

# Dust Mitigation Plan

## Quarry SM59

July 2023

## Site Location

The quarry site is located in an area to the southwest of Mqabba known as *Tal-Madorba*, just off the perimeter of the runway of the airport. The quarry area and its surroundings are situated within the territory covered by the South Malta Local Plan (SMLP) which has been earmarked for the exploitation of the mineral resources. The geographical surroundings together with the immediate surroundings are presented in the aerial photo below.



**Photo 1 Aerial photograph of the Quarry site with the immediate surroundings**

The site has been subject to 24 years of mineral extraction of the Globigerina Limestone geological member. The soft stone quarry site has a surface area of approximately 7,500 square meters and mineral extraction has been completely exploited.

At present the quarry is being utilised for the recycling of mineral wastes to be re used for the construction industry. One of the impacts such operations is dust dispersion in the immediate surroundings of the quarry (around 100 meters).

In view of such impact the operator will be setting up a dust mitigation plan which will be effective during the operational hours of the quarry site. The aims of the Dust Management Plan are to:

- Minimise dust generation and migration from the site;

- Ensure nuisance caused to nearby receptors from dust is kept to a minimum;
- To develop a dust minimisation strategy that shall be implemented by the site management; and
- Ensure that operations at the site have consideration for potential dust generation.
- Inform continuing improvements to dust/ particulate control and site management at the site and update the Dust Management Plan detailing such improvements.

### **Dust Control Measures**

The following section outlines the control measures that will be undertaken on site to mitigate dust emissions from the identified sources of generation.

Dust is likely to be generated from:

- Vehicle movements in / around /out of the site. Tyres and exhausts may cause dust, it thus important to keep vehicle speeds down, keep vehicular path clear of mud, keep roads damp during dusty conditions; Power washing the wheels of the vehicles will help to reduce dust dispersion and also prevent mud and dirt from being spilled don to the access roads.
- Loading and tipping operations – During this process dust may be given off through impact, therefore it is encouraged for tipping heights to be kept to a minimum. The usage of a water cannon to wetten stockpiles will be deployed on site so as to mitigate the dust dispersion especially during windy days. Water sprinklers will be installed alongside the crusher conveyor belts and also hopper. Examples of such equipment which will be utilised on site is shown in the diagram below.



**Example of a Water cannon wetting stockpiles**



**Examples of dust sprinklers installed on the conveyor belts and crusher hopper**

**Diagram 1 Dust mitigation equipment to be used for the quarry site**

- Processing (Crushing, Screening) of soils, aggregates, concrete. Dust may arise due to impact (material against material, product coming off discharge belts. Material will be dampened during this process by means of water sprinklers integrated on the conveyor belt of the crushing machine to mobile to suppress any dust. This is shown in the diagram above.
- Handling and movement of stockpiles. Vehicles moving stockpiles will not over fill buckets / body of dumper, tipping heights will be kept low when emptying bucket;

**Means of Prevention**

In order to minimise potential generation of dust from the site, the following preventative control measures using best practicable means, shall be implemented by the site manager for the separately identified potential dust generating activities.

### *Vehicle Movements In/Out of Site*

- All haul and access roads within the site and at the site entrance shall be kept free from mud and debris at all times by manual clearing (Brooms, spades) and road sweeping. Mud and debris on access and haul roads shall be monitored daily by the site manager and cleaned when required. If this proves to be insufficient, a road sweeper will need to be provided.
- The site management shall ensure adequate measures are used throughout the site to dampen surfaces (application of water through hoses / bowser / mobile apps) during periods of dry weather. All vehicles and plant will be checked by the driver / operator to ensure that deposits of mud are not carried outside the site (signs of this will be visible on-site roads).

### *Loading and Tipping Operations*

- All wastes handled on site shall be done so in a controlled manner, with consideration given to the potential for dust generation at all times.
- Loading and tipping heights will be minimised to avoid uncontrolled dust emissions.
- All vehicles will be sheeted when entering and leaving the site.

### *Wind Blowing Across Stockpiles within the stock bay area*

- Where necessary and during periods of dry conditions, water will be deployed to dampen material. It is anticipated that during the summer months that wetting will be done on a daily basis while during the Winter months the frequency will be once every three days.
- Disturbance of the surface of the stockpiles will be minimised to maintain an intact surface crust. Stockpiles will only be located in the designated concrete block bays which act as windbreaks, stockpile heights are governed by planning.

### *Screening of Wastes*

- All inert handling/loading/screening operations on site shall be monitored by the site management, and if necessary appropriate measures shall be implemented to prevent dust generation.
- Where dust suppression systems are incorporated into plant/machinery, they should be used to minimise dust generation where appropriate and maintained in workable condition at all times.
- Operations around the operational machinery will be carried out in a controlled manner to prevent fall out of dust (Sprays around hoppers, nose bags on end of conveyor).
- Screening operations will take place within the designated area and materials wetted prior to activities that could lead to dust generation where necessary.

### **Equipment on site**

A mobile crusher will be installed on site in the area which is highlighted in green in the annexed site plan. Though the crusher will be a mobile one it will be affixed to this particular area within the quarry so that its operations will be stabilised. This equipment will be working with the electricity which is already present on the quarry site.

The crusher will be supplemented by one sieve and also a dedicated storage area for the crushed aggregates. These will be located in the area indicated in green on the site plan.

### **Site Management**

The site manager shall be responsible for the control and management of dust at the site. Site management shall ensure that all personnel operating on site are adequately trained to implement the dust control measures. If the control measures stated are implemented at the site then dust generation should be kept to a minimum.

- The site manager shall ensure that a visual inspection of the activities is carried out at regular intervals during operational hours to assess the extent of dust being generated. In circumstances where visual dust inspection identifies a significant dust source, the site manager shall adopt appropriate dust suppression measures to prevent or minimise the dust being generated.

- Dust suppression systems (mobile apps, plant suppression, Bowser dampening vehicular paths) and equipment used on site shall be maintained in good working order at all times.
- During high winds which will exceed Force 5, quarry operations are to cease until the weather will stabilise.
- Maintenance or repairs of dust suppression equipment and road / yard surfaces shall be carried out as soon as reasonably practicable and recorded within the relevant maintenance log.
- The operator will be installing covers for the crusher unit which is illustrated below.



**Sections of the crusher unit that will be covered to mitigate dust dispersion**

- All dust control equipment will be installed on site by end July 2023.

A timetable of the equipment which is to be installed on site is presented below

<b>Table 1 Installation of Dust Control Equipment Time Frames</b>		
<b>Equipment Type</b>	<b>Quantity</b>	<b>Installation period</b>
Water Cannon	1	July 2023
Power Washer	1	July 2023
Sprinkler System	1	July 2023

### **Conclusions**

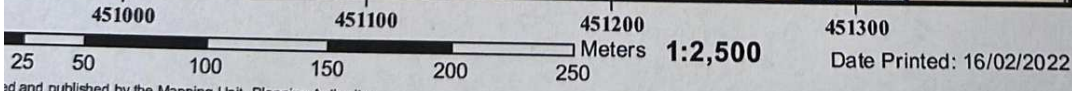
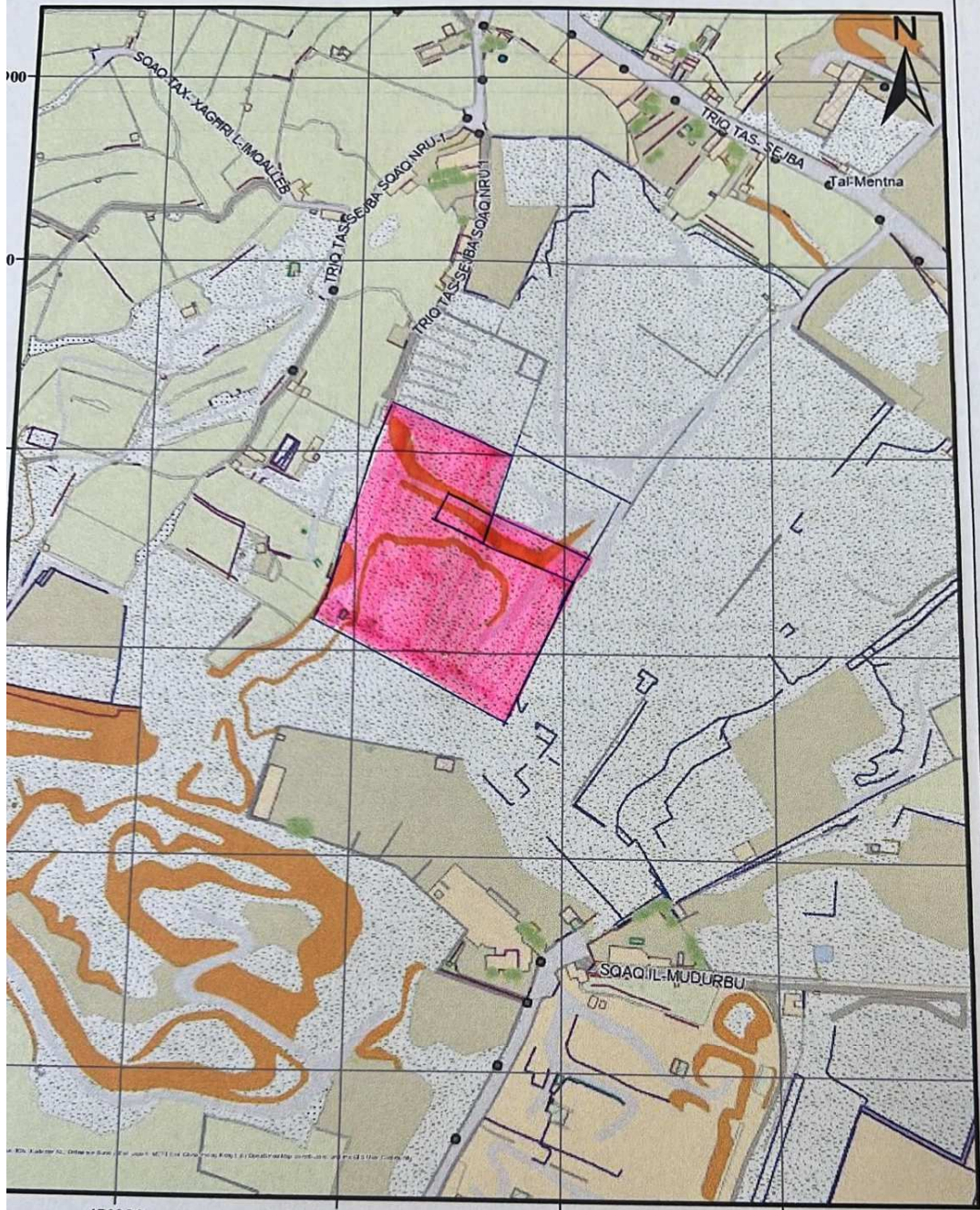
The site is well screened and is set in a remote area in an area which is being used for quarrying activities. It is to be noted that some of the stated control measures are already being implemented at the site. Dust from the site operations will be controlled through sensible site management controls including careful movement by experienced operators, use of water mister

(cannon sprayer) and water sprinkler equipment, containment to shelter other processing operations, limiting location of certain processing operations, and operation of best practise in terms of housekeeping operations.

Ongoing monitoring and review of the operations of this dust management plan by the management, with appropriate updating, will ensure continuing effective dust management without any adverse dust impacts off site.



# Annex 1



and published by the Mapping Unit, Planning Authority.  
 2.030 - SIntegraM data, (2018). Developing Spatial Data Integration for the Maltese Islands, Planning Authority.  
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 Data captured from: 2018 aerial photography, 2020 unmanned aerial vehicles(UAVs).  
 UTM Zone 33N EPSG: 32633 M.S.L. (Mean sea level). Scale factor at the central meridian 0.9996.  
 The central meridian has a false origin of 500,000m at 150 East of Greenwich.  
 Easting coordinates have an origin of 0m at the Equator.  
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**PLANNING AUTHORITY**  
 St. Francis Ravelin, Floriana.  
 Tel: + 356 2290 0000, Fax: +356 2290 2295  
[www.pa.org.mt](http://www.pa.org.mt), [mappingshop@pa.org.mt](mailto:mappingshop@pa.org.mt)

## Annex 2

