STUDY ON THE EFFECTIVENESS OF ENVIRONMENTAL POLLUTION CONTROL MEASURES USED IN METAL CRUSHERS LOCATED AT WELEHANDIYA AREA WITHIN KADUWELA MUNICIPALITY

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ABSTRACT

Twenty four (24) metal crushing industries are being operated approximately inside one Sq.km circle within Welehandiya area in Kaduwela Divisional Secretariat in Colombo district, Western Province, Sri Lanka. This area is basically mixed residential as observed and dwelling houses are located in mixed with commercial and industrial establishments.

With increasing demand for crushed granite to fulfill the requirement for major construction projects, metal crushers are being operated all days in each month since early morning and even during public holidays which results a situation of public nuisances due to excessive noise and dust generation in the local environment as a cumulative effect of crushing operations. Nuisance situation was aggravated and public outcries were critically emerged during the years 2008 &2009.

In 2009, Central Environmental Authority (CEA) got involved to remedy the situation after conducting a series of environmental counseling discussions with all stakeholders such as industrialists, aggrieved parties, local authority and technical organizations and several field investigations with the technical assistance of Industrial Technology Institute (ITI). It was understood that the improvements in the local ambient environment is required to protect the right of people for access to clean air and calm living environment. Technical advices on noise and suspended particulate matter reduction were provided by the ITI for all metal crushers in the Zone. This study was conducted to assess effectiveness of measures implemented to control the pollution situation and abate public nuisance

Considering the locating pattern of these metal crushers in the area and surrounding residences, it was divided into 03 zones named as Zone-1, Zone-2 and Zone-3 for the purpose of this assessment. Twelve, four and eight metal crushers are located in Zone-1, Zone-2 and Zone-3 respectively.

The methodology includes carrying out field investigations to assess the technical integrity of pollution control measures implemented to abate the nuisance situations, gathering information on public opinion on results of remedial measures and carry out measurements on concentration of suspended particulate matter (SPM) and noise levels to verify the effectiveness.

The distance from the Zone-1 to the nearest residence is about 120m and it is 170m to the temple. These crusher owners had been instructed to implement both dust and noise control measures. The distance from the crusher zone-2 to the nearest residence is about 220m and air pollution control measures had been recommended by the CEA during the year 2009 as revealed during this study. Nearby residences are situated about 150m

of distance from the Zone-3, and these metal crushers are located along the main road. Both dust and noise control measures were recommended by CEA for this zone.

It was revealed that , air pollution control measures implemented in some of the metal crusher plants in the crusher zones are not sufficient and also somewhat different to the technical recommendations that informed by the CEA .

It was revealed during this study that the noise pollution control measures implemented in all three zones including zone-2 are successful and comply with National Noise Control Standards published under the National Environmental Act.

The measurements revealed that dust emissions are under control at Zone-1 and Zone-3 except Zone-2. But Zone-1 includes a critical open area where strong cross winds are blowing across thus dust particles get airborne. Implemented dust control measures have been less effective at the Zone-2 which is an open area and affected by strong winds. So the environmental characteristics are different at each zone and implemented pollution control measures have been discussed here in this study with further recommendations.

It has been observed that , there exists a trend to study the pollution control measures implemented by these metal crusher owners and to copy all these pollution control measures specially with respect to noise control measures such as plant enclosures. As such, the measures adopted by crusher plants in this zone have left a classic example for other metal crusher owners to learn how to control dust and noise pollution arising from the crushing machines.