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# Mitigation Measures to Control Dust Emissions at the Zrar Ltd Quarry, Siggiewi.

**This Report follows the Application dated 13<sup>th</sup> May 2022 for the renewal and variation of EP 0020/09/D.**

**Report Presented to:** Mr Nicholas Formosa - Office Executive.  
Bonnici House,  
Sardine Street,  
Burmarrad SPB 6073, Malta.



**Report Date: 26 November 2022**

**VERSION: 1.2**

1.0 Objectives of this Report
<p>1.1 In an email message submitted to Mr Nicholas Formosa dated 16 May 2022, ERA requested the following details regarding the measures being taken and projected to be taken on site:</p> <p>1.1.1 Any mitigation measures that will be taken in order to limit dust emissions from the crushers.</p> <p>1.1.2 Any mitigation measures that will be taken in order to limit dust emissions from aggregate stockpiles</p> <p>1.1.3 If the site is equipped with wheel washing facilities (such as wheel wash or power washer).</p> <p>1.2 According to ERA, the proposed mitigation measures, as well as the timeframes when these will be implemented, shall be submitted in this report as a separate document in order that it would be recommended to ERA Board as an approved document, following which it would be published on the ERA website.</p> <p>1.3 As a Company policy, Zrar Ltd., are committed to mitigate against nuisance and particulate dust emissions in order to:</p> <p>1.3.1 protect the health and well-being of the on-site personnel,</p> <p>1.3.2 protect the receptors on the east side of the quarry,</p> <p>1.3.3 protect the environment notable the valley environs to the north of the quarry.</p>

2.0 Dust Mitigation at the Crushers.
<p>2.1 The stone crushers and the subsequent sieving operations are unlikely to generate dust particles which may potentially present a dust nuisance to the immediate environment.</p> <p>2.2 Mitigating against any possible occurrence are the following:</p> <p>2.2.1 the crushers are well below the general terrain ground level,</p> <p>2.2.2 they are in a secluded area, removed from the general commuting loading trucks,</p> <p>2.2.3 the crusher and sieve are generally enclosed in steel cylinders; most of the conveyors of the fixed crusher are enclosed in steel cylinders, however some of the conveyors can't be covered due to workability/practicability,</p> <p>2.2.4 the machines and walkways are constantly swept clean by the personnel working on the site,</p> <p>2.2.5 mobile crushers are operated within the quarry and their operation warrants that enclosures to mitigate against fine dusts is impractical; however the quarry shall undertake the following mitigation measures:</p> <p>2.2.5.1 operators are trained to reduce as much as possible and fine dusts,</p> <p>2.2.5.2 in cases when the generation of fine dusts shall be inevitable, temporary plastic sheets shall be erected around the crusher and the emitted fine dust shall either be vacuumed off or in cases of large volumes sprayed and swept to percolate into nearby rock fissures.</p> <p>2.3 Although most of the particle sizes of the emitted dusts are large enough to prevent their dispersion over long distances, mitigation against possible wide dispersion of fine dust is carried out as follows:</p> <p>2.3.1 all works which may potentially emit a substantial amount of fine dusts shall be enclosed in fine textile enclosures,</p> <p>2.3.2 any area where fine dusts are emitted or present shall be sprayed and the water swept and drained to percolate into nearby rock fissures.</p>

3.0	Dust Mitigation at the Aggregate Stockpiles.
3.1	The stockpiles are inherently moist and emissions of fine dust is unlikely.
3.2	The stockpiles are located in an area downwind from the prevailing north-westerly winds and the site is below the terrain level along the Triq il-Panorama. The road and buildings to the east and northeast are located quite a few metres away.
3.3	The stockpiles are in constant recharge with trucks unloading and loading the material. The truck loaders have clear instructions to disrupt the material as little as possible.
3.4	Tipping material from top is dumped just a few vertical meters which minimizes the disperse of fine dust.
3.5	In case of static stocks especially on long hot days, the stockpiles may be moistened from mobile sprinkler trucks. This is carried out twice a week.
4.0	Wheel and Road Washing Facilities..
4.1	The entrance and exit of the quarry consist of two carriageways:
4.1.1	an entry and exit weighbridge,
4.1.2	an entry and exit freeway for private company vehicles.
4.2	Both these carriageways are constantly kept dust-particles free by constantly sprinkling water by means of purposely built manual sprinklers along the major access roads within the quarry.
4.3	Furthermore, a full-time worker sweeps the roads constantly for any congealed dust and muds to keep the roads in constant cleanliness.

5.0	Legend of Site Plan 1.
5.1	Quarry Entry/Exit Gate leading to weighbridge and a freeway entrance.
5.2	White dual arrows, marked 1, 2, 3 and 4, show the major thoroughfares for trucks, which are kept free of accumulated dust and mud by frequent sweeping. The roads marked 1 and 2 are earmarked for frequent sprinkling with water and manual sweeping.
5.3	The crusher area is marked with a yellow circle.
5.4	The shaded area in yellow lines, on the western side of the quarry, indicates the spread of stockpiles which are in constant recharge activity.





