



PIGSTY NEUTRALIZATION



GUARANTEED SOLUTION FOR THE NEUTRALIZATION OF PIGSTIES

- Removal of heavy metals from sewage;
- Antibiotic, pesticide and herbicide removal;
- Pigsty disinvasion;
- Destruction of weed and plant seeds in sewage;
- Destruction of helminths, worm eggs and other pathogens.



REDUCING COSTS OF PIGSTY NEUTRALIZATION

- Savings of up to 80% of the operating budget for pigsty neutralization;
- Savings of up to 28% of capital costs for pigsty neutralization.



PRODUCTION OF ENVIRONMENTALLY FRIENDLY ORGANOMINERAL FERTILIZER

- Production of biologically active and environmentally friendly organomineral fertilizer of high quality from pigsties for own purposes or for sale.

PIGSTY NEUTRALIZATION

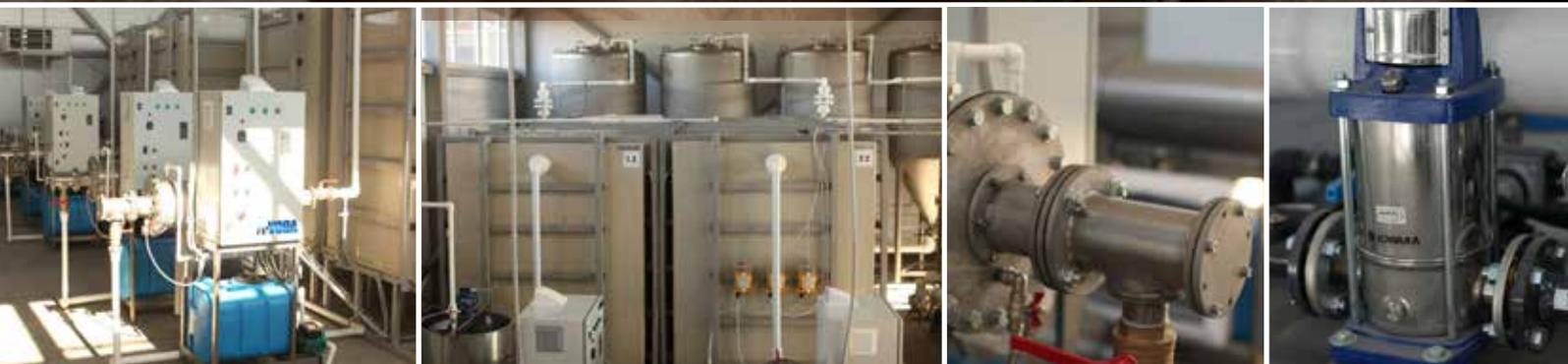
PRESSING PROBLEMS
HIGH COSTS
LOST PROFITS AND LOSSES

RISK MANAGEMENT
COST REDUCTION
FERTILIZER REVENUE



TURN PROBLEMS INTO

PROFIT WITH REVODA



ADGEX OFFERS A GUARANTEED SOLUTION FOR THE NEUTRALIZATION OF PIGSTIES:

-  Removal of heavy metals from sewage by converting them to insoluble hydroxyl groups.
-  Disinvasion of pigsties due to the presence of large amounts of ozone in the core of the reVODA reactor.
-  Destruction of helminths, worm eggs and other pathogenic microflora through mechanical destruction.
-  Removal of organic compounds including antibiotics, pesticides and herbicides from sewage.
-  Destruction of weed and plant seeds in sewage by cavitation effect.

100% GUARANTEE OF PIGSTY NEUTRALIZATION WITH THE REVODA LINE:

- ✓ The solution has been tested on pig farms since 2011.
- ✓ Low operating costs confirmed in practice: small amount of reagents, low number of staff (only 2 unskilled employees per shift to ensure the operation of the line).
- ✓ Guaranteed results for disinfestation and neutralization of pigsties.
- ✓ Reliability and reliability of the equipment, confirmed by 11 years of practice.
- ✓ Lack of other solutions on the market for neutralization and treatment of agricultural farm sewage.

PAYBACK PERIOD FOR REVODA LINE

1.0 YEAR

due to savings of pig farm costs for neutralization of fresh manure + sale of organomineral fertilizers.

1.2 YEARS

due to savings of pig farm costs for neutralization of fresh manure + increased germination and crop yields.

1.5 YEARS

by saving the pig farm the cost of neutralizing fresh manure.

REVODA LINE –
THE ONLY WORKING AND TESTED SOLUTION ON THE MARKET

ECONOMIC BENEFIT OF USING THE REVODA LINE

⊖ AGEING OF MANURE IN LAGOONS

⊕ NEUTRALIZATION LINE REVODA



NUMBER OF LAGOONS

A medium-sized pig farm produces up to 750 m³ of fresh pigsty effluent per day. Sewage must be kept in lagoons for neutralization for at least 6 months. One average lagoon has a volume of about 24,000 m³. With a production of 750 m³ per day, this lagoon is filled in 32 days.

In order to meet the legal requirements, a pig farm must have at least 7 lagoons for manure storage.

CAPITAL EXPENDITURES:

- About 7 lagoons are needed.

OPERATING COSTS:

- Salaries and wages of maintenance personnel;
- Transportation of manure from pig houses to lagoons;
- Electricity for pump operation;
- Repair and maintenance of machinery.

The treated pigsties, after passing through the reVODA line, come out as organomineral fertilizer: neutralized fugate and cake.

The cake can be transported to the fields year-round online as soon as it is generated, or it can be stored at a composting site in winter.

Fugate is collected and stored in lagoons during the winter. In the warm season it is piped to the fields for irrigation.

REDUCTION OF CAPITAL COSTS BY 28%:

- About 5 lagoons are needed.

25% REDUCTION IN OPERATING COSTS:

- A reduction of approximately 25% in all operating costs associated with the forced storage and curing of manure in lagoons.

STRATIFICATION OF MANURE DURING STORAGE IN LAGOONS

When manure is kept in lagoons, it stratifies into supernatant water, manure and sludge in 6 months. Special agitators must be used to collect all this in the lagoon and dredge it out.

OPERATING COSTS:

- El/energy for the operation of the agitators.
- Salaries of operating personnel + repair and maintenance of equipment.

The problem is completely eliminated, as the fresh pigsties are immediately sent to the reVODA line for treatment and neutralization, after which the output is a ready-made organomineral fertilizer that cannot be stratified or decomposed.

REDUCTION OF OPERATING COSTS BY 100%:

- Current operating costs are reduced completely.

ECONOMIC BENEFIT OF USING THE REVODA LINE

⊖ AGEING OF MANURE IN LAGOONS

⊕ NEUTRALIZATION LINE REVODA



TRANSPORTATION OF PIGSTIES TO THE FIELDS

One vehicle transports on average 30 m³ of sewage (volume limit for public roads). To transport 750 m³ of sewage it is necessary to make 25 trips per day.

OPERATING COSTS:

- El/energy for operation of manure pumping pumps in the vehicle.
- Diesel fuel for vehicles + repair and maintenance of equipment.
- Salaries of drivers and service personnel.

Fugate makes up to 93% of the fresh pigsties after neutralization on the reVODA line. If the fields are within a radius of 10 km, it is advisable to transport the digestate to the fields by pipeline as water, not as manure by truck, and directly to the watering machines.

REDUCTION OF OPERATING COSTS BY 90%:

- No more than 2 trips per day are needed to remove the cake, which is no more than 10% of the current manure removal costs.



DISINFECTING PIG HOUSE BATHS AND FILLING WITH WATER

The piggeries have 2 bath use cycles:

1. The baths of the pig houses are filled with water, after which the pig waste products (urine and manure) fall into it. The baths are emptied with a certain cycle.
2. After the baths are emptied, a disinfection procedure must be carried out, after which the baths are refilled with water.

OPERATING COSTS:

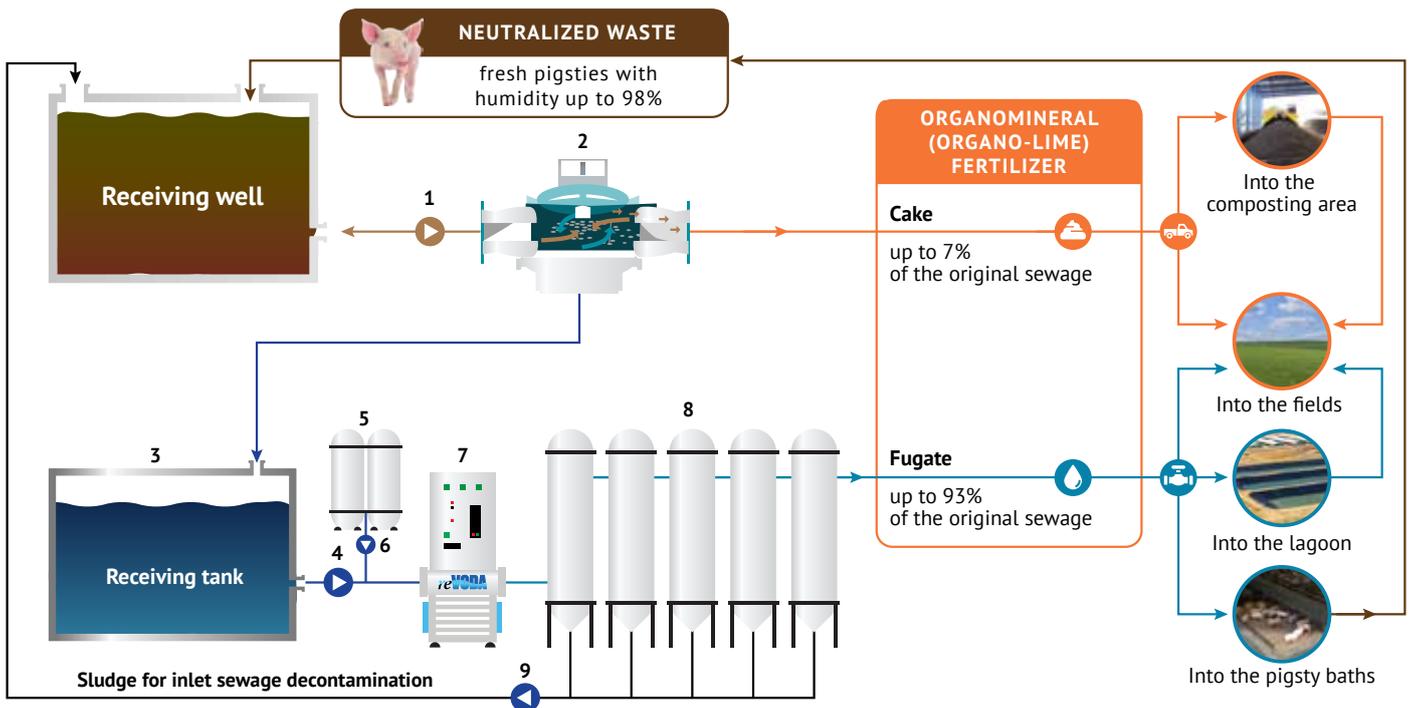
- Clean water for baths.
- Purchase of chemicals for disinfection.

Neutralized fugate is designed for direct use in the baths immediately as a filler instead of water, and there is no need to carry out a disinfection cycle, as the fugate has an alkaline Ph and when it enters the bath automatically performs the role of disinfection of the bath. Instead of 2 cycles, the pig farm gets a 1-cycle solution and can stop using clean water.

REDUCTION OF OPERATING COSTS BY 100%:

- Current operating costs are reduced completely.

BLOCK DIAGRAM OF PIGSTY NEUTRALIZATION LINE



LINE EQUIPMENT LIST:

1. Centrifugal self-priming pump.
2. Separator-dehydrator.
3. Receiving tank.
4. Centrifugal pump.
5. Reagent preparation and dosing station.
6. Dosing pump.
7. ReVODA reactor.
8. Sedimentation tanks.
9. Impeller pump.

IN THE REVODA REACTOR Under the action of electromagnetic fields the neutralization and oxidation of the pigsty environment takes place, namely: disinfection of sewage, removal of odors, separation of heavy metals by converting them into insoluble hydroxyl groups, decomposition of fats and phosphates contained in pigsties. Inside the reVODA reactor there are needle elements acting as cavitators. Due to the collapse of air bubbles at the gas-liquid interface of the treated sewage, a shock wave (cavitation effect) is formed, which contributes to the mechanical destruction of organics and mechanical destruction of all pathogenic microflora in pigsties, including antibiotics.

CHARACTERISTICS OF THE REVODA LINE FOR A MEDIUM-SIZED PIG FARM

Inlet sewage parameters:	fresh pigsties with humidity up to 98%
Capacity of the line in terms of sewage processing volume per day:	750 m ³ /day
Operating mode:	round-the-clock
Total peak power consumption of the line:	33.40 kWh
Space required to accommodate the line (not more):	50 m ²
Number of service staff per shift:	2 employees
Lifespan of the line:	15 years
Warranty on pigsty neutralization line equipment:	24 months

ORGANOMINERAL FERTILIZERS FROM PIGSTIES

-  **Fugate** (head water after sedimentation tanks of sedimentation tanks) is lime fertilizer by composition and is intended for irrigation. During the winter period fugate is accumulated in lagoons, and in the warm season it is piped to the fields. According to the available experience during transportation of fugate, pressure losses in the pipeline for a distance of 7.5 km are no more than 10%.
-  **Cake** (squeezed solid fraction of pigsties) is a neutral organic mass with a moisture content of up to 50% and is a high quality biologically active organic fertilizer. In warm weather the cake is immediately transported to the fields, and in winter it is stored at the composting site.

ADVANTAGES OF THE RESULTING FERTILIZERS



After soil preparation with our fertilizer, colloidal solutions are formed in the soil, in which intensive development of soil bacteria begins. As a result, the life of anaerobic bacteria and soil quality improves, humus, nutrients, humic acids and other DICs necessary for soil life and plant growth are formed.



Fugate has a certain amount of biohumus in its composition, which are suspended substances of residues of neutralized processed manure. When irrigated, biohumus forms a fertile layer on the soil - black soil, which in turn is not washed out of the soil during the next irrigation or rainfall due to its fine dispersion.



All our fertilizers can be applied to acidic soils to alkalize the soil and bring the Ph of the soil to between 6 and 9 units, thus saving farmers from adding lime to their fields. If necessary, the Ph level of the cake and the output ph can be adjusted for the specific soil.



The cake and fugate are obtained without the use of any chemicals. They are non-toxic and do not form harmful and toxic compounds in soil, air and wastewater. Cake and fugate have no unpleasant odor and are absolutely safe for users.



When watering with fugate, germination, bushiness and yield of crops increases by 15-20%, due to the fact that biohumus has passed through the stomach of pigs, and is much better assimilated by plants, as well as due to the fact that fugate has magnetic properties.

FERTILIZER SALES TO AGRIBUSINESSES

Sour soils are formed as a result of their deterioration and depletion due to the use of chemical fertilizers by agricultural complexes engaged in crop production. In order to deoxidize the soil, agrarian farms use the method of introducing lime into the soil in large quantities, which should be plowed to a depth of up to 20 cm.

⊖ LOST PROFITS OF PIG FARMS

⊕ WITH REVODA, COSTS TURN INTO INCOME



It would seem that pig farms can sell manure to farmers, since they take it to the fields anyway. But it's not that simple.

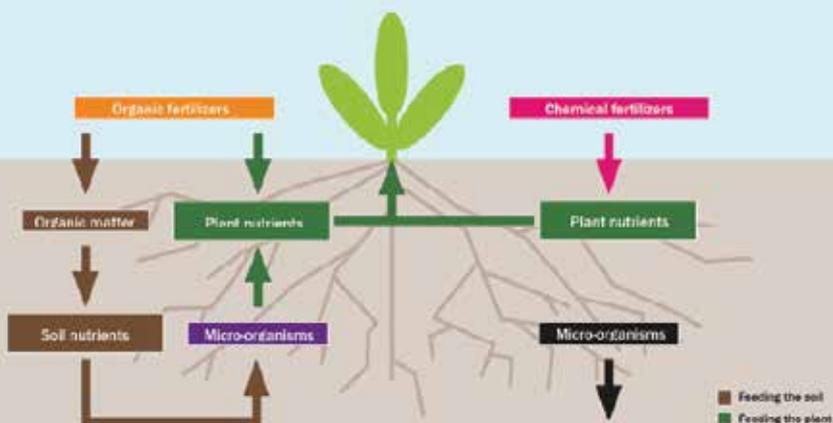
When kept for 6 months in lagoons, the manure loses more than 30% of its useful substances (nitrogen, potassium, phosphorus). In this form, manure does not have a high biological value as a fertilizer. Plus the high operational costs of curing manure make cured manure unprofitable.

Cake and fugate produced on the reVODA line do not lose the useful substances found in fresh manure from nature, because manure is processed into organic lime fertilizers directly as it is formed. Moreover, the cake and fugate have calcium cations in their composition, which, when applied, brings the Ph of the soil to a neutral value and there is no need to apply lime.

FERTILIZER PRODUCTION VALUE

EFFECT OF CHEMICAL FERTILIZERS ON SOIL AND PLANTS

EFFECTS OF ORGANOMINERAL FERTILIZERS (CAKE AND FUGATE)



Due to the unique quality and composition of cake and fugate, agricultural complexes do not need to use other fertilizers, as well as herbicides and growth regulators. That is why cake and fugate are in demand in agriculture and have a high market value as biologically active organomineral and ecological fertilizers.

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