# Feralco Flood Plan

**Premises details:**

Feralco UK Ltd
Ditton Road
Widnes
Cheshire
WA8 0PH

A copy of the site plans are attached to this document

**Premises use:**

The premises are used for the manufacture of aluminium based inorganic chemicals.

**Flood risk**

*This information can be found on the Environment Agency Website:*
*http://www.environment-agency.gov.uk/homeandleisure/floods/31650.aspx*

**Staff contact list:**

| Name | Address | Telephone/mobile | Emergency contact |
|---|---|---|---|
| Annette Halliwell | 4, Eastbury Close,<br>Widnes,<br>Cheshire,<br>WA8 9WW | 07760 174 976 | Same as mobile |
| Richard McGurty | | 07760 173 736 | Same as mobile |
| | | | |

**Note. Staff who may require assistance in the event of a flood:**

| Name | Office location |
|---|---|
| No staff have been identified who may require special assistance | |
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**Key locations:**

| Service cut-off | Description of location |
|---|---|
| Electricity | The main incoming electricity supply is located by T05 (main water storage tank). See site map.<br>Main Electricity sign is on the door.<br>Use key number 4 to open the door – this is located in the managers office in the key cupboard. |
| Gas | All gas to the factory has been isolated and capped at the meter.<br>The only gas used is in the office. The can be isolated in the office boiler room.<br>Use key number 19 to open door – located in managers office in key cupboard |
| Water | The main incoming water supply is located in the Alumina Products Area of the warehouse. The stop valve is on the far wall (next to road) near the double wooden doors by the header tank. |

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Answer the following if applicable:

| | Description of location | How to protect from flood |
|---|---|---|
| First aid kits | There are 8 first aiders on site and each have their own first aid kit.<br>2 are situated in the office, 1 in the laboratory, 2 on aluminium sulphate crushing, 1 aluminium sulphate production, 1 on PLUSpac production and 1 on ferric sulphate.<br>First Aid supplies are kept in the laboratory in a cupboard which is mounted on the wall.<br>The location of the first aid room is indicated on the site map. | The kits are kept off the floor on shelves.<br>They should not be affected by flood water.<br>The first aid room is locted in the middle of the warehouse and is on a raised part of the site. No flood water should reach.<br>The laboratory is a portacabin structure mounted on blocks and is off the floor by at least 700mm, therefore likelihood of flood water ingress is low. |
| Oil based products (gasoline, oil, cooking oil etc) | The most significant store of hydrocarbon on site is gas oil for forklift trucks. When full approximately 2500 litres. | This is contained in a new self-bunded tank which has been parabolted to the floor therefore it will not lift off in a flood scenario. |
| Chemicals | The major hazardous chemical on site is 96% - 98% sulphuric acid which is contained in 2 stainless steel tanks There are also 2 other tanks in the same bund (GRP) which now contain mainly rainwater and wash down water from acid tanker deliveries.<br>There are a further 3 bunds on site containing Aqualenc G10/plusPAC, ferric sulphate and aluminium sulphate.<br>plusPAC finished material is often transferred into IBC's and contained within a low bunded area.<br>Hydrate shed located at front of aluminium sulphate plant.<br>Chemicals stored in the laboratory.<br>Aluminium Oxide Powder (Apryal). Inside alumina products warehouse.<br>Calcium/Magnesium carbonate Powder (Dolomite). Shed 27<br>Alumino Silicate Powder (Zeolite). Shed 29.<br>Magnetite bulk bags stored in Magnetite shed.<br>Hydrogen peroxide storage tank and ferric sulphate bund | All major stock tanks are situated within a bund which would prevent any likelihood of flood water affecting their integrity. Each bund is also fitted with a pump to evacuate water which may reside in there due to excessive rainfall. All tanks are securely bolted to their respective plinth.<br>The IBC's are stored 3 high with an overall weight of almost 4 tonnes per stack.Again the likelihood they could float away is minimal. There is also a pump in the bunded area which will remove any water which resides in it.<br>There is a slight chance that flood water could enter the hydrate shed but the apron in front is sloped towards the sump on the acid apron. If necessary the door can be shut and flood pax put along the bottom edge of the door.<br>Chemicals are in limited quantities, however they are still stored in cupboards mounted on the wall. The laboratory building is also raised off the ground by 0.5 metre.<br>Apryal and Dolomite powders are stored on raised pallets at a minimum height of 0.5 Metres.<br>Zeolite is stored in the 29 shed which is a self contained area. Under flood conditions contamination outside the bund is unlikely.<br>There is a slight chance that flood water could enter the magnetite shed, especially as it's situated near the banks of the brook. Any water entering this area will be directed towards the sump on the loading apron.<br>Ferric sulphate bund has a low wall but it is still unlikely any water would overwhelm it and enter the bund. All tanks are bolted to the floor.<br>Any residing water in containment areas is transferred into grey water storage tanks in the acid bund and ferric bund. Total capacity available = 350 tes |
| Other chemicals (e.g. cleaning products) | The only other chemicals are located in the office in the cleaning cupboard. | They are environmentally friendly cleaning materials anyway but they are kept off the floor on shelving. |

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**Protective actions** *(insert details of where the following will be kept)*:

| Item | Protective Action | New Location (if applicable) |
|---|---|---|
| Acid Pumps (P10A, P10B and P12) | Located on a plinth and raised off the ground by at least 1m. | **N/R** |
| Acid Bund/Apron sump pumps | The apron pump is on the same level as the acid pumps so well off the ground.<br>The acid bund sump pump is located on the bund wall – well off the floor by a good 2m | **N/R** |
| plusPAC/Aqualenc G10 pumps | All located within the bund. Flood water should not affect them. Bund is fitted with submersible pump to remove retained water | **N/R** |
| Water pumps (P05 & P07) | One is situated beside T05 – this is also mounted on a plinth off the floor by approx. 500mm.<br>The second is located beside T07. This is mounted on a small plinth but it's inside the reaction area which is bunded anyway. Unlikely it would be affected by flood water. | **N/R**<br>**N/R** |
| Aluminium sulphate transfer pump (P03) & SG Loop Pump (P03A) | Located in alum reaction area on the floor, but it's inside the reaction area which is bunded anyway. Unlikely it would be affected by flood water. | **N/R** |
| PAC 18 transfer pumps | Located in plusPAC IBC filling area. The floor in this area has a camber which runs away from the pumps towards the sump. It would be highly unlikely that this area would sucumbe to any significant flood level. | **N/R** |
| Aluminium Sulphate loading pump. | Located in the Aluminium Sulphate storage bund. The bund is fitted with a pump to evacuate residing water. It would be unlikely that these would be affected by flood conditions. | **N/R** |
| Main compressor (L45 Broomwade) | Located in Alum warehouse along from alum control room. Compressor slightly raised off the floor. The warehouse building is situated at least 1 metre above the roadway so ingress of water highly unlikely. Water could enter the warehouse from the brookside. This would mean the water level rising by 3-4 metres which would be exceptional. If this were to occur Floodpax can be used to stem the ingress of water to the compressor. | **Not possible** |
| Compressor 27 shed. | Located to the right of the door. The compressor is elevated by means of legs. In the event of flood the major components (i.e Motor etc) are situated on top of the receiver and therefore unlikely to become damaged by flood water. The 27 shed can also be sealed from the outside using Floodpax. | **N/R** |
| Compresssor 29 shed | Located to the right of the door. The compressor is situated on a raised plinth. Under flood conditions, the roller shutter door leading to the warehouse can be sealed off using Floodpax to prevent any ingress of water to the 29 shed. | **N/R** |
| No 1 Crushing Equipment | This equipment is located at far end of main aluminium sulphate warehouse – nearest the brook. This is the most prone equipment on site. Part of the elevating machinery is located below ground by aproximately 1.5 metres. In the event of a flood 'floodpax' will be situated under the doors leading out to the brook and around the hopper. Underneath the hopper is a vibro belt which has an electrical supply. Important, therefore, to water does not reach this. For the rest of the equipment, the majority of the motors are off the floor varying in height from 1 metre to approx. 6 metres. As part of the ongoing mainteneance regime, the pits and area under the hopper will be kept clear of product also which would hinder any clean up after flooding (if the worst were to happen). | **Not possible** |
| No.2 Crushing Equipment | This equipment is located near to the main compressor in the aluminium sulphate warehouse, which is a substantial distance from the brook. The likelihood of flood water reaching this equipoment is very unlikely. However it also has a bucket elevator | **Not Possible** |

| | | |
|---|---|---|
| | situated approx. 1.5 metres below ground and a hopper with a vibro belt. It would be prudent in any case to situate 'Floodpax' nearby just in case some water did manage to reach the vulnerable equipment. | |
| Aluminium Sulphate Production - Reactors | There is no possibility of any flood water affecting the reactors. They are mounted several metres high in the production area well out of the way. No pollution issues. | **NR** |
| Aluminium Sulphate Production – Fliter Press | Once again this equipment is situated high up and would not be affected by flood water at all. Again very low risk of polluting the watercourse. | **NR** |
| Ferric Sulphate transfer and loading pumps | Located in the Ferric Sulphate containment bund. The bund is fitted with a pump to evacuate residing water. It would be unlikely that these would be affected by flood conditions. | **NR** |
| Magnetite Slurry vessel and pump | Located in the magnetite shed. Low possibility of water ingressing into area, however, equipment is bolted to the floor. The magnetite material is stored inside on pallets. Unlikely to be swept away but flood packs would be useful to place in front of the roller shutter door and emergency exit at the rear of the shed. | Purchase flood defence pack for area |
| Bacosol Mill | Situated in the top end of the aluminium sulphate warehouse near Ditton Road, this part of the building is in a similar situation to the No.1 Crushing Equipment i.e. fairly close to the brook. There is a slight chance this part of the factory could flood as there are 2 doors at the rear. Again 'Floodpax' would be sited near these doors and implemented if necessary. The mill itself is heavy and the motor is located well off the floor. | The mill could be placed on to pallets if really necessary to prevent water damage |
| Offices | 'Floodpax' can be used to place against the reception and side doors to the office. Any equipment on the floor to be put on shelves or tables. Relocate documents on bottom shelves of cupboards or bottom drawers of filing cabinets to higher sitauations. | Relocate documents on lower shelves in cupcoards to highre ones. Empty bottom drawers of filing cabintesinto archive boxes |
| Computers | Computers stored within the office to be kept above the water level on desks and wrapped in waterproof sheeting/bags to prevent the ingress of water. | **NR** |
| Electrical wiring/junction boxes | Electrical equipment and junction boxes to be isolated from mains power to prevent possibility of electricution and equipment damage. | **NR** |
| Computer Wiring | Computer wiring to be removed form the unit and stored above water level. Plastic bags and wrapping can be used to create a watertight seal. However most computer connection boxes are mounted halfway up wall so should be well out of way of any flood water | **NR** |
| Archived paper documentation | Archive paper is stored above the Alum warehouse at an approximate height of 4 metres. This will area is unlikely to be affected by flood conditions. | **NR** |
| Staff files | Staff files can be stored above water level in plastic wrapping or bags to prevent water damage. | **NR** |

**Additional information** *(insert any additional information about control measures taken to reduce the impact of a flood here)***:**

# Feralco Flood Plan

**Pictures** *(insert pictures of flood prevention measures taken)*:

| Picture | Additional information |
|---|---|
| | |

**Suggested basic building materials to help protect your property:**

| Materials | Used for | Items to protect/where to use | Storage Location | Done |
|---|---|---|---|---|
| Sturdy plastic sheeting - pallet shrinkwrap | Pulling up around furniture and appliances | Protecting office equipment, computers and electrical goods. | Warehouse | Done |
| Strong plastic bags – wheelie bin liners | Putting around legs of tables and chairs | Protecting office furniture | Office boiler room | Done |
| Pallets | Raising stored stock above flood level | Raising of powder stocks above water level in the warehouse. | Aluminium sulphate and Pluspac warehouses | Done |
| Floodpax | Used for preventing the ingress of water to a specific area. | Used to protect office and warehouse spaces. To prevent ingress of water to electrical and mechanical equipment in the office and warehouse. | Located in blue 4-wheeled bins situated around the site | A further Floodpax kit required on Ferric plant |

**Flood plan completed by:**

| | | |
|---|---|---|
| Person(s) completing document | Annette Haliwell | |
| Signatures: | *Annette Haliwell* | |
| Position | SHEQ Manager | |
| Time and date completed | 10th June 2022 | |