



Opportunities for Water Reuse in Bacau

Sources and Potential Receivers



Opportunities for Water Reuse in Bacau

Treated Industrial Wastewater Source

- Industry A
- Wastewater is treated using a membrane bioreactor (MBR) and an ultraviolet reactor (UV) to reduce the pollutant discharge
- Wastewater generation: 1300 m³/day
- Suggested quantity for wastewater reuse: 390 m³/day

The screenshot shows a software interface titled "Edit Waste Stream" with a close button (X) in the top right corner. The interface displays a table of water quality parameters for a "Liquid" waste stream. The table has two columns: "Property" and "Value". Each row includes a dropdown menu for the property name, a text input field for the value, a unit, and a red trash icon for deletion. At the bottom of the table is an "Add Property" button. The bottom of the interface features three navigation buttons: "Back" (with a left arrow), "Cancel" (with an X), and "Next" (with a right arrow).

Property	Value	Unit
pH	7.62	N/A
TSS	1.03	mg/L
Alkalinity	57.1	mg/L
COD	0.01	mg O ₂ /L
Nickel	3.28	µg/L
Lead	0.03	µg/L
Total Nitrogen	157	mg/L
BOD	24.3	mg/L

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Potential Treated Wastewater Receivers

- User A - Municipality Bacau – Department Public Domain
 - A natural park under the administration of the Municipality of Bacau, close to Industry A.
 - Use: Park Irrigation
 - Estimated Quantity of Water Reuse: 200 m³/day
- User B - Municipality Bacau – Streets Administration
 - Municipality Bacau has a special department in charge with street washing. Bacau has more than 300 streets under administration.
 - Use: Streets Washing (various locations, depending on street washing daily journal)
 - Estimated Quantity of Water Reuse: 130 m³/day

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Potential Treated Wastewater Receivers








- User C
 - Garden Irrigation
 - Estimated Quantity of Water Reuse: 30 m³/day
- User D
 - Car Washing
 - Estimated Quantity of Water Reuse: 30 m³/day

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Water Quality Requirements

- NTPA – 001/2002 – Technical quality norms for the wastewater discharged in natural water bodies
- "Potable water quality – microbiological, chemical and indicators – Law 458/2002 with amendments (EC Directive 98/83)

Liquid

	Operator	Value		
TSS	LessThan	30	mg/L	
Total Nitrogen	LessThan	100	mg/L	
Lead	LessThan	800	µg/L	
Nickel	LessThan	500	µg/L	
COD	LessThan	1000	mg O2/L	
Alkalinity	LessThan	1	mg/L	
pH	LessThan	10	N/A	

Opportunities for Water Reuse in Bacau

Economic Data

- The price of 1 m³ of potable water (since December 2023) distributed by local utility in the public network, including Industry A, is 8.62 RON, or approximately means 1.73 euros.
- The price of 1 m³ of wastewater, as charged by the local treatment utility, is 1.30 euros
- The price of transportation of 1m³ of water, as quoted by local utility in Bacau is 0.46 euros.
- The estimated treatment cost of 1m³ of wastewater for the proposed treatment train to be installed in Industry A facilities is approximately 3 euros.

Potential Symbiotic Schemes

Current Data

Technically Feasible Liquids Solutions								Excel	CSV	Print	Column visibility ▾
Show 10 entries								Search:			
Waste Stream Name	Matching Liquid Amount (%)	Matching Liquid List	Straight Distance (Km)	Collection Cost (€/Year)	Transportation Cost (€/Year)	Management Cost (€/year)	Is Economically Feasible				
Treated Wastewater	83.33	pH,COD,Nickel,Lead,...	2.40	32850	1143	9955	⚠ Not Feasible				
Treated Wastewater	83.33	pH,COD,Nickel,Lead,...	1.39	32850	663	9955	⚠ Not Feasible				
Treated Wastewater	71.43	pH,TSS,COD,Nickel,L...	2.52	21900	799	6636	⚠ Not Feasible				
Treated Wastewater	75	pH,TSS,Lead	2.52	30000	1094	9091	⚠ Not Feasible				

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- None of the technically feasible schemes is economically viable due to the low price of potable water, in combination with the high treatment cost.

Potential Symbiotic Schemes

Reduced Treatment Cost (2€ per 1m³ of wastewater)

Technically Feasible Liquids Solutions								Excel	CSV	Print	Column visibility ▾
Show 10 entries								Search: <input type="text"/>			
Waste Stream Name	Matching Liquid Amount (%)	Matching Liquid List	Straight Distance (Km)	Collection Cost (€/Year)	Transportation Cost (€/Year)	Management Cost (€/year)	Is Economically Feasible				
Treated Wastewater	83.33	pH,COD,Nickel,Lea...	2.40	21900	1143	9955	⚠ Not Feasible				
Treated Wastewater	83.33	pH,COD,Nickel,Lea...	1.39	21900	663	9955	⚠ Not Feasible				
Treated Wastewater	71.43	pH,TSS,COD,Nickel...	2.52	14600	799	6636	✅ Feasible				
Treated Wastewater	75	pH,TSS,Lead	2.52	20000	1094	9091	✅ Feasible				

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Thank you

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