

CASE STUDY

TREATMENT OF A SERIES OF LAGOONS WITH BCP95 AND BCP655

BACKGROUND

In order to accelerate the treatment of a series of lagoons (aerobic and anaerobic) at a landfill site in Quebec, a treatment program based on nutrient balance and selective bioaugmentation was instituted. The program was based on the physical and chemical properties of the incoming water, and the volumes and flow rates of the lagoons. The anaerobic lagoon had been sampled for a period of 6 months and results showed that phenol, nitrogen ammonia, COD and BOD levels were considerably higher than the allowable limits.

TREATMENT

First the balance of nutrients (C:N:P) in the lagoons was adjusted with the addition of phosphoric acid. Then calculated amounts of BCP95 and BCP655 were added, along with calcium nitrate to help boost the initial seeding. Products for cold temperatures were used as this treatment took place at water temperatures lower than 10°C. The water soluble pouches of bacteria were added to the surface of the lagoon and the water in the lagoon was kept circulating with a pump. The lagoon was tested 5 to 7 days after initial treatment to check BOD, COD, nitrogen ammonia, phenol and residual phosphorous levels. A week after treatment start-up, maintenance dose of BCP95 and BCP655 were added at the entrance to the lagoon. This sequence of treatment was repeated every 5 to 10 days until readings reached the allowable contaminants level and water was then release to the environment thus limiting the risk of overflow of the lagoon during the rainy season.

RESULTS

Test results during and following the treatment with BCP95 and BCP655 showed that phenol, nitrogen ammonia, COD and BOD levels were reduced below the allowable discharge limit.

CONCLUSIONS

BCP95 is effective in increasing the efficiency of phenol removal from incoming contaminated water in both cold (below 10°C) and warm waters.