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No. P&H/ENS/TNAU/CBE/SPB / Analytical Result/2021 dt.-25.10.2021

Sir,

Sub: SPB - Analytical report - Soil & water samples - Benchmark sites - Sending - Reg.

I herewith enclose the analytical results of the monitoring soil samples (4 Nos.) and water samples (6 Nos.) collected and handed over by Seshasayee Paper and Boards limited, Tirunelveli unit on 29.06.2021 for your kind persual.

Manah
25/10/21
Professor and Head
Department of Environmental Sciences

V. P. S.
25/10/21

To

The Managing Director
Seshasayee Paper & Boards Ltd.
Erode-7.

STUDY ON "SOIL AND GROUND WATER CHARACTERISTICS OF TREATED WASTE WATER IRRIGATED LANDS" OF SESHASAYEE PAPER AND BOARDS LIMITED, UNIT II: TIRUNELVELI

Mill has collected and handed over the ground water samples from three piezometric wells and two open dug wells along with four soil samples collected from effluent irrigated locations of mill's vicinity.

I. Analysis of Ground water and Treated Effluent:

Date of sampling : 22.06.2021

Sl. No	Parameters	UoM	Sample No.					
			1	2	3	4	5	6
1.	pH	-	7.82	8.15	7.79	7.69	7.71	7.74
2.	EC	dSm ⁻¹	0.44	0.50	0.33	0.24	0.26	0.63
3.	Turbidity	NTU	1.7	1.2	1.1	1.3	1.0	2.6
4.	Total Dissolved Solids	ppm	283	320	212	154	167	404
5.	Chlorides as Cl	ppm	132	156	198	202	207	263
6.	Total Hardness as CaCO ₃	ppm	106.8	132.4	81.7	117	101.1	92
7.	Calcium Hardness as Ca	ppm	65.4	80	60.3	94.4	51.4	49.2
8.	Magnesium Hardness as Mg	ppm	41.4	52.4	21.4	22.6	49.7	42.8
9.	Total Alkalinity as CaCO ₃	ppm	30	44	18	20	21	28
10	Sulphate as SO ₄	ppm	61	53.5	57.5	63	70	65

Sample Details


- 1: Piezometric well at west boundary mill
- 2: Piezometric well near Cooling Tower
- 3: Piezometric well at Lorry Parking
- 4: Piezometric well at Mango farm
- 5: Open well at Mango farm
- 6: Treated Effluent from ETP outlet

II. Analysis of Soil samples irrigated with treated paper mill effluent

Date of sampling : 24.06.2021


S.No	Parameters	West boundary of mill	Near Cooling Tower	Lorry parking	Mango farm
1	pH	7.12	7.15	7.23	6.78
2	EC (dS m ⁻¹)	0.11	0.15	0.12	0.17
3	Organic carbon (%)	0.67	0.64	0.76	0.71
4	Available nitrogen (kg ha ⁻¹)	258	272	289	274
5	Available phosphorous (kg ha ⁻¹)	12.3	12.2	13.3	12.8
6	Available potassium (kg ha ⁻¹)	282	289	296	218
7	Exchangeable Ca (cmol (p ⁺) kg ⁻¹)	0.78	1.02	1.47	1.39
8	Exchangeable Mg (cmol (p ⁺) kg ⁻¹)	0.88	0.76	1.07	1.1
9	Exchangeable Na (cmol (p ⁺) kg ⁻¹)	0.12	0.14	0.18	0.11
10	Exchangeable K (cmol (p ⁺) kg ⁻¹)	0.27	0.42	0.31	0.38
11	Bacteria (x 10 ⁶ CFU g ⁻¹ of soil)	09	12	17	14
12	Fungi (x 10 ⁴ CFU g ⁻¹ of soil)	11	09	08	12
13	Actinomycetes (x 10 ² CFU g ⁻¹ of soil)	01	02	01	02

In order to describe ground water and soil quality of the effluent irrigated area, samples have been analyzed and investigated in the light of "ground water modeling". Study report indicates that the usage of treated effluent wastewater of M/s. Seshasayee Paper and Boards Limited, Unit II: Tirunelveli is not having any significant adverse effect on the soil and ground water quality. The treated effluent water is safe to use and their characterization values are within the permissible limit of standards given by the BIS.


25/10/21

Professor and Head

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TNAU, Coimbatore


25/10/21