

NCASI WASTEWATER HYDROGEN SULFIDE EMISSIONS SIMULATOR (H2SSIM)

Version 1.3

Data Type 1. Site Identification

Company Name	Georgia-Pacific
Facility Name	Toledo
Basin Name	WWTP

Data Type 2. Model Zone Information

Number of Zones	4
Zone Location of Hardpipe	3
Type of Basin	ASB

Data Type 3. Load Characteristics

<i>Loading Characteristics</i>	Main Influent	Hardpipe	Units
Flow	12.24	0.6696	MGD
Total Sulfide	1.052	69	mg/L
Sulfate			mg/L

Data Type 4. Atmospheric Conditions

Windspeed	3.5	mph
Ambient Temperature	45.3	F

Data Type 5. Zone Physical and Chemical Conditions

<i>Zone Condition</i>	Zone 1	Zone 2	Zone 3	Zone 4	Units
Dissolved Oxygen	2.3	2.41	3.07	3.3	mg/L
Temperature	25.9	25.9	20.2	19.9	C
pH	8.3	7.9	8	7.9	s.u.
Redox Condition	Aerobic	Aerobic	Aerobic	Aerobic	
Length	862	581	1085	625	feet
Width	389.1	269.9	903.3	348.5	feet
Depth	10.8	11.1	10.9	11.1	feet
Mixing	High	High	High		
Number of Aerators	14	10	19	1	
Total Horsepower	1050	400	1425	40	HP
Impellor Size	1.67	1.67	1.67	1.67	feet
Impellor RPM	1180	1180	1180	1180	RPM
Diffused Air Flow					cms
Weir Height	0	0	0	0	feet

H2SSIM Results

Basin Emissions		Units
Total Emissions (H ₂ S)	0.035	gms/s
Total Emissions (H ₂ S)	2430.1	lbs/yr
Total Emissions (H ₂ S)	1.2	tons/yr
Total Emissions (H ₂ S)	1.1	tonnes/yr
Emission Flux (H ₂ S)	7.0	gms/m ² yr

Zone Emissions	Zone 1	Zone 2	Zone 3	Zone 4	Units
Zone Emissions (H ₂ S)	0.01	0.00	0.02	0.00	gms/s
Zone Emissions (H ₂ S)	591.3	246.0	1357.6	235.3	lbs/yr
Emission Flux (H ₂ S)	8.6	7.7	6.8	5.27	gms/m ² yr
Liquid Conc. (Total Sulfide)	0.002	0.000	0.004	0.000	mg/L
Liquid Sulfide Load (lbs/yr)	13.000	1.300	21.900	1.200	lbs/yr

Percent Inlet Sulfide Removed	98.6%
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Current Parameters	
kgen	0.25
ThetaGen	1.06
KDO	0.05
KSO4	10
kanox	0.006
ThetaOx	1.05
m	1
n	0.2
MLVSS	2500
O ₂ Transfer Coeff.	2
alpha 1	0.83
alpha 2	0.6