



MICROBE-LIFT® Technology Eliminates the Need for Capital Investment at a Rendering Plant in Guatemala

Location: ARECA’s Frisa Rendering Plant, Palin, Guatemala

Background: The facility is a rendering plant, utilizing a limited waste water system. The basic design has a cooling tower, from which the water passes through a grease trap and then into an aeration tower. The water is then discharged into a series of three small lagoons, with a retention time that is calculated to be between 10 and 15 days based on a system volume of 110,000 gallons in the tanks and lagoons and the flow which was believed to vary between 6,857 and 11,428 gallons per day.

Objective: This plant contacted the technical representative at **Ecological Laboratories Inc.** to determine if bioaugmentation could lower the effluent COD to avoid the need to expand their system. The local regulations had targeted a 50% reduction by 2014 and an additional 50% reduction by 2024 for every facility in the river basin.

After thorough evaluation of their system, **Ecological Laboratories Inc.** developed a treatment plan using **MICROBE-LIFT®/IND** as follows:

Location	Volume Gallons	Week #1 Gal/week	Weeks #2-4 Gal/week	Maintenance Gal/week
Aerator #1	10 m ³	2	1	½
Lagoon #1	120 m ³	2	1	½
Lagoon #2	120 m ³	1	½	½
Lagoon #3	120 m ³	1	½	½
Total	370 m ³	6	3	2

Results Achieved: From the initial application of **MICROBE-LIFT®/IND**, the effluent COD was reduced by 74% while the effluent BOD was reduced by 86%. (See chart below)

Parameter	Influent	Effluent (April 1)	Effluent (June 6)
COD mg/l	6,290	1,420	363
BOD mg/l	5,700	1,140	164
Improvement		74%	86%

Based on the first 5 weeks of the plan, treatment with **MICROBE-LIFT®/IND** was able to meet the 2024 goals without any further capital investment, while eliminating odor.

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Fig. 1: These pictures taken on 5/22/09 (above) and 7/1/09 (below) show the condition of the three lagoons after treatment compared to during treatment. Note the condition of the lagoons improve from the first to the third lagoon in the series.

Ecological Laboratories, Inc. also recommended that by constructing a simple block wall one meter high to increase the lagoon depths, they could increase the retention time to provide an anticipated effluent discharge below 100 mg/l COD and 50 mg/l BOD.

For more information on **MICROBE-LIFT®** Technology contact
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