GREASOLUX –

A PRODUCT PROVIDING SOLUTIONS TO PROBLEMS CAUSED BY FAT IN WASTEWATER TREATMENT

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Industrial and municipal waste contaminated with fat – a frequent problem for companies maintaining wastewater network infrastructure and municipal wastewater treatment facilities.

We recommend the use of GREASOLUX fat dissolvent cartridges to avoid the problems of pipeline chocking, equipment damage, offensive odors, formation of filamentous bacteria, poor wastewater treatment results, poor sedimental properties of activated sludge.

GREASOLUX – is a cartridge that slowly dissolves in water, enriched with special fat dissolvent microorganisms and enzymes.

GREASOLUX – is an especially efficient product for low cost solutions to problems caused by fat: only few strategically placed cartridges will remove or minimize the problems caused by fat.

GREASOLUX efficiency lies in the special cartridge structure containing especially powerful fat dissolving microorganisms and enzymes. When the cartridges dissolve slowly, microorganisms will spread all over the wastewater system (pipelines, vessels, etc.) and consolidate on various surfaces. Thereby such conditionally small amount of microorganisms initiates growth of large bacterial colonies, which are able to dissolve large amounts of fat efficiently.

GREASOLUX is simple to use: just drop the cartridges in the correct locations and then replace them regularly every one or two months.

Sizes of GREASOLUX cartridges

GREASOLUX cartridges are cylindrical, coated with a special protective layer and placed into a plastic net for suitable hanging in vessels. Water - easily contacts the product through the mesh gradually dissolving the cylinder.

GREASOLUX cartridges come in two standard sizes: GREASOLUX-M and GREASOLUX-L. The cartridges differ by solubility and content of microorganisms and active agents (Table 1).

If necessary, GREASOLUX cartridges can be custom made (bigger or smaller) or placed in special water permeable containers to increase or decrease the life of cartridge.

Fig.1. *Samples of* GREASOLUX *cartridges*

Dosing program

Whereas the major component of GREASOLUX is microorganisms able to generate in proper conditions, the product dosage (the number of suspended cartridges) cannot accurately be determined and depends on site circumstances. You can follow the guidelines provided below to select a proper dose. Later this can be modified to obtain the optimum results.

GREASOLUX has the most effective action when it is suspended as close as possible to the problem area, i.e. if a municipal wastewater treatment company has problems caused by fat, so it would be perfect to hang GREASOLUX cartridges in wastewater system of the company which generates fats (fat collectors, compensation tanks or pump houses). For the purpose of its effect improvement it is reasonable to suspend additional GREASOLUX cartridge in wastewater line before the municipal treatment facility, for example, in a pump house pumping the wastewater to treatment facility or in wastewater acceptance-quenching tank. Furthermore, one shall avoid hanging of GREASOLUX cartridges in aggressive medium: high wastewater temperature, contact with concentrated chemical agents (for example, detergents), acute pH fluctuations. In pump stations the cartridges shall not be placed in the wastewater flow.

Table 1

Sizes of GREASOLUX *cartridges*

GREASOLUX cartridge type	Weight	Dimensions
GREASOLUX-M	2,4 kg	Ø: 10,2 cm, height: 20 cm
GREASOLUX-L	4,8 kg	Ø: 15,2 cm, height: 18,5 cm

Moreover, the products should be suspended to such a depth, so to ensure continuous contact with water, but shall not lie on the bottom.

The number and size of cartridges usually is selected according to wastewater amount and degree of wastewater contamination with fats. It is reasonable to place GREASOLUX in the same wastewater line in different points (Table 2).

Below you can find estimated GREASOLUX doses for wastewater pump houses, wastewater acceptance tanks and fat collectors.

Also it is reasonable to use GREASOLUX in wastewater collection wells, in case of choking of pipes. In such case it is reasonable to place one GREASOLUX-M cartridge in a well beside the choked points. The major effect can be achieved, if you hang the product just right after physical cleaning of pipelines.

Control GREASOLUX doses in a certain situation

- Food processing company equipped with primary treatment facility or without it. Wastewater amount: 100-1000 m^3 per day. Fat content in wastewater fluctuates from 100 to 1000 mg/l. Dose: from 3 to 6 GREASOLUX-L cartridges in different places of wastewater line (see the control schemes). The cartridges shall be replaced once per one or two months.
- A cafeteria equipped with a fat collector of 1 m^3 capacity and 10 m^3 of wastewater per day. Dose: one GREASOLUX-M cartridge placed in a fat collector and replaced once per two months.
- Shopping center having a culinary shop. Wastewater is collected by two fat collectors of 1 m^3 capacity. Wastewater amount – 30 m^3 per day. Dose: two GREASOLUX-M cartridges, one cartridge to each collector. Shall be replaced one or two months.

Table 2

GREASOLUX-M *and* GREASOLUX-L *dosing program for fat collectors*

Wastewater flow	Fat collector volume	Average number of dishes per day	The amount of fat stored in the collector	Greasolux quantity in the collector
Up to 1 l/s	Up to 0,5 m^3	Up to 100	20 kg	M – 1 pcs.
1-4 l/s	0,5-1,5 m^3	100-400	20-60 kg	M – 1-2 pcs.
4-7 l/s	1,5-3 m^3	400-600	70-100 kg	L – 1-2 pcs.
7-10 l/s	3-5 m^3	60-1000	100-150 kg	L – 2-3 pcs.
Over 10 l/s	Over 5 m^3	Over 1000	Over 150 kg	L – 4 pcs. and more

Table 3

GREASOLUX *dosing program for wastewater pump houses, compensation tanks*

Wastewater flow rate in a pump house	Greasolux quantity
0-1000 m^3/day	M – 1 pcs.
1000-2000 m^3/day	L – 1 pcs.
2000-3000 m^3/day	L – 3 pcs.
3000-5000 m^3/day	L – 4 pcs.
5000-10 000 m^3/day	L – 5 pcs.
10 00 -20 000 m^3/day	L – 6 pcs.
Over 20 000 m^3/day	L – 6-10 pcs.

If the wastewater treatment facility is treats wastewater from several pump stations the correct quantity of GREASOLUX cartridges shall be placed in each pump station. The quantity of GREASOLUX cartridges is estimated, in every certain case the quantity can be bigger or smaller, depending of wastewater specificity, contamination or expected results. To obtain better results several cartridges can be placed in the same line, for example in the industrial shop channel, where wastewater is collected by a fat collector, in a fat collector and pump station. Possible examples of lay out of cartridges are provided in the schemes.

At first it is always recommended to use greater number of GREASOLUX cartridges and after receipt of the expected result – the number of cartridges can be gradually reduced. However, it is highly important to place new cartridges regularly (every 1-2 months). Furthermore, at the beginning it is recommended to fix dissolution of cartridges in certain places: if the cartridge dissolution term is less than two weeks or remains undissolved for more than 3 months, in such points it is necessary to change the layout of cartridges. If it is impossible to change the lay out, please contact the GREASOLUX supplier.

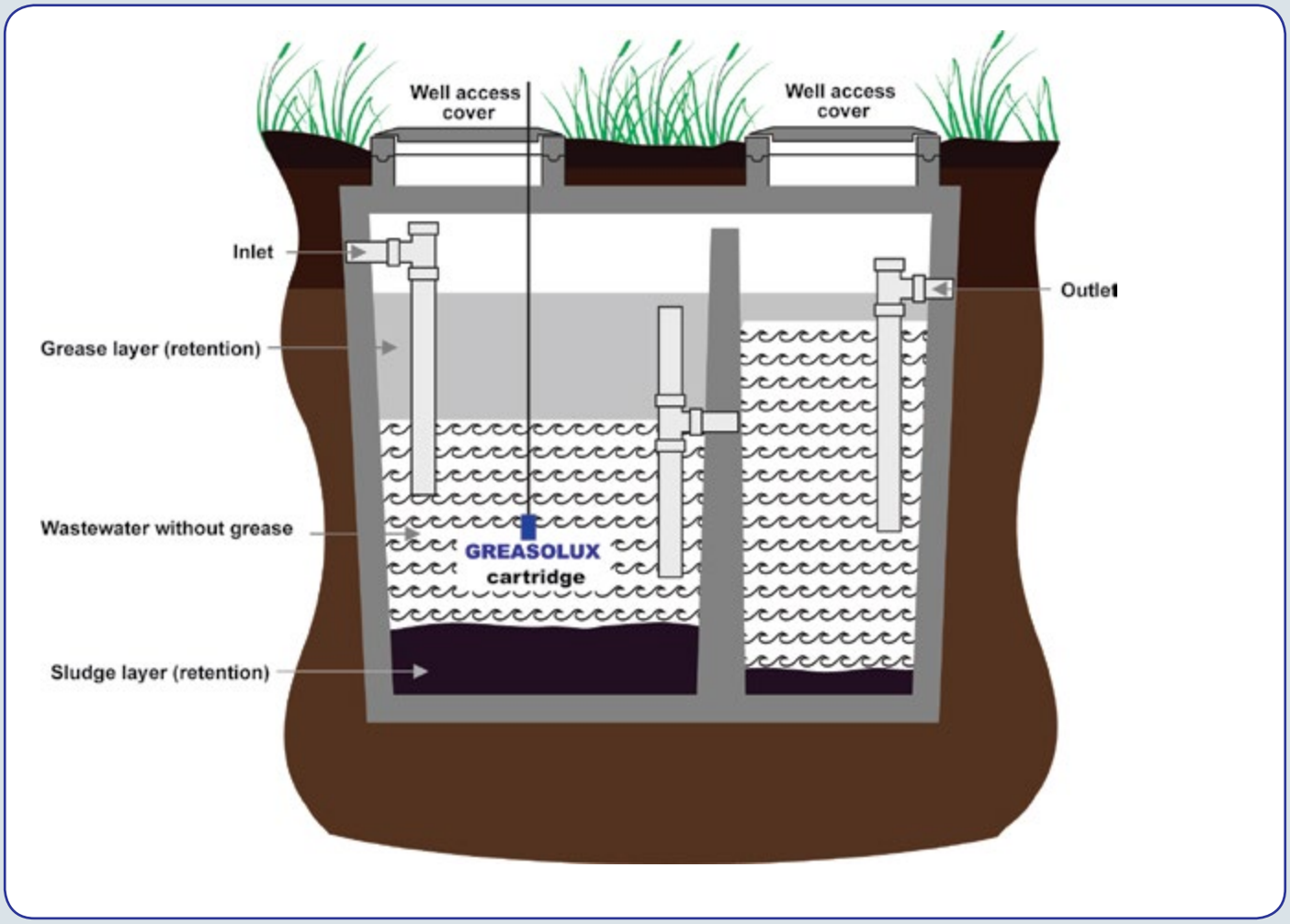

Fig. 2. *Recommended GREASOLUX layout in a fat collector*

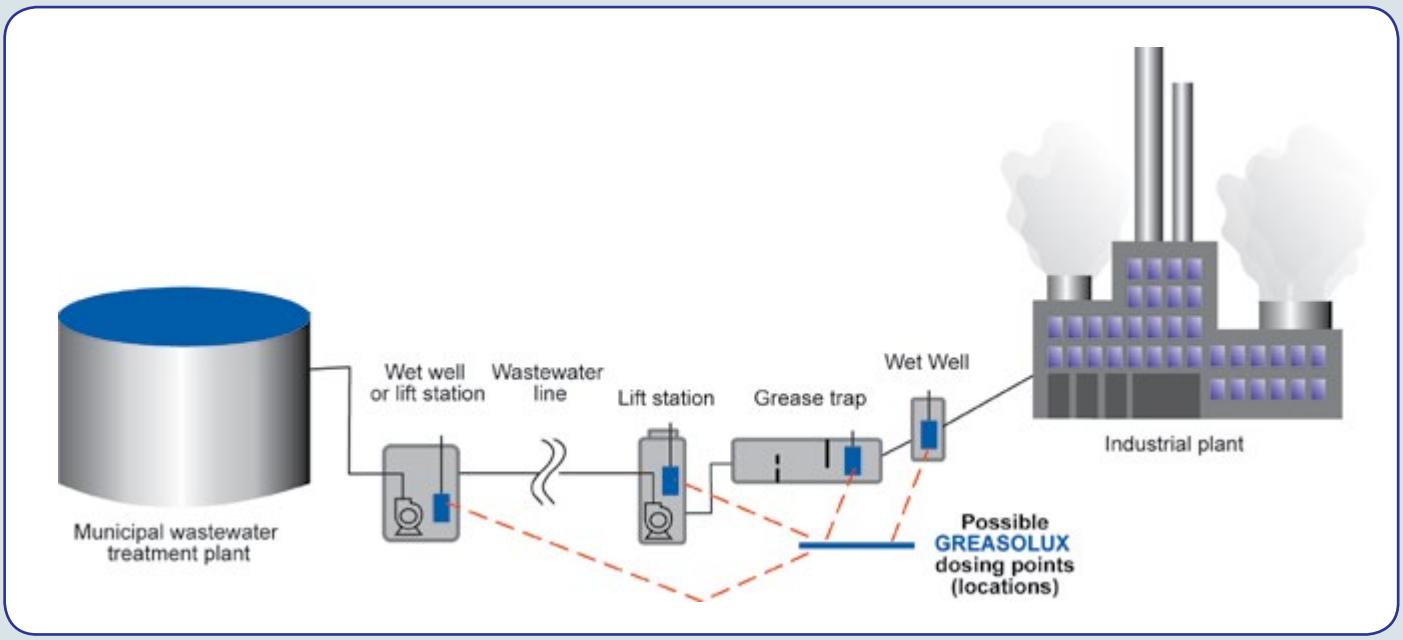

Fig. 3. *Recommended* GREASOLUX *layout to protect a municipal wastewater treatment facility against industrial waste water heavily contaminated with fats*

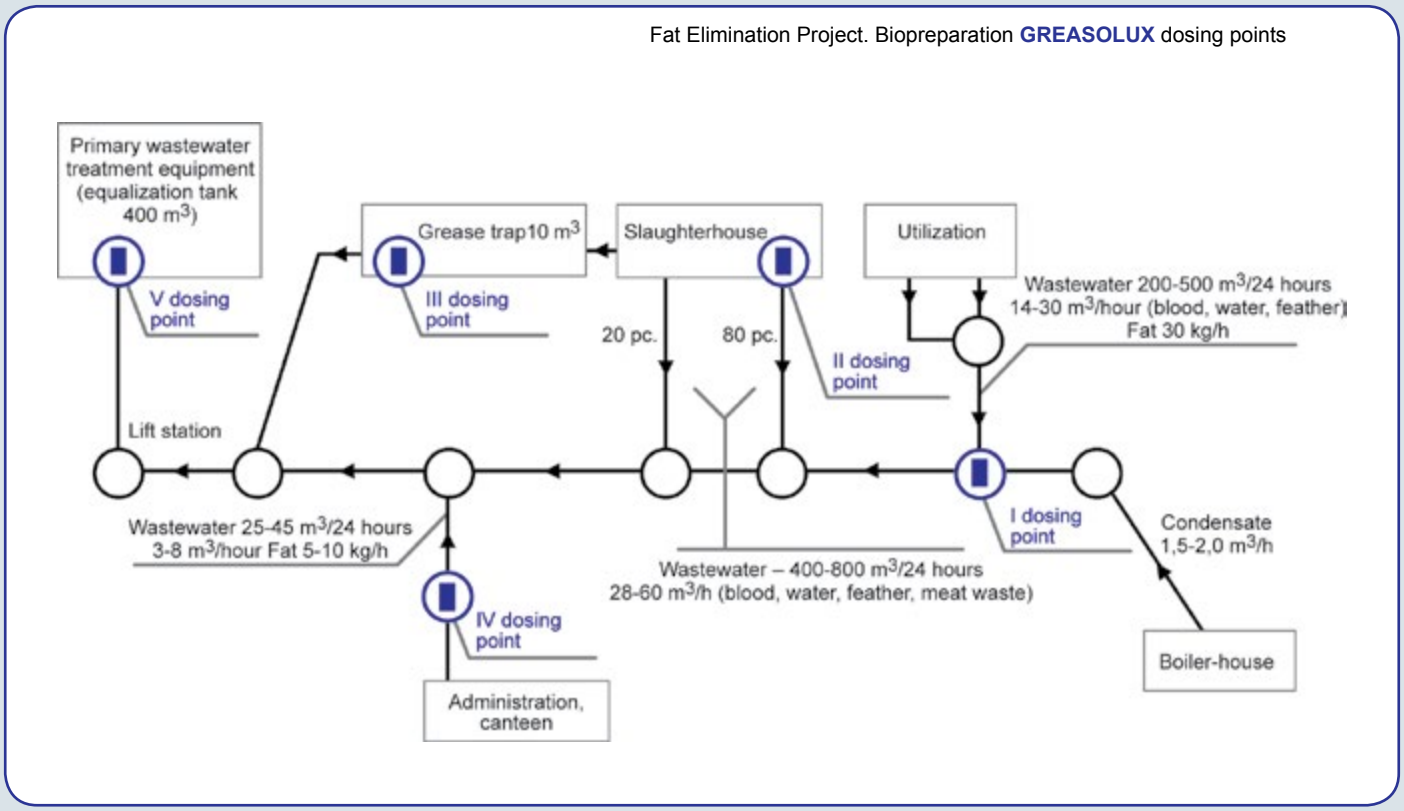

Fig. 4. *Recommended* GREASOLUX *layout in meat processing factory to reduce negative impact of fats to wastewater treatment facility of the company*

Problems, which can be caused by waste water heavily contaminated with fats, and which can be avoided or minimized by using GREASOLUX

GREASOLUX advantages for wastewater heavily contaminated with fats:

- **Improvement of biological sludge sedimentation – reduced sludge index.**
- **Prevention of pipeline choking.**
- **Prevention of pump station choking and damage of floats.**
- **Reduction of centrifuge vibration, especially in winter.**
- **Improvement of organics removal from silt restraining gratings.**
- **Improvement of organic nitrogen dissolution.**

Fig. 5. *The municipal wastewater treatment facility before using and during using GREASOLUX: after several months of use the fat layer, which covered aerotank, was fully removed.*

Fig. 6. *Wastewater acceptance pump house and grating before and after using GREASOLUX*

If you have any questions on use of GREASOLUX, please contact us and we will kindly provide a consultation