

## Declaration

I hereby declare that this submission is my own work and that, to the best of my knowledge and behalf, it contains no material previously published or written by another person nor material which to substantial extent, has been accepted for the award of any other academic qualification of a university or other institute of higher learning except where acknowledgement is made in the text.



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Amila Jeevan Wijayawardhana

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## Nomenclature

BTEX	Benzene, Toluene, Ethyl Benzene, Xylene
$C_{in}$	Inlet Concentration ( $gm^{-3}$ )
$C_{out}$	Outlet Concentration ( $gm^{-3}$ )
C/N	Carbon to Nitrogen ratio
$CFU g^{-1}$	Colony Forming Units per gram
DEA	Di ethyl amine
DMA	Di methyl amine
DMDS	Di methyl di sulfide
DMTS	Di methyl tri sulfide
EBRT	Empty Bed Residence Time
EC	Elimination Capacity ( $gm^{-3}h^{-1}$ )
GC-MS	Gas chromatography-Mass spectrometry
$H_2S$	Hydrogen Sulfide
$K_s$	Half saturation constant
$K_2HPO_4$	Potassium di hydrogen ortho phosphate
$MgSO_4 \cdot 7H_2O$	Anhydrous magnesium sulfate
$NH_3$	Ammonia
$NH_4Cl$	Ammonium chloride
$(NH_4)_2 SO_4$	Ammonium sulfate
OU	Odour units ( $m^3h^{-1}$ )
PVA	Poly Vinyl Alcohol
ppb	parts per billion
ppm	parts per million
Q	Gas flow rate ( $m^3h^{-1}$ )
RE	Removal efficiency (%)
TEA	Tri ethyl amine
TMA	Tri methyl amine
TOC	Total Organic Carbon
TRS	Total reduced sulfer
V	Biofilter media volume ( $m^3$ )

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