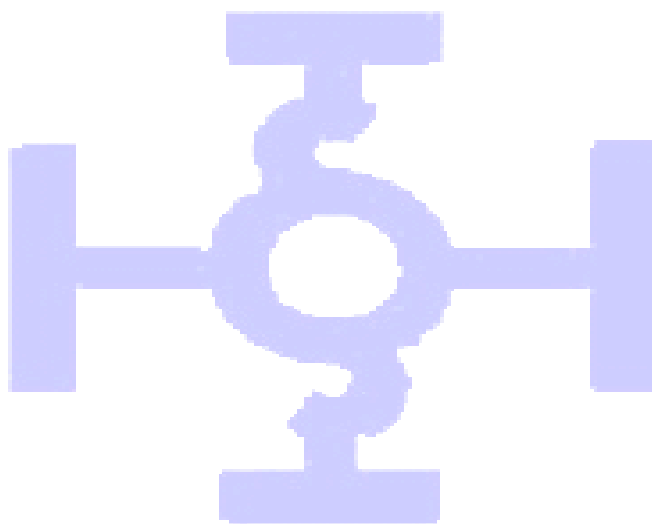


*ISO-Ing Technologies Limited*

品管工程有限公司

隔油池污水水質處理方案

環 保 工 程



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香港 馬鞍山 郵政信箱20號

電話：2635 2268 ; 2778 2723 ; 8103 9811 (查詢熱線)

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## 隔油池污水水質處理方案

### 1. 公司簡介

敝公司核心業務為環保工程，致力改善水質、空氣和噪音等環境污染問題，以先進科技為客戶專門提供優質的產品，以豐富經驗的技術人員為你們送上最合心意的服務。

### 2. 污水改善服務

自一九九五年起，敝公司提供多項顧問服務，利用不同方法處理污水，為不同餐廳改善水質。我們研究了不同方法，並確定了最有效的處理污水方案。近年，香港環境保護署實施更嚴格的污水控制，更頻密地檢查餐廳食肆的水質，繼而對排放之污水未能達到要求者作出檢控，一經定罰，最高罰款額為港幣四十萬元。各東主當前急務是以有效方法處理排放之污水，以免被環保署檢控。敝公司擁有先進科技，能發展及提供你們更有效的改善水質服務。

#### a) 處理方案

- 專業技工安裝「隔油池藥水泵」。藥水泵以乾電池驅動，具有預設時間功能，能安全地自動運作。



- 每日以「隔油池藥水泵」注入生物藥水於隔油池中。藥水由美國進口，持有美國農業局頒發的「安全成份證書」，能有效減低水質污染。

- 每季在不同餐廳食肆的排放污水點抽取水質樣本。



- 專業技工利用儀器進行測試及分析。 根據香港環境保護署要求，每季應進行以下測試及分析：








▼ 量度 C.O.D. 的儀器 ▼

- 生化需氧量 (B.O.D.)
- 化學需氧量 (C.O.D.)
- 油脂 (O&G)
- 懸浮固體 (S.S.)
- 酸鹼值 (pH value)



量度 pH value 的儀器 ►

- 如有需要，我們會於水質測試後，調教生物藥水之份量，並由敝公司提供「環境管理」(Environmental Management) 顧問服務一次，以減低隔油池之負荷。
- **申請減免「污水附加費」：** 我們可代為向渠務署申請減免「污水附加費」，但 貴食肆需負責上訴之所有費用，包括但不限於污水水質測試費用等等。
- 敢公司所提供「污水水質處理方案」之「環保備忘錄」，詳細紀錄有關貴食肆改善水質的資料，方便香港環境保護署職員參閱。 此備忘錄會給予香港環境保護署良好印象，能表達出 貴食肆對改善水質的決心和誠意。

 朗廷酒店 香港	 香港南華酒店 THE SOUTH CHINA HOTEL HONG KONG	 MANDARIN ORIENTAL THE HOTEL GROUP	 HONG KONG 18 86 FOOTBALL CLUB
 京都 KINTOKO	 香港 美心	 KFC	 McDonald's
 鮑·糖·亭 INAHO TEI BOW TIE SWEET RESTAURANT	 KAMPERY 金百加	 余仁生 Eu Yan Sang	 天后宮

如 貴公司對我們的產品及服務有興趣，歡迎回覆傳真 或 致電 2635 2268  
聯絡 蔡一民 博士或 韋燕玲 小姐。

### 回覆傳真 (2635 2028)

寄件者：\_\_\_\_\_ 日期：\_\_\_\_\_

職位：\_\_\_\_\_ 電話：\_\_\_\_\_

公司名稱：\_\_\_\_\_ 傳真：\_\_\_\_\_

約見日期及時間：\_\_\_\_\_年\_\_\_\_\_月\_\_\_\_\_日 上午/下午\_\_\_\_\_時 \_\_\_\_\_分

查詢之產品或服務：\_\_\_\_\_

污水附加費收費表

RELEVANT ORDINANCE, GUIDELINE AND REFERENCE MATERIAL  
環保條例、標準及相關參考資料

TRADE EFFLUENTS SURCHARGE RATE MATRIX FOR WATER CONTROL ZONE  
適用於水質管制區的標準工商業污水附加費收費率矩陣

CODs(g/m <sup>3</sup> ) 化學需氧量 (沉澱)		COD <sub>Cr</sub> s (g/m <sup>3</sup> ) 化學需氧量 (總數) 與化學需氧量 (沉澱) 的差值 (克/立方米)															
0	100	130	160	200	250	320	400	500	630	790	1000	1260	1580	2000			
2000	3.78														2000	1580	1260
1580	2.82	2.82	2.82	2.86	3.06	3.30	3.63	4.02							1580	1260	1000
1260	2.08	2.08	2.08	2.13	2.32	2.56	2.90	3.29	3.77	4.39					1260	1000	790
1000	1.49	1.49	1.49	1.54	1.73	1.97	2.31	2.69	3.17	3.80	4.57	5.58			1000	790	630
790	1.01	1.01	1.01	1.06	1.25	1.49	1.83	2.21	2.69	3.32	4.09	5.10			790	630	500
630	0.64	0.64	0.64	0.69	0.88	1.12	1.46	1.84	2.32	2.95	3.72	4.73	5.98		630	500	400
500	0.34	0.34	0.34	0.39	0.58	0.82	1.16	1.55	2.03	2.65	3.42	4.43	5.68		500	400	320
400	0.11	0.11	0.11	0.16	0.36	0.60	0.93	1.32	2.03	2.42	3.19	4.20	5.45	6.99	400	320	250
320	0.00	0.00	0.00	0.05	0.24	0.48	0.82	1.20	1.80	2.31	3.08	4.09	5.45	6.88	320	250	200
250	0.00	0.00	0.00	0.05	0.24	0.48	0.82	1.20	1.68	2.31	3.08	4.09	5.34	6.88	250	200	160
200	0.00	0.00	0.00	0.05	0.24	0.48	0.82	1.20	1.68	2.31	3.08	4.09	5.34	6.88	200	160	130
160	0.00	0.00	0.00	0.05	0.24	0.48	0.82	1.20	1.68	2.31	3.08	4.09	5.34	6.88	160	130	100
130	0.00	0.00	0.00	0.05	0.24	0.48	0.82	1.20	1.68	2.31	3.08	4.09	5.34	6.88	130	100	0
100	0.00	0.00	0.00	0.05	0.24	0.48	0.82	1.20	1.68	2.31	3.08	4.09	5.34	6.88	100	0	
0	0.00	0.00	0.00	0.05	0.24	0.48	0.82	1.20	1.68	2.31	3.08	4.09	5.34	6.88	0		

Source: CAP 463 Sewage Services (Trade Effluent Surcharge) Regulation  
第463章污水處理服務 (工商業污水附加費) 規例

## 藥水證書



Virginia Economic Development Partnership  
20353-B Timberlake Road  
Lynchburg, Virginia 24502  
www.ExportVirginia.org

### Certificate of Free Sale

To Whom It May Concern:

This document certifies that [REDACTED] is a registered business producing biological waste treatment products and animal feed ingredients in the Commonwealth of Virginia USA.

It is further stated that all environmental safety regulations of the Commonwealth of Virginia and the United States Department of Agriculture are met by the following products which are freely available for sale by [REDACTED] in the United States and for export where allowed by US laws governing exports.

MAINTAIN® L, greasetrap product

For use as Generally Recognized As Safe Ingredients as defined by the United States Department of Agriculture. It is further certified these products are produced by good manufacturing practices and do not involve any genetically modified microorganisms nor are these products regulated by the US Food and Drug Administration or the US Environmental Protection Agency.

Certified this 4<sup>th</sup> day of October, 2004 by:

Joe Robinson Date October 4, 2004  
Mr. Joe Robinson  
Virginia Economic Development Partnership

City/County of Campbell  
Commonwealth/State of Virginia  
The foregoing instrument was acknowledged  
before me this 4<sup>th</sup> day of October,  
2004 by Joe Robinson  
(name of person seeking acknowledgment)  
Notary Public  
My commission expires: 1-31-08

## Maintain D / Maintain L 藥水介紹

### The Maintain<sup>®</sup> Series

**THE MAINTAIN<sup>®</sup> SERIES:** The Maintain<sup>®</sup> Series is a group of biologically active seed cultures designed specifically for use in grease traps, down lines/stacks, sewage treatment plants and septic tanks. Biologically active seed cultures are products which seed the waste system with more efficient microorganisms which secrete enzymes to digest the waste more completely or in a shorter time.

**PRODUCT:**

- \*Special blends of highly active, non-pathogenic bacterial cultures
- \*Cultures work with or without oxygen
- \*Are stable and have long shelf-lives
- \*Non-corrosive, non-hazardous, easy to use
- \*Each batch is standardized and assayed
- \*Available in both dry and liquid forms
- \*Every batch is certified free of pathogens

**TYPES OF MAINTAIN<sup>®</sup>:** Two types of maintain are produced, Maintain<sup>®</sup>-D and Maintain<sup>®</sup>-L. They are described in full later in this product manual.

**CHARACTERISTICS:**

**Each batch contains:**

- A blend of specialized cultures
- Suspending agents
- Extenders
- Surfactants

**OPTIMAL CONDITIONS:** The cultures perform best within a pH range of 5.5 to 8.5 with the optimum near pH 7.0. The temperature range is from 5°C to 49°C

**STORAGE CONDITIONS:** Store in cool dry place out of direct sunlight. Avoid excessive inhalation. Wash hands thoroughly with warm soapy water after handling.

**THE MARKET:** The market for biologically active seed cultures includes grease traps, down lines/stacks, sewage treatment plants and septic tanks. Biologically active seed cultures are products which introduce into the above systems highly efficient non-hazardous microbial cultures that produce large amounts of waste-eating enzymes.

**INTRODUCTION:** The purpose of a grease trap is to reduce the flow of grease in lines and prevent blockage and back-up. Although the grease trap does minimize the flow of grease down the line, it also fills up and backs up into the kitchen. *What to do?*

Grease used in restaurant cooking is fluid when hot. When this liquid grease is poured into a drain, it cools and solidifies, thereby reducing the flow. Why not put a collector in the line where the grease can solidify and prevent problems in the drain line? This collector was placed at some distance from the kitchen where the grease cools enough to solidify. These grease traps soon filled up with grease and prevented further flow down the line. This caused a backup all the way to the kitchen and produced a sanitation problem. These problems arose when the grease traps were not emptied periodically. In addition, this often happened at the busiest times. In the beginning, the grease trap was cleaned manually. This could be termed the **FIRST WAVE** - shovel & bucket. Soon, someone found that these traps could be pumped out and the contents discarded or recycled. This was the **SECOND WAVE** - mechanical. The **SECOND WAVE** was effective but considerably more expensive because an outside contractor was involved in correcting the problem. A modification involved periodic cleaning on a regular schedule. This modification eliminated the panic situations but was even more costly.

Pumping was necessary weekly for a busy restaurant and several times a year for the smallest eatery. With the increase in populations, restaurants, etc., the quantity of grease became more of a problem for disposal. Periodic pumping kept most grease traps from backing up, but where to put this pumped mess? Enter the **THIRD WAVE**.

The cost of pumping was becoming too expensive, mainly because of disposal fees. *What to do?* Can the amount of grease could be reduced? Efforts were made to collect the grease in barrels before it went into the drain lines. But, still the problem persisted. How about trying to reduce the amount of grease by the use enzymes or chemical degreasers? Well, grease is difficult to metabolize and the enzyme lipase is known to attack grease, but this enzyme is too expensive. Chemical degreasers add undesirable, poisonous chemicals to the waste stream. How about adding microbes which can attack the grease?



At the time, biological products for septic tanks were available. These products when introduced into a grease trap worked partially, but enough so to stimulate further testing with more powerful products. From this, **THIRD WAVE** products for grease traps were developed. They kept the grease level down but, there were other problems. Mainly, the products were not stable and produced gas in their containers causing leaks and handling problems.

# AMERICAN BIOSYSTEMS

## WASTE TREATMENT PRODUCTS INFORMATION

### Maintain<sup>®</sup>-D

**PRODUCT:** This is a dry formulation in a more concentrated form. It is used as is Maintain<sup>®</sup>-L and in addition in sewage treatment plants.

#### CHARACTERISTICS:

pH: N/A

Specific Gravity: 444 g/L

Effective Temp. Range: 10°C-40°C

**EFFECTIVE pH RANGE:** 5.5 to 8.5

**APPEARANCE:** Light brown, granular solid, slight fermentation odor.

#### SPECIFIC CHARACTERISTICS:

The microorganisms are *Bacillus subtilis* (2 strains), *B.licheniformis*, *B.megaterium*, *B. polymyxa* and *Aspergillus oryzae*.

**PRECAUTIONS:** See label.

**Packaging:** Product is available in ½ and 1 pound, ¼ and 1 Kg. water soluble bags in 5 gallon plastic pails (Contact us for volume requirements. Standard packaging is 25 Kg. Lock/Rim fiber drums.

Further studies resulted in two innovations: 1. Use of stable spore-forming bacteria which produced large amounts of digestive enzymes, and 2. Sophisticated formulation ingredients which eliminated gas production. These advances lead to the FOURTH WAVE and MAINTAIN®-L. It is stable, generates large amounts of digestive enzymes and does not produce gas in the storage container.

## DOWN LINES/STACKS

Tall apartment/office/hotel buildings have down lines/stacks which allow odors, etc. from kitchens and bathrooms to escape to the roof and into the atmosphere. These down lines start in a sump in the basement to collect any water which might get into the pipe. Often, these sumps have a pump to the sewer line in case the sump gets too full. Often, the sump and sewer line becomes clogged with grease. Use of MAINTAIN® D or L on a regular basis will reduce these blockages and odors.



## SEWAGE TREATMENT

In most places almost all sewage plants are overloaded because of increasing populations and the rise of affluence. Some have been expanded by very expensive additions, but these are temporary and must be repeated at even more cost to the taxpayers. *WHAT CAN BE DONE?*

Increase the efficiency of the biological digestion. HOW? When a plant becomes overloaded, the hydraulic residence time (interval waste is in the plant from influent to effluent) becomes shorter, e.g. twice as much flow = one half the resident time and one half the reduction of Biochemical Oxygen Demand (BOD), assuming a similar dissolved oxygen (DO). If there were adequate DO and residence time, the indigenous microorganisms present would do a pretty good job. This is not the case. *WHAT TO DO?*

Another problem related to poor waste digestion is lack of sufficient settling in the digesters. This is because the waste particles have not been adequately digested and still retain an electric charge sufficient to repel them. Use of MAINTAIN®-S in the digester will eliminate this electric charge and allow the particles to settle.

If the dissolved oxygen and residence time are minimal and can't be adequately increase, there is only one avenue and that is to replace the indigenous microorganisms with those more efficient. MAINTAIN®-S contains a mixture of efficient microorganisms which after introduction, develop a dominant position and will reduce discharge parameters.

Use MAINTAIN®-D at regular intervals introduced into the system as specified on the label. This product is a special formulation of MAINTAIN®-D designed especially for sewage treatment where the dilution volume is large.

## SINKS, TOILETS, LINES

Regular use of MAINTAIN® D or L will reduce clogging and odors. Housekeepers - put 10 ml. of Liquid or 10 g. of dry into each drain every day that the facility is used. Easy-to-use measuring devices are provided.

# AMERICAN BIOSYSTEMS

## WASTE TREATMENT PRODUCTS INFORMATION

### Maintain<sup>®</sup>-L (10x)

**PRODUCT:** This is a stable liquid suspension of bacterial spores capable of producing large amounts of digestive enzymes which break down proteins, starch, fats and fiber at a faster rate. MAINTAIN<sup>®</sup>-L is designed to be used in grease traps through a metering device, in down lines/stacks and in drain lines/sinks.

**CHARACTERISTICS:**

pH: Neutral (7)

Specific Gravity: 1

Effective Temp. Range: 10°C-40°C

**EFFECTIVE pH RANGE:** 5.5-8.5

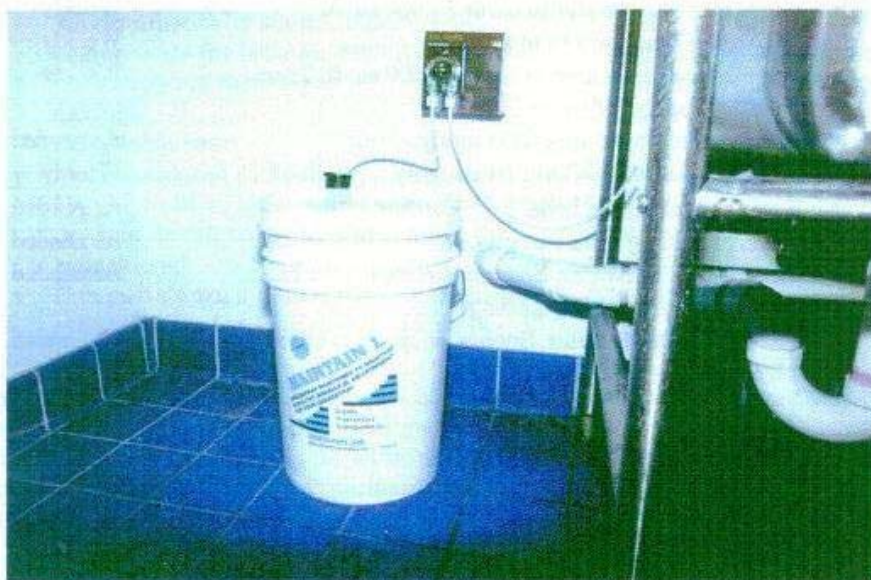
**APPEARANCE:** Slightly turbid liquid

**SPECIFIC CHARACTERISTICS:**

The microorganisms are *Bacillus subtilis* (2 strains), *B.licheniformis*, *B.megaterium* and *B.polymyxa*.

**PRECAUTIONS:** See label

**PACKAGING:** Available in 5 gallon, 30 gallon and 55 gallon drums as well as 440 gallon totes.



MAINTAIN<sup>®</sup>L in use in a restaurant kitchen