103-433-196

ATTY. REINIER S. QUIAMBAO
NOTARY PUBLIC
UNTIL DECEMBER 31, 2016
PTR NO: 4758713 / 01.08.15 / MAKATI CITY
IBP NO: 0985092 / 01.08.15 / TARLAC CITY
TIN-238-251-699 ROLL NO: 62283

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