Report of Tests and Observations at Bayview Wildwood Resort Sewage Lagoon Using BIOLOGIC®SR2

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REPORT OF TESTS AND OBSERVATIONS AT BAYVIEW - WILDWOOD RESORT SEWAGE LAGOON USING BIOLOGIC® SR2

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Abstract

Remarkable decreases in the overall BOD and Suspended Solids removal efficiencies were observed with the addition of **BIOLOGIC® SR2** to the facultative sewage lagoon. The results were so dramatic even visual observation undeniably demonstrated the effectiveness of **BIOLOGIC® SR2** with the transformation of the sewage lagoon effluent into a liquid with incredible clarity.

BIOLOGIC®SR2 was also very effective in the elimination of any offensive odors.

Key Words

Facultative Lagoon, Odor Control, Removal Efficiencies, BOD, Suspended Solids

Introduction

Bayview-Wildwood Resort and Conference Center in Port Stanton, Ontario discharges wastewater to a lagoon owned and operated by them.

The maximum capacity of this lagoon is approximately 8,880 m^3, receiving wastewater from 50 to 500 people at a time. The lagoon is discharged to its receiving stream twice a year, once in the spring and once in the fall. During the discharge period, (usually between 6 and 10 days), the flow from the Resort is diverted to a smaller, temporary holding pond. The wastewater is allowed to sit in the large lagoon for approximately 30 days with no new influent entering the system. At this time a sample is taken called the "Pre-treatment" sample and is tested as to the amount of Alum required to be added for the wastewater to meet the Ministry of Environment discharge criteria. Once the dosage is determined Alum is added to the lagoon. 24 hours after Alum addition, a sample is taken, called the "Post-treatment" sample. If this wastewater meets the discharge criteria, effluent discharging is commenced. During the discharge period three samples of the effluent are analyzed.

The lagoon is discharged until the liquid level drops to the level of the outlet (approximately 1.5m below the maximum liquid level). Once discharge is complete, approximately 1500 m^3 of residue is left on the bottom of the lagoon consisting mostly of settled solids.

Objectives

The objective of this trial was to observe the effects that **BIOLOGIC®SR2** had on the overall treatment efficiency of the system, including odor control, BOD and SS removal efficiencies.

BIOLOGIC® SR2 was also expected to reduce the volume of solids residue left on the bottom of the lagoon that would result in less frequent solids removal required, thus reducing the operating cost of the facility.

Methods

BIOLOGIC® SR2 was spray applied to the surface of the lagoon on July 29, 1991

Three days after the application of **BIOLOGIC® SR2** any odor previously present was eliminated.

The fall 1991 discharge analysis were made approximately 3 months after the application of **BIOLOGIC®** SR2.

Results and Observations

Pre-Treatment Results

Discharge	BOD (mg/L)	SS (mg/L)
Fall 1991	8	15
Fall 1990	21.3	19
Fall 1989	21.5	30.1
1989 + 1990 Average	21.4	24.5

Post-Treatment Results

Discharge	BOD (mg/L)	SS (mg/L)
Fall 1991	4	4
Fall 1990	3.1	12
Fall 1989	16.5	36
1989 + 1990 Average	9.8	24

* results after the application of **BIOLOGIC® SR2**

Discussion/Conclusions

By comparing the pre-treatment results averaged over the fall discharges for 1989 and 1990 we can see a significant decrease in the BOD and Suspended Solids in 1991 with the application of **BIOLOGIC® SR2**. The BOD dropped from an average of 21.4 mg/L to 8 mg/L, a decrease of 62%. The Suspended Solids dropped from an average of 24.5 mg/L to 15 mg/L, a decrease of 39%. The superintendent of the facility has noticed a remarkable improvement in the clarity of the effluent indicating a substantial drop in the Suspended Solids and Turbidity.

This notable decrease in the pre-treatment results of the lagoon is also reflective in the quality of the post-treatment and eventual discharge effluent of the facility. In 1991 the BOD in the discharge had dropped to 4 mg/L from an average of 9.8 mg/L previously, a 59% decrease. The Suspended Solids in the effluent have also plummeted from an average of 24 mg/L to 4 mg/L, a decrease of over 83%.

From these results it may be concluded that **BIOLOGIC® SR2** has a tremendous positive effect on the efficiency of BOD and Suspended Solids removal in a facultative lagoon. Removal efficiency improvements of well over 50% in the final effluent can be expected with the use of **BIOLOGIC® SR2**.

BIOLOGIC®SR2 was also very effective in the elimination of any offensive odors previously being discharged from the lagoon.