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**Preparation of a Plan for Environmental
Management of the Heraliyawala
Industrial Park in the North Western
Provincial Council Area.**

By



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This Thesis was submitted to the Department of Civil Engineering of the University of Moratuwa in partial fulfillment of the requirements for the Degree of Masters in Environmental Engineering and Management

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This thesis has not been previously submitted in part or whole ,for other academic qualification at any University or Institution.

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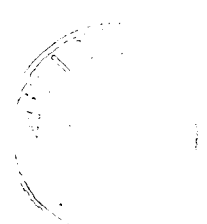
Abbreviation and Acronyms

ACGIH	American Conference of Governmental Industrial Hygienists
BOD	Biochemical Oxygen Demand
BOI	Board of Investment of Sri Lanka
° C	Centigrade
CEA	Central Environmental Authority
COD	Chemical Oxygen Demand
IEC	International Electro technical Commission
ISB	Industrial Services Bureau
L-AeqT	Equivalent Continuous Sound Pressure Level A weighted in time T
mg/l	milligrams / litre
mg/ m ³	milligrams/cubic meter
ntu	nephelometric turbidity unit
NBRO	National Building Research Organization
NIOSH	National Institute of Occupational Safety & Health
NWPEA	North Western Province Environmental Authority
ppm	parts per million
SPM	Suspended Particulate Matter
TDS	Total Dissolved Solids
TS	Total Solids

TSS	Total Suspended Solids
TNTC	Too Numerous To Count
TLV	Threshold Limit Value
$\mu\text{s/cm}$	microseimens/centimeter
V/V	Volume/Volume
WBGT	Wet Bulb Globe Temperature
WHO	World Health Organization



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Abstract


This study was done to assess the environmental, hygienic and social condition and suggest methods of improvement of unsatisfactory aspects in the Heraliyawala Industrial Park which is one of the Industrial Estates in Kurunegala district. Assessment of the present status of aspects such as drinking water, wastewater, noise, dust, solid waste etc., was carried out in several industries within the estate. Management of the site and other infrastructure facilities, types of factories and their functions were studied with officials of the Industrial Services Bureau (ISB). Relevant legislation and other requirements concerning environment were obtained from the Provincial Environment Authority, North Western Province, at Kurunegala.

A survey was carried out in selected factories after the detailed, study of the industries at the Industrial Park. Collection of test samples of water, wastewater, dust samples and measurement of noise, heat stress, oxygen level, ammonia concentration were done at the site. Some parameters of water & wastewater were tested at the site using direct reading type instrument and for other parameters samples were tested at the National Building Research Organization (NBRO). Weighing of dust samples and necessary calculations were done at the Occupational Hygiene Division of the Department of Labour.

The test results and observations were compared with International and Local Standards such as WHO guideline values, standards of the Board of Investment of Sri Lanka (BOI), Regulations of the Central Environment Authority (CEA) etc., in order to assess the environment

within the estate. Social studies were limited to traveling and residential facilities of employees. During the survey, discussions were done with the management as well as employees and relevant information was collected .

Drinking water supply and the maintenance of the distribution system, wastewater collection and other maintenance work, water quality in the canal at the boundary of the site into which the factory effluents are discharged were discussed and recommendations were given separately under the Management Plan. Further, remedial measures for control of Noise, Heat, Dust, Ammonia concentration etc., were also proposed under the Management Plan.

Solid waste management is one of the issues identified, where waste tyre particles, polythene , garbage collection and disposal, waste burning are the problems encountered. Proposals were also made regarding hygienic matters such as  protection of workers against dust , noise and ammonia gas. Personal protective equipment (ppe) were also illustrated.

With respect to social aspects, it was found essential to improve the public transport system to the site for the benefit of the employees. Residential facilities should be provided to the employees who are living at a distance of 30 km .

It is very essential to monitor work which are recommended to control all the unsatisfactory conditions, by respective authorities.