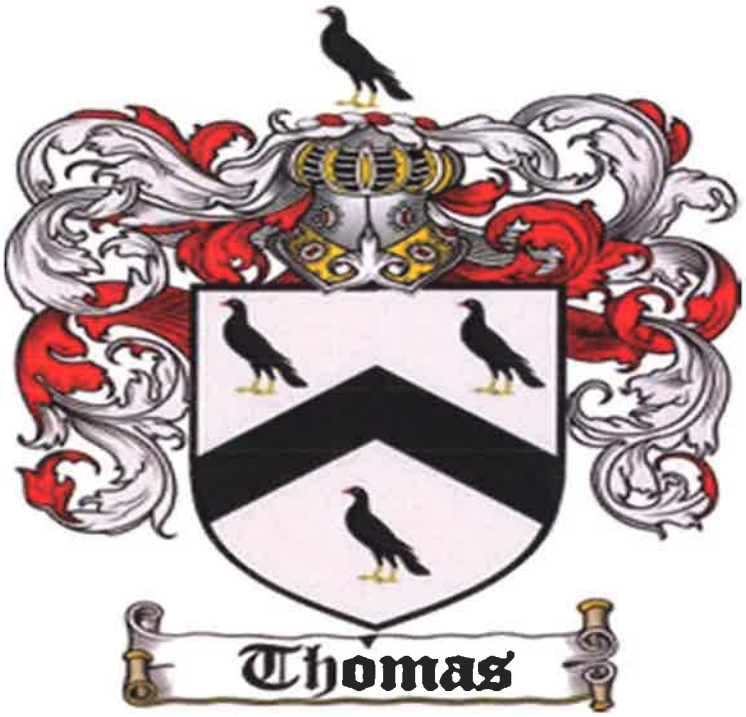
Hefin Thomas

Agri Contractors Ltd



Contingencey

Contingency

System Description

This document Contains the contingency plan in the event of failure of any part of the sewage recycling plant at: Hefin Thomas Agri ltd, Plot 7, Mona industrial Park, Mona, Anglesey, LL64 4RJ.

The Plant is built and operated to the current industry standards and meets the companies ISO 9001/14001 accreditation. All operating staff are fully trained in both operation and contingency in the event of failure of any part of the plant. The site has interceptor/storage tanks with a capacity greater than that of the recycling plant to maintain control of effluent in the event of tank or pipe failure.

Recycling plant consist of stage one, Mechanical screen wash system, stage two, Settlement for grit etc, stage three, aeration and dilution, stage four chemical and biological treatment, stage five is monitoring of final discharge which is done at the interceptor. The interceptor is also fitted with separate pump to return the discharge to the recycling system should the effluent get close to or below the standards required for discharge to the sewer.

Siting of the plant is on a level concrete base next to the central portal framed building which is bunded with a catchment sump to retain effluent in the event of a spill. The plant sits beneath a covered roof to prevent rainfall entering the system.

The site and recycling area is serviced by 100-amp three phase supply with the plant requiring a 4 KVA to operate. Further pumping and handling requires 2 to 3 KVA max.

Process water is supplied by a bunded rainwater system plus the onsite water supply for any extra capacity.

The whole system is divided into its component parts and the contingency plan deals with them on a singular bass. The failure of any one part of the system requires immediate shut down of the plant. Where an assessment can be made as to the appropriate course of action by a suitably qualified person.

The systems are identified as follows, water supply, electrical supply, sites drainage and interceptor tank, emergency holding tanks, bunded base and sump, recycling system divided into, Mechanical screen wash, settling of grit, aeration and dilution, chemical and biological and monitoring and discharge.

The main contingency to deal with is in relation to spillage or leakage of effluent which can have an environmental impact and cause breach of permitting from both Natural Resources Wales and Welsh Water. The priority at all times is containment and control.

In the event of a spill, for example when pumping from the tanker into the system, or by failure of any part of the recycling system and associated pipe work. Shutting down the system, closing all associated valves and containment of any spilled effluent is the priority at all times. The system can then be assessed and the pumping of any spilled effluent, to either the source tanker or the onsite emergency storage tanks is to be done as soon as possible.

Contingency

Control and containment of effluent

At the beginning of any incident with the recycling system, with regard to effluent, a clear sequence is to be followed at all times.

A/ Shut off tanker feed into the system

B/ Shut off water feed

C/ Close off discharge line from the recycling system to the interceptor

D/ Shut down any treatment e.g. Aeration, Lime Plant, Chemical Feeds and flocculants.

D/ Begin pumping effluent from the system or any that is in the catchment sump of the bunded area to either the source tanker or the emergency storage tank as soon as possible.

Any work required to repair the system must only be done once thoroughly steam cleaned and disinfected to ensure a bacterial static work area.

At the beginning of any incident with the discharge from the plant to the discharge point to the sewer the sequence is as follows.

Follow the above sequence plus,

A/ Shut off discharge valve from plant

B/ Shut off discharge valve to sewer

C/ Pump effluent from the interceptor to the source tanker or to the emergency storage tanks.

Any repair work to be carried out can only be done once the system is made safe, steam cleaned and disinfected to ensure a bacterial static work are.

Electrical Failure

If the plant suffers an electrical failure during recycling.

A/ Shut off tanker feed

B/ Shut off discharge from plant

C/ Shut off discharge from interceptor

D/ Shut off main power feed to enable a controlled start up once power is restored

E/ Connect tanker to discharge and draw down effluent in the system

D/ Connect tanker to interceptor and draw down effluent

Once power is restored system can be restarted as normal

Contingency

Loss of water supply

If the water supply to the plant is lost either by loss of mains or the exhaustion of the bunded rain water tank. The system will need to be shut down in the normal way as it will not be possible to meet the standards required for discharge to the sewer. Continuing to operating the plant in this way will be in breach of the NRW permit and also the discharge requirements set by Welsh Water.

Under no circumstances must the trip sensor for loss of water be bypassed. This will be deemed an act of gross misconduct and appropriate action will be taken.

Mechanical Wash and Conveyor System

If the mechanical wash system or the conveyor removing rags and towels from the feed source fails

A/ shut off feed source and allow remainder in the recycling system to transit the plant and continue flushing with water then shut down in the normal way.

B/ Switch off Aeration and water spray system.

C/ Isolate the mains electric and lock off prior to undertaking any work on the mechanical side of the plant.

D/ Remove any remaining debris from the system and place in the disposal skip

E/ Wash down, steam clean and disinfect the area to be worked on to ensure a bacterial static environment.

Grit and sand sediment

Grit and sand sediment gathers in the gravel trap which is released from the recycling system by a quarter turn valve. Should the specific gravity of the sediment increase to prevent it from flowing freely. Manuel agitation can be applied from above or through the valve system with either a bar or Air tube. This will be a two-person operation at all times. The valve to be manned at all times while the other does the agitation. The sediment and any spill will be contained in the gravel pit in the bunded area.

Contingency

Aeration

The recycling system is fitted with a sub aeration system to help bring down the chemical oxygen demand COD, to meet the permit standards for discharge to the main sewer. During operation it may be noted that some jets become blocked. As the system has a greater number of jets than required no action is needed. Should the chemical Oxygen Demand begin to increase due to insufficient aeration then the system will need to be shut down in the normal way and the jets cleared. Any tank sludge also removed at this time in the normal way.

Chemical and biological Treatment

During recycling operations various treatments need to be added to treat the effluent so it can meet the necessary permit conditions prior to discharge. These are controlled and monitored electronically to ensure a consistent discharge. If one or any part of the treatment system fails the alarm will sound and discharge to the sewer must be stopped immediately. The plant will need to be shut down and all effluent in the system pumped to the source tanker or emergency holding tanks.

Personal safety

The plant is to be operated by two fully trained staff at all times there is no loan working around this plant at any time whether during recycling operations or maintenance periods.

Adjacent to the plant an emergency wash shower, sink and first aid station are provided. All operating staff need to make themselves familiar with this unit. In the event of any splashes, cuts and abrasions the wash-down system is for your safety and protection.

It is strongly advised and is company policy that staff take all necessary precautions to protect against pathogens they may encounter in there working environment. A list if vaccinations can be obtained from the office and any associated costs will be refunded by the company on receipt of the vaccination certificate.

While operating or maintaining the plant full safety equipment must be worn at all times. The recycling area is monitored by a clearly visible camera system at all times, this is for your safety and for that of the company.

There are always qualified first aiders on site and the list of names are on the wall by the wash down area. If you have any concerns around first aid or site safety do not hesitate to speak to the first aides or a member of the office staff.

Any incident that occurs while on site must be entered into the accident book which is then recorded electronically to the HSE/RIDDOR. A copy of which can be printed and handed to the person concerned and stored on their personal file.