



**Plastica Ltd**

**Lower Tier COMAH Site**

## **Emergency Plan**

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**Version: 9**

**HS&E 03**

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# **1.0 Introduction**

## **1.1 Foreword**

Plastica Ltd is a well-established independent manufacturer and distributor of swimming pool products, with one 110,000 sq. ft. site located on Napier Road (Perimeter House) and one 5,000 sq. ft. sites located on Castleham Road (Unit 82) on the Castleham Industrial Estate. The Company employs approximately 70 people.

The type and quantity of material retained at the Perimeter House site for manufacture of their products puts them into the category of a Lower Tier Site under the Control of Major Accident Hazard (COMAH) Regulations 2015.

There are no requirements as a Lower Tier site for either an onsite emergency plan or an external emergency response plan. However, a full Major Accident Prevention Policy (MAPP) has been produced.

East Sussex Fire and Rescue Service (ESFRS), together with the co-operation of Plastica, have developed a Response Plan for an onsite/offsite incident, which was last tested (Exercise Plastica) in July 2017. A table top exercise with ESFRS was conducted in 2021. A further physical test will be conducted as advised by ESFRS.

Hastings Borough Council, with the co-operation of the Emergency Services and Plastica, first published this external plan in 2012 because of the site's proximity to residential and business properties.

## **1.2 Aim and Objective**

### **1.2.1 Aim**

The aim of this plan is to provide a framework for the Company to co-ordinate a response to a major accident on the site.

### **1.2.2 Objectives**

- To identify the area at risk should an accident occur at this site;
- To minimise the impact of a major incident on people, the environment and property through control and containment;
- To inform the authorities and the Competent Authority (CA) of any information necessary to prevent harm to health, property or the environment.
- To ensure a mechanism is in place to liaise with the ESFRS, the police and the CA within the Public Information Zone (PIZ) that a major incident has occurred and the likely implications.

## **1.3 Scope**

This plan covers response specifics applicable to the Plastica Perimeter House site on Napier Road.

However, the plan does not provide details of the evacuation process, refer to HS&E 15 Fire Evacuation Plan.

## **1.4 Definitions**

### **1.4.1 Major Accident**

The term, “major accident” means an occurrence such as a major emission, fire, spill, flood or explosion (toxic gas release) resulting from uncontrolled developments in the course of the operation of any establishment to which these Regulations apply. It can lead to serious danger to human health or the environment (whether immediate or delayed) inside or outside the establishment and involving one or more dangerous substances.

## **2.0 Risk Assessment**

### **2.1 The Site**

Plastica Ltd has been operating from our Napier Road site since September 2001. Throughout this period, our safety record has been very good. There is no history of industrial accidents occurring that have caused concern to public health.

In addition, the company has co-operated with East Sussex Fire and Rescue Service and Hastings Borough Council in the development of this onsite incident response plan.

The Napier Road site is licensed to store up to 153 tons of hazardous material. Predominantly Chlorine and Bromine based swimming pool chemicals (in tablet and granular form) stored in bulk containers and pallets of retail packs, and Sodium Hypochloride (10% - 11%) in pallets of (10 or 5 litre packs), together with small quantities of other chemicals in various forms (including liquid). A list of all chemicals and potential maximum holdings in the Water Treatment Department is in Appendix A.

The site is divided into zones (as per fire alarm zones) to assist planning:

- **Zone 1** Office Block, 1<sup>st</sup> Floor
- **Zone 2** Office Block, Ground Floor
- **Zone 3** Passage from Reception to Factory, Canteen, Main Electrics Room and Pump
- **Zone 4** Covers Storage Area, Old Spa Showroom and Stairwell
- **Zone 5** Covers Department
- **Zone 6** Bay 1 Engineering and Moulding
- **Zone 7** Bay 2 Liners, Timber Products and Compressor House

- **Zone 8** Bay 3 Loading Bay, Warehouse (Chemical Fire)
- **Zone 9** Bay 4 Despatch, Goods In and Warehouse (Chemical Fire)
- **Zone 10** Water Treatment Building (Ground and 1<sup>st</sup> Floor) (Chemical Fire)

A firewall separates Zones 6-7 from Zones 8-9.

The concreted area between site entrance and main factory building is a natural depression. High curbs have been added in this area, there is will also be the capability to deploy an on-site boom across the site entrance road. As a result, this area has the potential to retain spillages and a large amount of fire water run-off.

## 2.2 Hazards

History suggests the likelihood of an accident occurring is low. However, the site being located adjacent to residential and business properties suggests that the impact of a spillage, or release in to the air through fire, could cause a significant impact to public health and the environment.

### 2.2.1 Fire

The site presents a normal industrial fire risk. However, a fire involving stored chemicals will be self-sustaining if it were to take hold. If Bromine and Chlorine based products are involved, the resulting plume will pose a significant threat to the health of our personnel as well as our surrounding neighbours.

Chlorine based chemicals such as Calcium Hypochlorite and Trichloroisocyanuric acid (TCCA) will react within a fire with the various packaging materials, resulting in most of the free Chlorine released reacting with the Hydrogen (hydrolyses) from the packaging to produce Hydrogen Chloride (HCL). HCL is also toxic and corrosive in low concentrations. Experimentation has shown that when there is little or no Hydrogen available from surrounding combustibles, up to 23g of Chlorine can be produced from every kg of Calcium Hypochlorite, with Calcium Chloride being the other main by-product. Therefore, the levels of Chlorine off site must be monitored during a large fire as there is no guarantee that the products will fully hydrolyse.

### 2.2.2 Chemical Spill

Bromine in its solid state, on its own, is very stable and does not present a significant hazard. However, mixed with water it will release toxic and corrosive Bromine vapours that also act as an oxidising agent, therefore increasing the fire risk to the surrounding combustibles.

Chlorine based products such as Calcium Hypochlorite and Trichloroisocyanuric acid (TCCA) in solid form are also stable, however once mixed with water they will release Chlorine vapour that is highly toxic, corrosive and acts as an oxidising agent. When mixed with water hydrochloric acid will be produced, which itself is highly corrosive. However, a spill involving a mixture of stored chemicals has the potential to be explosive. In addition, any plume that results will be toxic and present a significant threat to health.

### 2.2.3 Flood

The likelihood of flood is very remote and would only occur as a result of a burst water main or in the event of a fire; the fire brigade fighting the fire with water.

Bromine in its solid state, on its own, is very stable and does not present a significant hazard. However, mixed with water it will release toxic and corrosive Bromine vapours that also act as an oxidising agent.

Chlorine based products such as Calcium Hypochlorite and Trichloroisocyanuric acid (TCCA) in solid form are also stable, however once mixed with water they will release Chlorine vapour that is highly toxic, corrosive and acts as an oxidising agent. When mixed with water, hydrochloric acid will be produced, which itself is highly corrosive.

### 2.2.4 Explosion (Toxic Gas Release)

The likelihood of explosion is very remote and would only occur as a result of two substances being mixed incorrectly or a racking collapse mixing two substances.

## 2.3 Risks to Persons

**Bromine** – Inhalation of the irritant Bromine vapours and/or direct contact (liquid or vapour) with skin and mucous membranes will produce direct tissue injury. Injury may occur at various levels of the respiratory tract depending on the concentration of bromine and duration of exposure. Affected organs include the upper and lower respiratory tract, skin, and eyes.

In the event of a fire people within the direction of the plume may suffer some minor effects of bromine vapour to a lesser degree.

AEGLs for Bromine are: AEGL 1 = 0.033ppm, AEGL 2 = 0.55ppm for 10 minutes, AEGL 3 = 19ppm for 10 minutes.

**Chlorine** – Exposure to Chlorine vapour of levels as low as 1 part per million (ppm) for a few minutes can cause eye, nose, and throat irritation.

Exposure to concentrations above 30 ppm, even for a short period, can be dangerous, causing severe breathing difficulties such as coughing, tightness in the chest and wheezing. Pulmonary oedema (fluid on the lungs) may occur several hours afterwards.

Breathing even very low concentrations of Chlorine can aggravate the symptoms of existing respiratory diseases such as bronchitis and asthma.

AEGLs for Chlorine are: AEGL 1 = 0.5ppm, AEGL 2 = 2.8ppm for up to 30 minutes, AEGL 3 = 50ppm for 10 minutes.

**Hydrogen Chloride** - Hydrogen Chloride forms corrosive hydrochloric acid on contact with water found in body tissue. Inhalation of the fumes can cause coughing, choking, inflammation of the nose, throat, and upper respiratory tract, and in severe cases, pulmonary oedema, circulatory system failure, and death. Skin contact can cause redness, pain, and severe skin burns. Hydrogen chloride may cause severe burns to the eye and permanent eye damage.

AEGLs for HCL are: AEGL 1 = 1.8ppm, AEGL 2 = 100ppm for 10 minutes, AEGL 3 = 620ppm for 10 minutes.

## **3.0 Response**

### **3.1 Response Overview**

#### **3.1.1 Introduction**

The basis of the response strategy to an event is dependent upon the time of day/night as the site is unattended at night.

In the event of a major incident during the day:

- Evacuation of the site;
- Contact ESFRS;
- Attempt containment where safe to do so;
- Liaise with ESFRS, police and CA.

In the event of a major incident at night:

- Alarms automatically contact the call monitoring company who would contact the security company and ESFRS. The security company would contact the keyholders as applicable
- If required key holders would attend site to liaise with ESFRS, police and CA.

#### **3.1.2 Coordination, Roles and Responsibilities**

##### **3.1.2.1 Coordination**

A chart depicting the organisational response to a major incident is shown in Appendix C.

##### **3.1.2.2 Roles and Responsibilities**

Those likely to attend as a result of a Major Incident involved on our site include our:

- Finance & Operations Director with special responsibilities for Health, Safety, Fire & Environmental Issues (FOD HSFE) and a Fire Officer.
- HR Officer with special responsibility for Health, Safety, Fire & Environmental Issues (HR HSFE) and a Fire Officer.
- Fire Officer.

### **3.2 Triggers**

A Major (onsite) Incident that has or may have the potential to affect people's health or the environment in any part of the surrounding area will be considered a trigger for activating this plan.

### **3.3 Alerting Procedure**

In the event of a fire in working hours, a Fire Officer will contact the emergency services, they will advise the emergency services whether the chemical storage areas are involved; if they are, then the fire service response is upgraded.

In the event of a fire outside of working hours, the emergency services will be contacted by the automatic alarm, who are advised by the call handling centre whether the chemical storage areas are involved; if they are, then the fire service response is upgraded.

One of the Company's Fire Officer's will meet the fire services on their arrival and brief them on the situation.

In the event of any other emergency, the decision to contact the emergency services will be made by the FOD HSFE or the HR HSFE who will act as company liaison. If neither of these are on site, a Fire Officer would be nominated to take responsibility in their absence.

Outside of working hours, the automatic alarm would be triggered in the case of a fire and staff contact arrangements are in place.

All departments are issued with internal emergency contact numbers.

In the event of a spill the relevant Supervisor/Manager will notify the FOD HSFE or the HR HSFE.

### **3.4 Immediate Actions**

In the event of a fire during the day the company follows the guidelines laid out in HS&E 15 Fire Evacuation Procedure.

The alarm automatically contacts the call monitoring company who inform the emergency services. A Fire Office must also contact the emergency services to inform them of the fire and whether chemical storage areas are involved, if they are then the fire service response is upgraded.

One of the Company's Fire Officer's will meet the fire services on their arrival and brief them on the situation. The Company Fire Officer will then be advised by the fire services on how to evacuate the staff from the site if not already done.

In the event of a chemical fire, the evacuation point may be moved indoors (ground floor office block (currently the Customer Services Department)). All windows and doors must be closed immediately, and the air conditioning units turned off.

The site will need to be bunded using clay mat drain covers and the water barrier across the driveway by ESFRS (following drills with our own Fire Wardens this takes approximately 1 hour to fully bund the site). The water barrier can hold 10 tonnes of water for approximately 20 minutes before the barrier will start to leak (as tested April 2023), after 20 minutes' water spray would stop and the water would need to be removed or the runoff diluted (arrangements are in place with an external contractor to do this).



In the event of a fire during the night, the alarm monitoring service contacts our security company, who will attend site and notify the key holders.

In the event of a spillage the Spill Team follow the procedure as laid out in our Spillage Procedure. In the event of a major spillage the FOD HSFE or the HR HSFE will contact the emergency services and the EA.

Spill kits are located at strategic points around the building and training has been given to the relevant personnel.

### Liquid Chemicals

Refer to the Spillage Procedure – see Appendix D.

In the event of a major liquid spillage, the Spill Team follow the procedure as laid out in our Spillage Procedure. The FOD HSFE or HR HSFE would decide if the emergency services are required and if the site needed to be evacuated. The area must be bunded and drains sealed with clay mats. An external contractor would be required to remove the spillage. The correct PPE must be worn before action is taken.

### Solid Chemicals

Refer to the Spillage Procedure – see Appendix D.

If raining during a solid spillage the site must be bunded. Correct PPE needed before action taken.

In the event of a major solid spillage in the rain, the Spill Team follow the procedure as laid out in our Spillage Procedure. The FOD HSFE or HR HSFE would decide if the emergency services are required and if the site needed to be evacuated. The area must be bunded and drains sealed with clay mats. An external contractor may be required to remove the spillage. The correct PPE must be worn before action is taken.

### Explosion - Toxic Gas Release

In event of small gas release, vent the area and evacuate if required. Correct PPE needed before action taken.

In the event of a large gas release, follow the fire evacuation procedure, seal the area where the release has occurred and seal the area evacuated to (Customer Services). Administer first aid and send to A&E if required. Notify the Fire Authorities, HSE and EA. Correct PPE needed before action taken.

## **3.5 Step-down Criteria**

Fire – emergency services decision.

Spillage – once contained, site made safe and agreed by FOD HSFE or HR HSFE (Fire Officer or Snr Manager in their absence).

Flood – cause isolated, water contained and site made safe agreed by FOD HSFE or HR HSFE (Fire Officer or Snr Manager in their absence)

Toxic Gas Release – emergency services decision.

### **3.6 All Clear Criteria**

Fire – fire is out and site is safe to enter and given all clear by emergency services.

Spillage – removal of substance and contaminated area cleared and safe.

Flood – water/residue removed, building made safe for entry and no risk of contamination from residue.

Toxic Gas Release – area free of contaminants and given all clear by emergency services.

## **4.0 Training and Testing Requirements**

Fire – a minimum of two fire drills per year, Fire Warden training, regular test of the water barrier, major exercise every 5 years (or as advised by ESFRS) with ESFRS and emergency services.

Spill training – regular training exercises for the dedicated spill team.

## **5.0 Future Action**

Appendix A Review

Appendix B Review

Appendix A – list of all chemicals and potential maximum quantities held in the Water Treatment Department, Warehouse and Containers

Appendix B – Location of chemicals within the Warehouse and details of website with up to date stock levels on site. All changes to be notified to FOD HSFE and/or HR HSFE.

Appendix C - A chart depicting the organisational response to a major incident

Appendix D – Spillage Procedure and Spillage Procedures when Driving

## Appendix A

List of all chemicals and potential maximum quantities held in the Water Treatment Department

Storage	Chemical	Weight	Safety Data Sheets	CAS Number	UN Number
Bay 1	No chemicals stored				
Bay 2	Trichlor	18000kg	005/006	87-90-1	2468
Bay 3	Bromine	3000kg	016	32718-18-6	1479
	PH plus	10000kg	022	497-19-8	-
	TA plus	3000kg	023	144-55-8	-
	Harden plus	2000kg	024	10043-52-4	-
	Oxygen Tablets	1200kg	026	70693-62-8	-
Bay 4	PH Minus	22000kg	021	7681-38-1	-
Bay 5	Stabilised Chlorine	10000kg	001	51580-86-0	3077
Bay 6	Shock Chlorine	18000kg	010/011/012	778-54-3	3487
Bay 7	TA Plus	4000kg	023	144-55-8	-
	Hardness Plus	2000kg	024	10043-52-4	-
	Chlorine reducer	1000kg	055	7772-96-7	-
	Oxone	2000kg	027	70693-62-8	-
	Granular Floc	3000kg	041	16828-11-8	-
Bay 8	Trichlor	20000kg	005/006	87-90-1	2468
Bay 9	PH Plus	10000kg	022	497-19-8	-
	Bromine	5000kg	016	32718-18-6	1479
Bay 10	PH Minus	25000kg	021	7681-38-1	-
Bay 11	Stabilised Chlorine	22000kg	001	51580-86-0	3077
Bay 12	Shock Chlorine	16000kg	010/011/012	778-54-3	3487

List of all chemicals and potential maximum quantities held in the Warehouse

Storage	Chemical	Weight	Safety Data Sheets	CAS Number	UN Number
<b>Aisle A</b>	Hydrochloric Acid 32%	300 litres	081	7647-01-0	1789
	Hydrochloric Acid 10%	500 litres	080	7647-01-0	1789
	Sodium hypochlorite, solution 14 - 15% Cl active	4000 litres	014	7681-52-9	1791
<b>Aisle D</b>	Poly Aluminium Chloride	300 litres	032	39290-78-3	3264
	Hydrogen Peroxide 12%	300 litres	018	7722-84-1	2984
<b>Aisle E</b>	Trichlor	10000kg	006	87-90-1	2468
<b>Aisle F</b>	Trichlor	35000kg	005/006	87-90-1	2468
<b>Aisle L</b>	Shock Chlorine	8000kg	010	778-54-3	3487
	PH plus	5000kg	022	497-19-8	
	PH Minus	5000kg	021	7681-38-1	
<b>M Aisle</b>	Chlorine reducer	2000kg	055	7772-96-7	
	Hardness Plus	9000kg	024	10043-52-4	
	TA Plus	9000kg	023	144-55-8	
<b>P Aisle</b>	Stabilised Chlorine	15000kg	001/002	51580-86-0	3077
	troclosene sodium, dihydrate	3000kg	013	51580-86-0	3077
<b>Q Aisle</b>	Stabilised Chlorine	6000kg	001	51580-86-0	3077
<b>S Aisle</b>	Corrosive Liquids	14000 litres			
<b>V Aisle</b>	Non Corrosive Liquids	12000 litres			
	Oxygen Tablets/Non Chlorine Shock	5000kg	026/27	70693-62-8	

List of all chemicals and potential maximum quantities held in the Containers

Storage	Chemical	Weight	Safety Data Sheets	CAS Number	UN Number
CONT1	Trichlor	10000kg	005/006	87-90-1	2468
CONT2	Stabilised Chlorine	15000kg	001	51580-86-0	3077
CONT3	Bromine	10000kg	016	32718-18-6	1479
CONT4	No chemicals stored				
CONT5	No chemicals stored				
CONT6	No chemicals stored				
CONT7	No chemicals stored				
CONT8	Trichlor	10000kg	005/006	87-90-1	2468
CONT9	Trichlor	5000kg	005/006	87-90-1	2468
CONT10	No chemicals stored				
CONT11	Trichlor	24000kg	005/006	87-90-1	2468
CONT12	Stabilised Chlorine	10000kg	001	51580-86-0	3077
IBCSTORE1	Sodium hypochlorite, solution 14 - 15% Cl active	5000 litres	014	7681-52-9	1791
IBCSTORE2	Sodium hypochlorite, solution 14 - 15% Cl active	5000 litres	014	7681-52-9	1791

## Appendix B

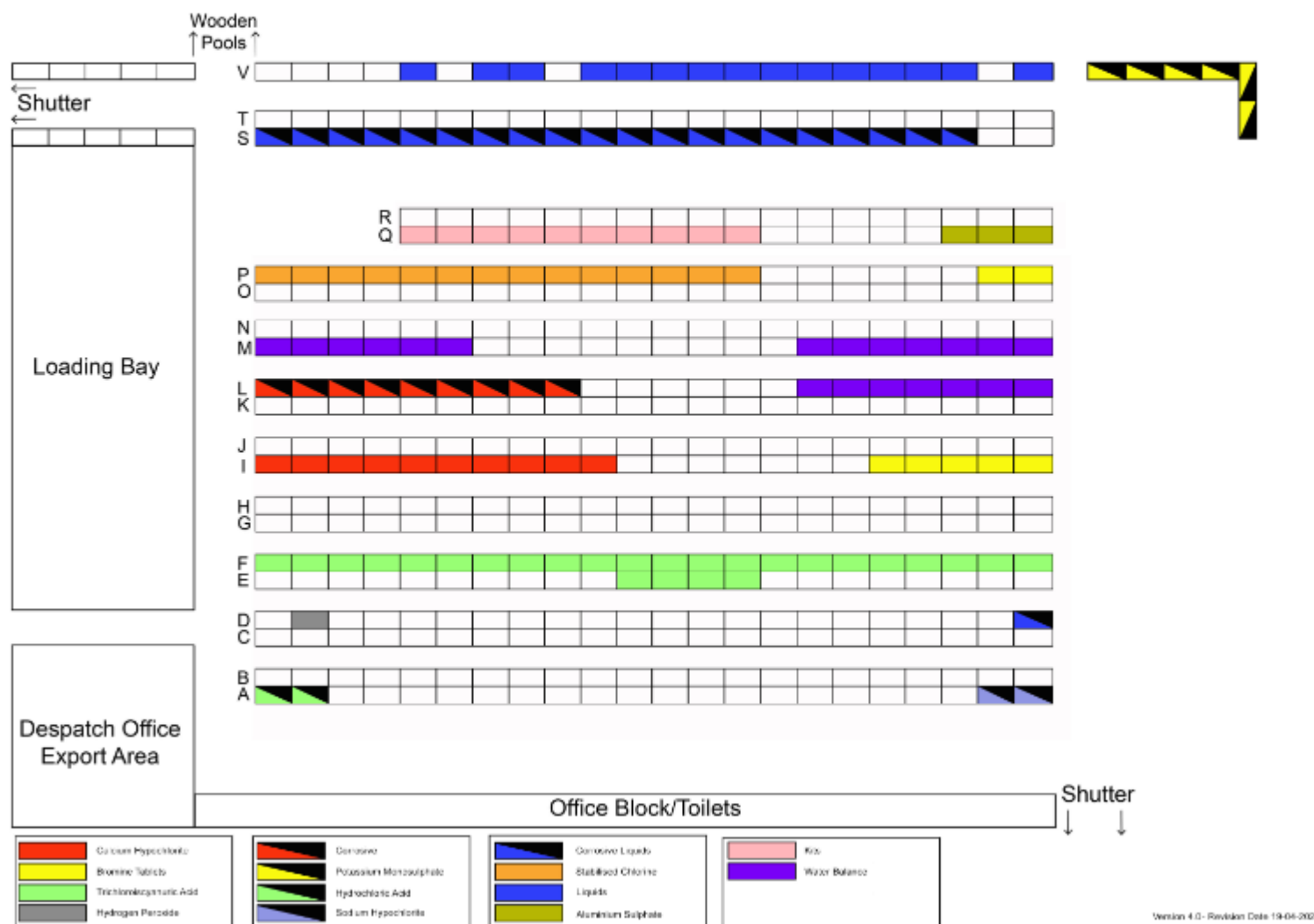
<http://emergency.plasticapools.net/>

Website includes:

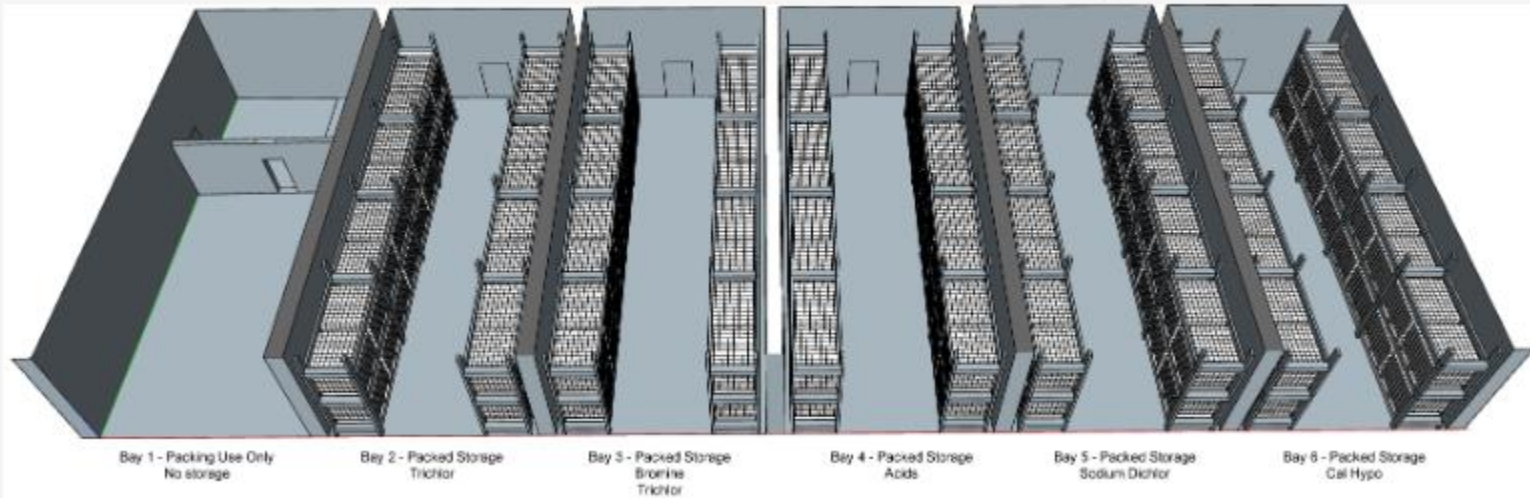
Company / Building Information  
Emergency and Site Information  
Darcy Spillcare  
Emergency Plans  
Alarm Testing and Evacuation  
Reports

Chemical Datasheets  
Chemicals On Site  
Fire Info  
Safety Lighting  
Spill Info  
Maintenance

# Warehouse Chemical Layout

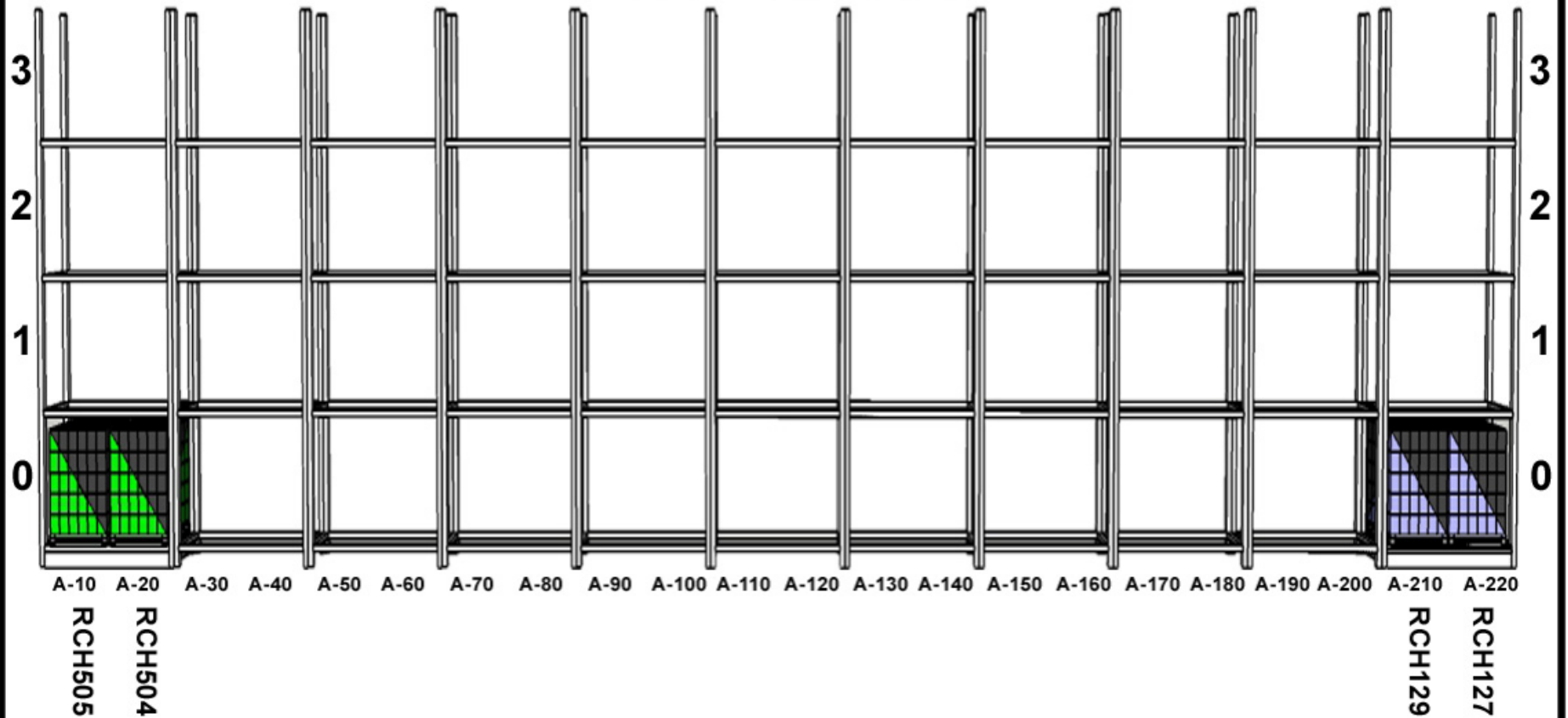


# Water Treatment Building Layout

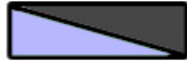




# A Aisle



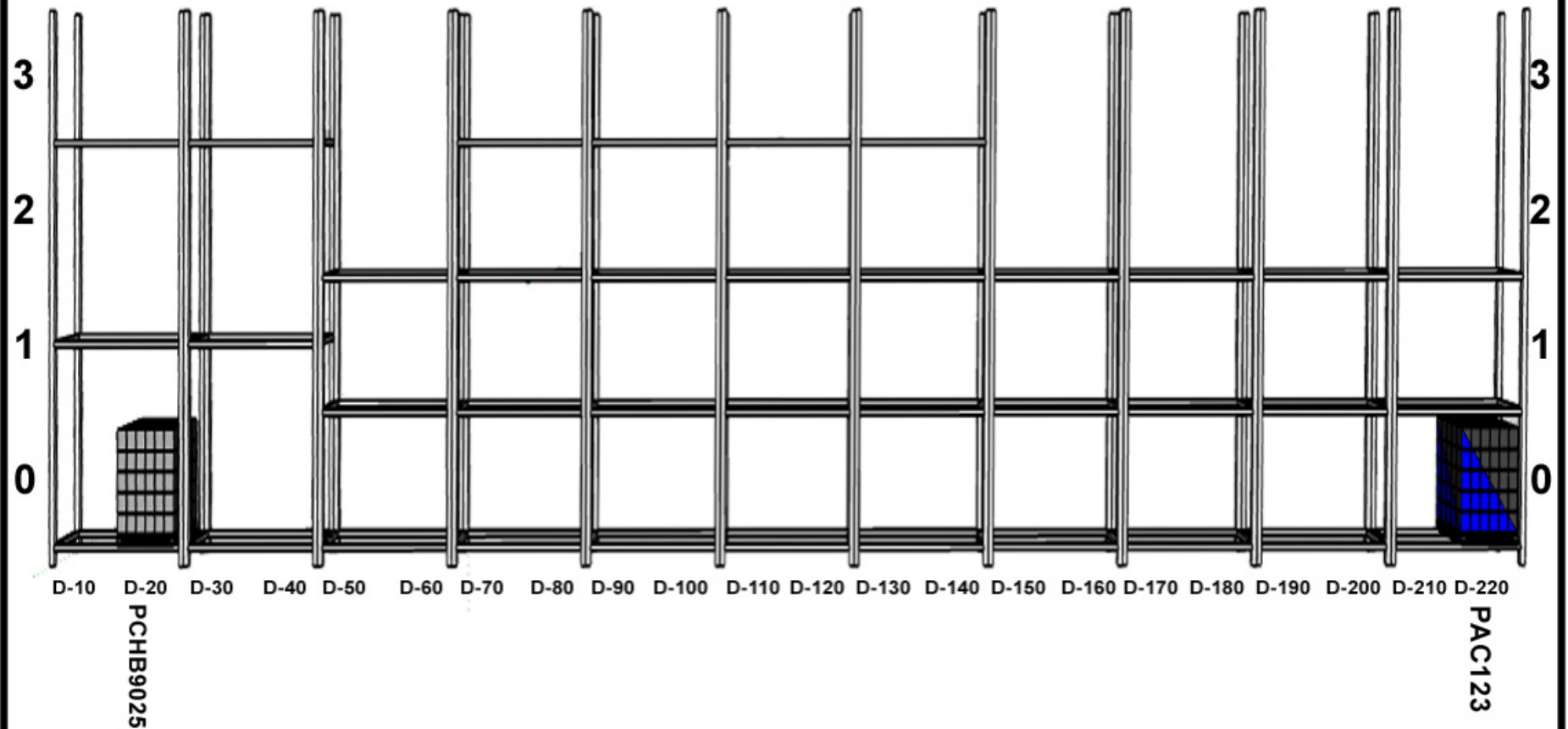
Hydrochloric Acid



Sodium Hypochlorite

Version Aa1.2

# D Aisle



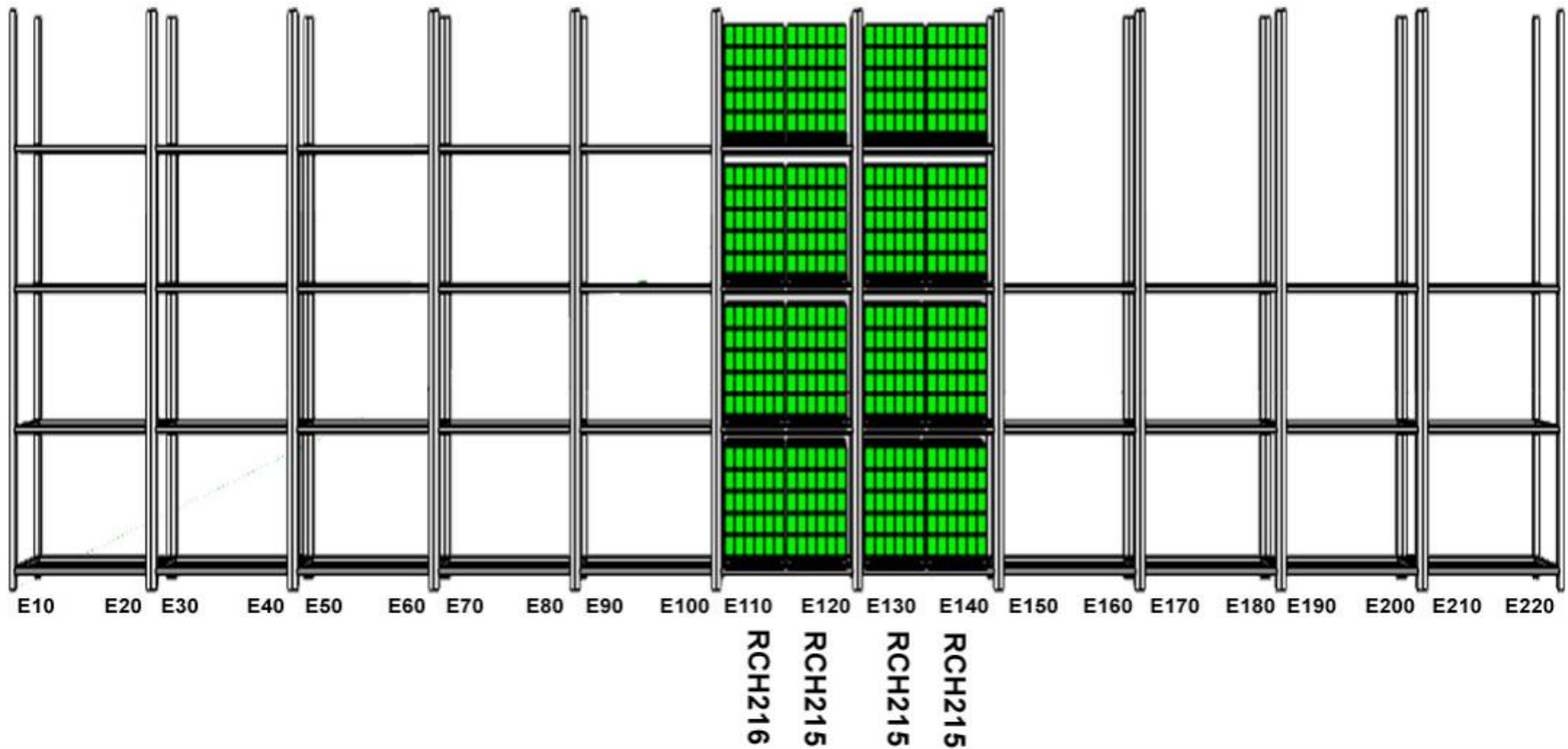
Corrosive Liquids



Hydrogen Peroxide

Version Da1.2

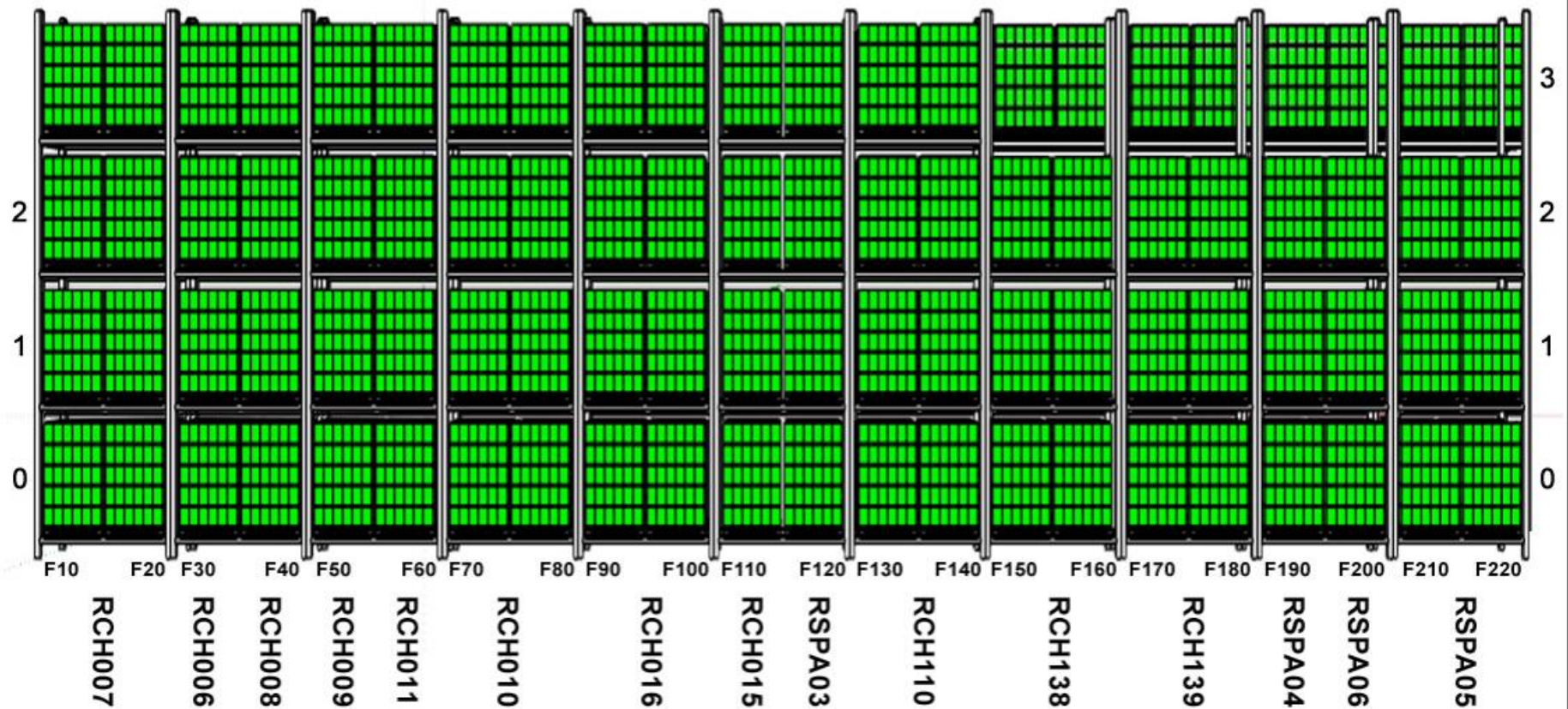
# E Aisle



Multi Tabs

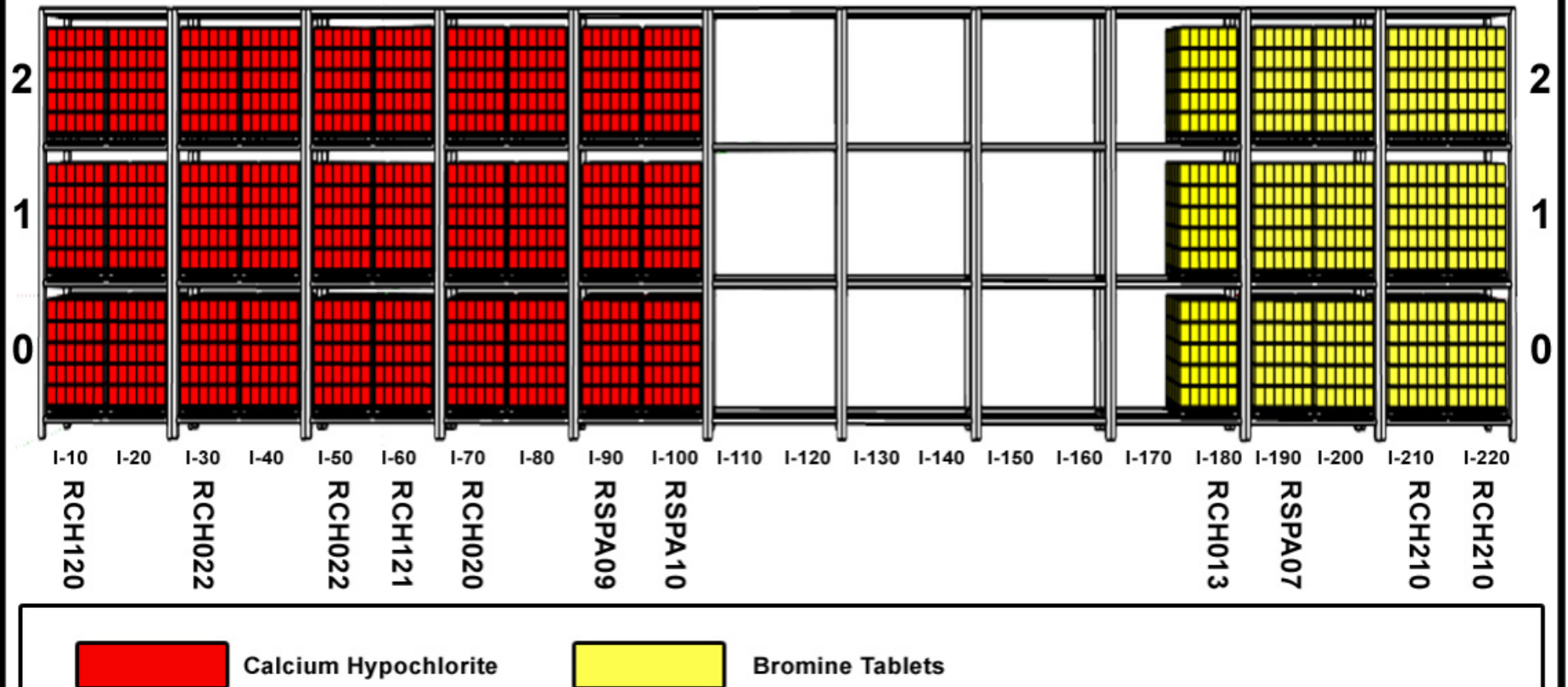
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# F Aisle



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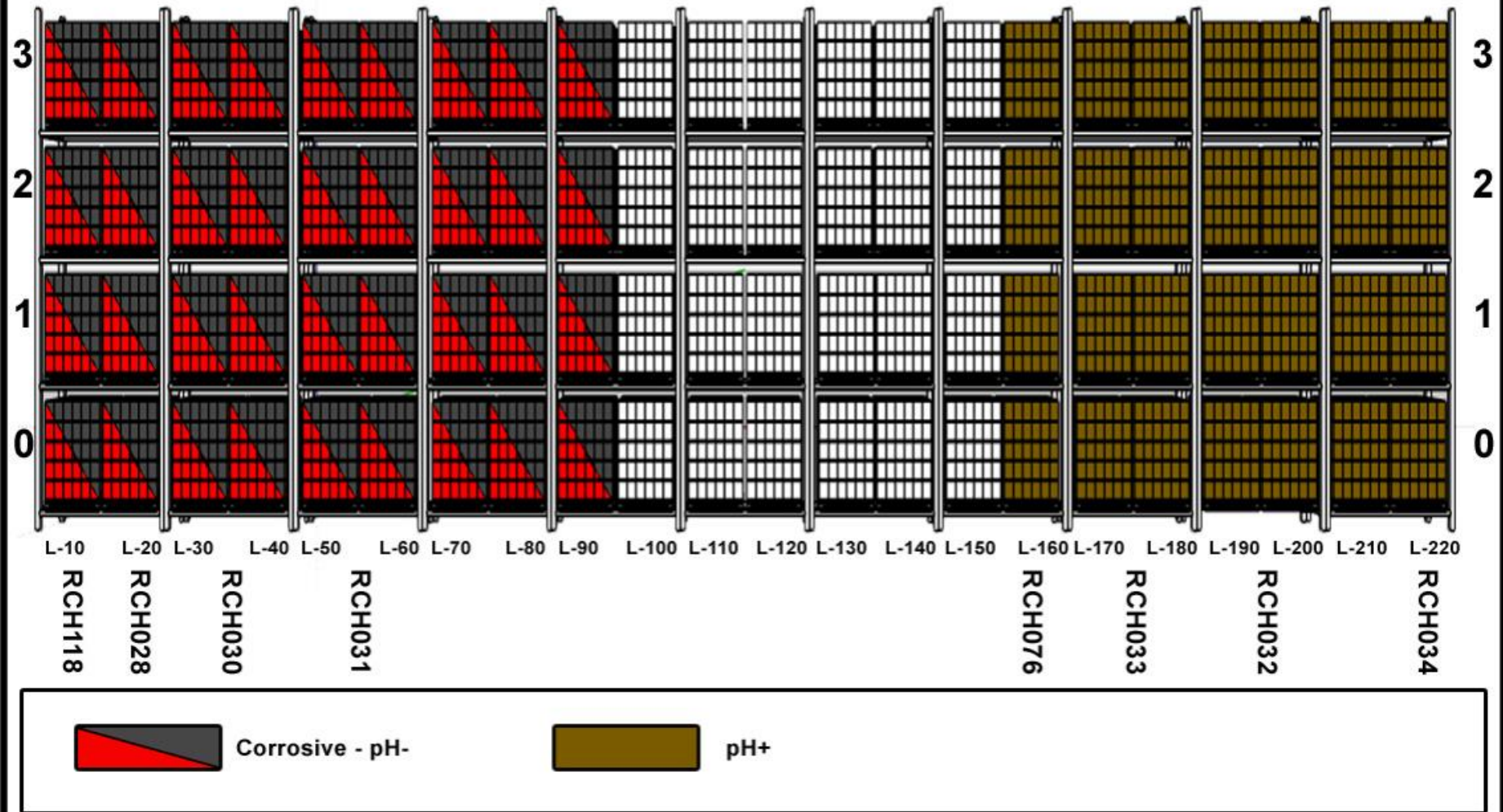
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Version Ia1.2

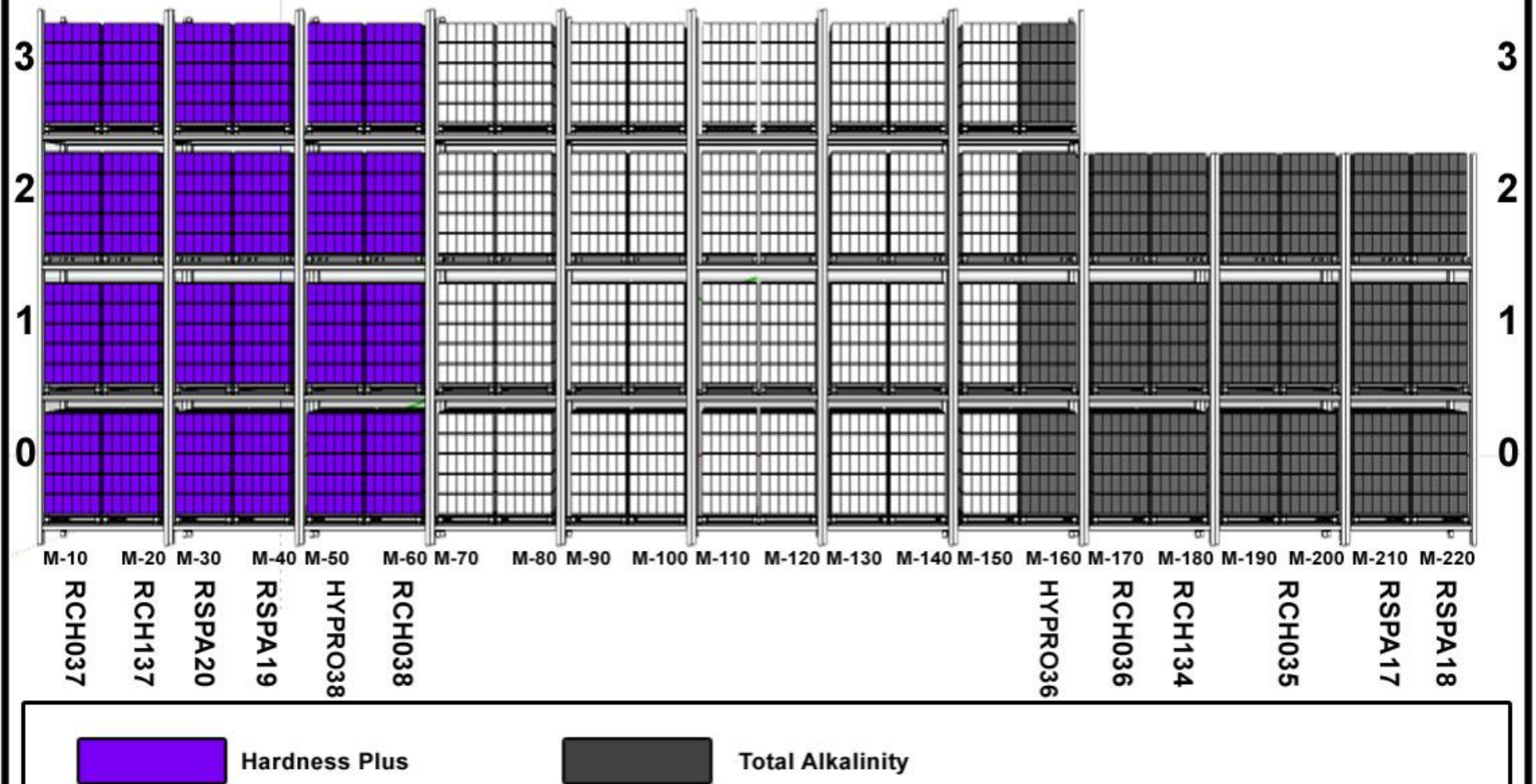


# L Aisle



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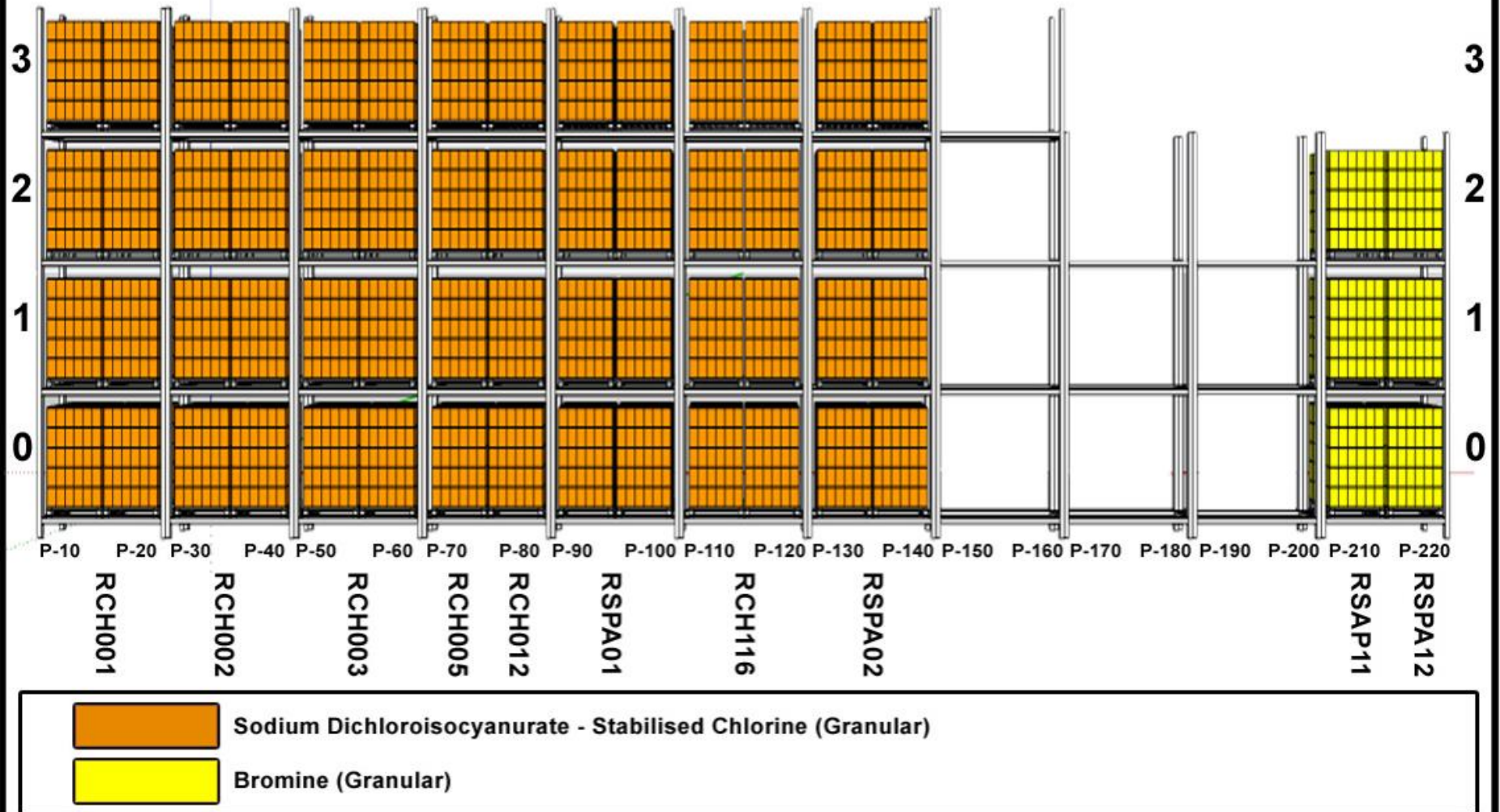
# M Aisle



Version Ma1.2



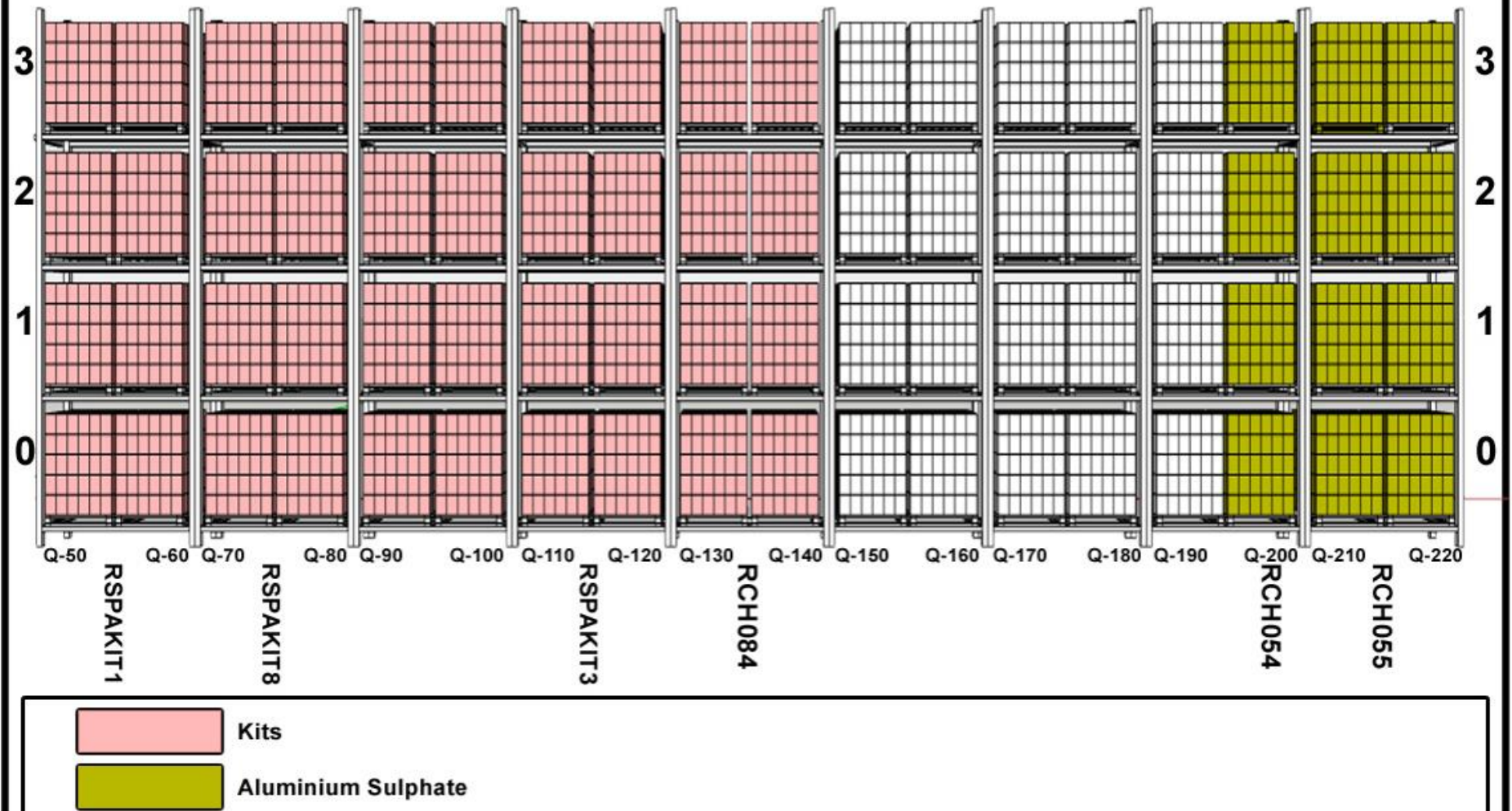
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Version Pa1.2

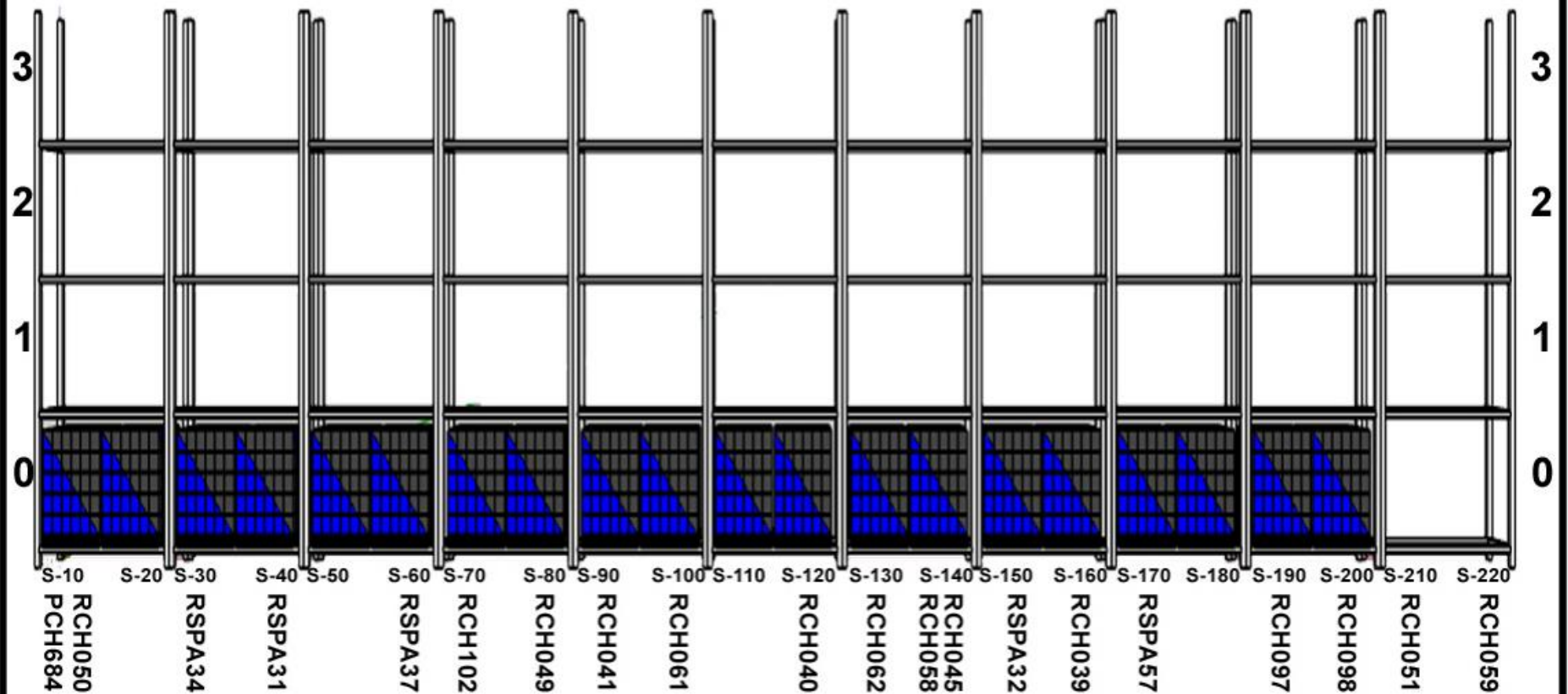


# Q Aisle



Version Qa1.2

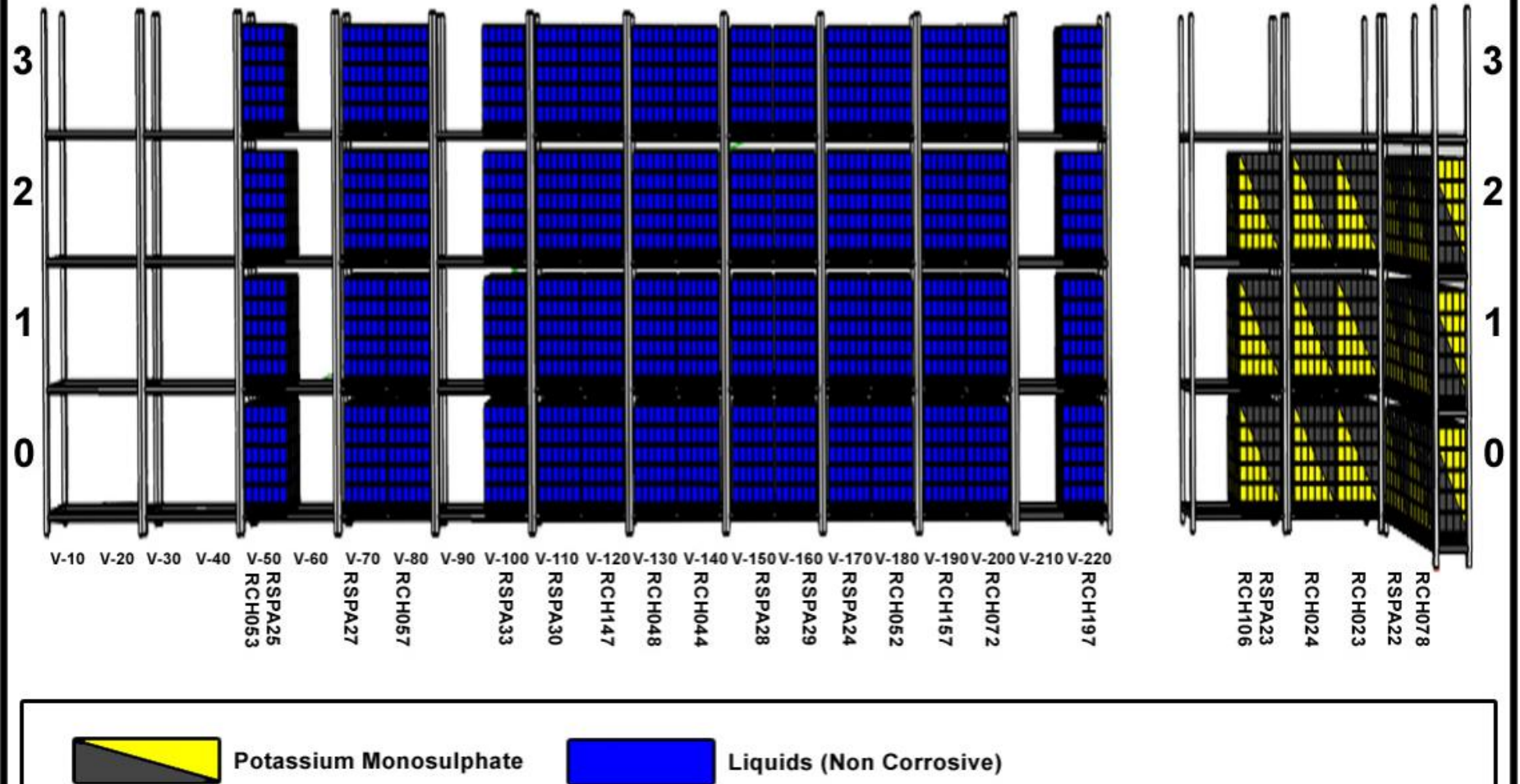
# S Aisle



Corrosive Liquids

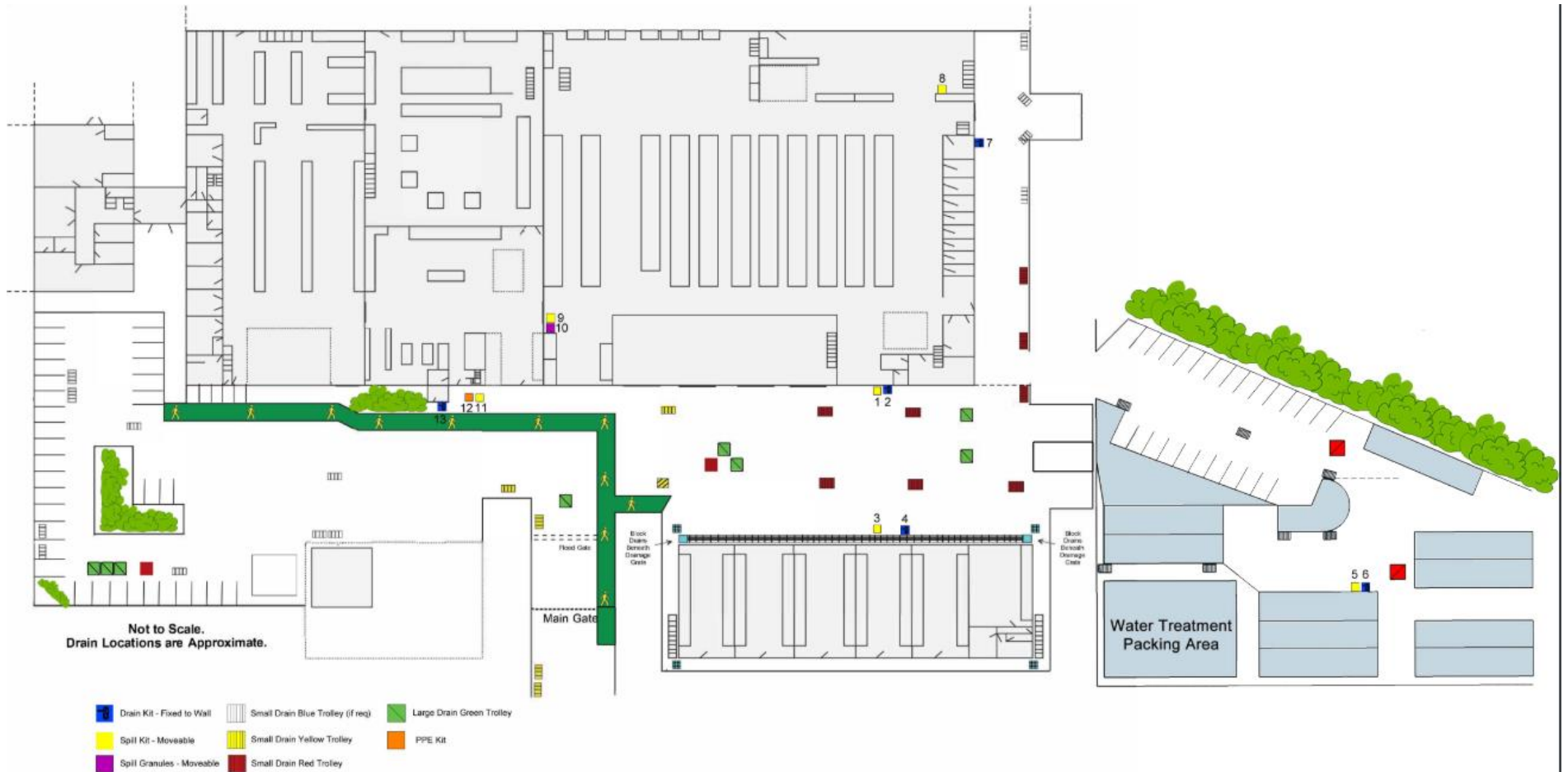
Version Sa1.2

# V Aisle



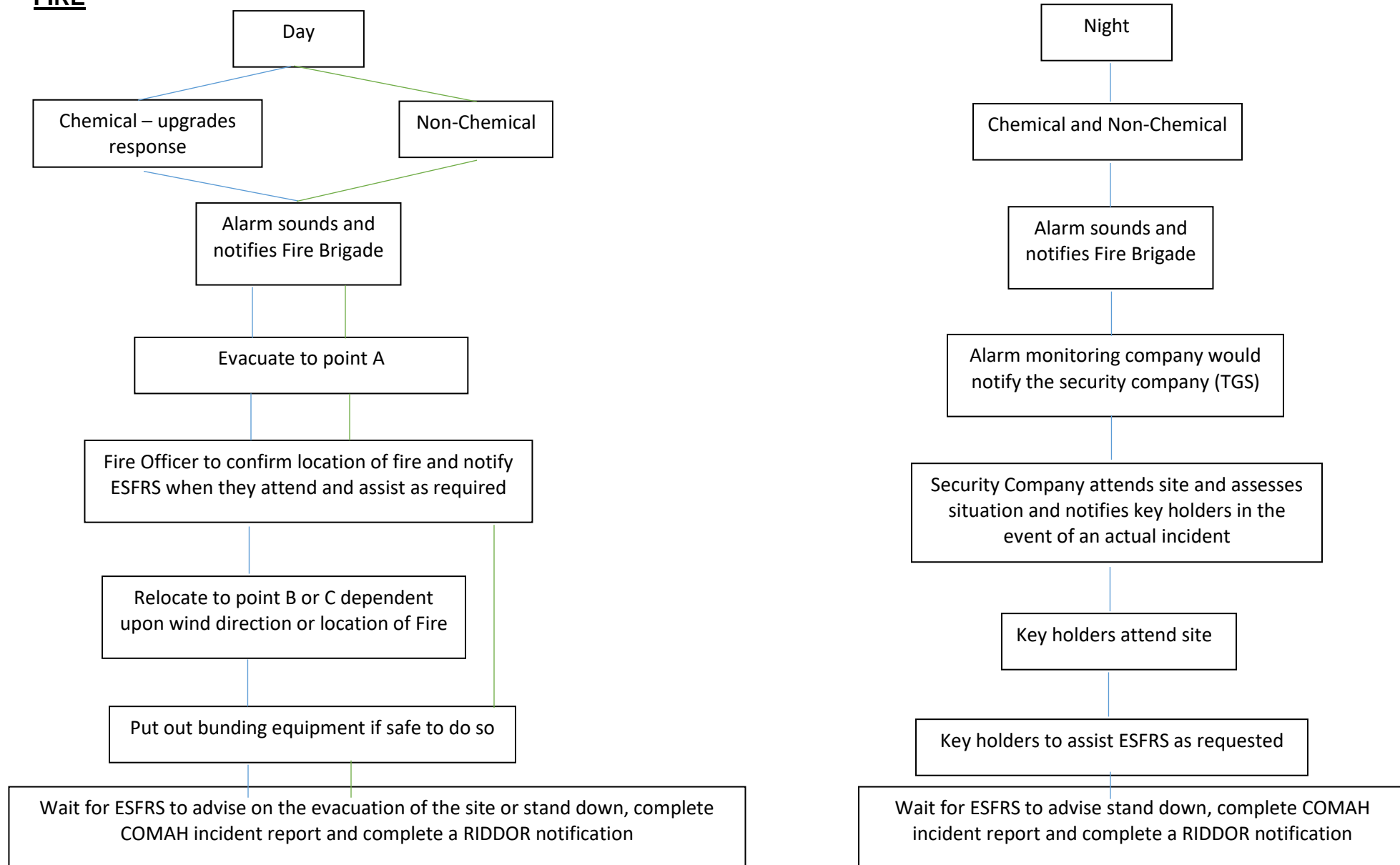
Version Va1.2



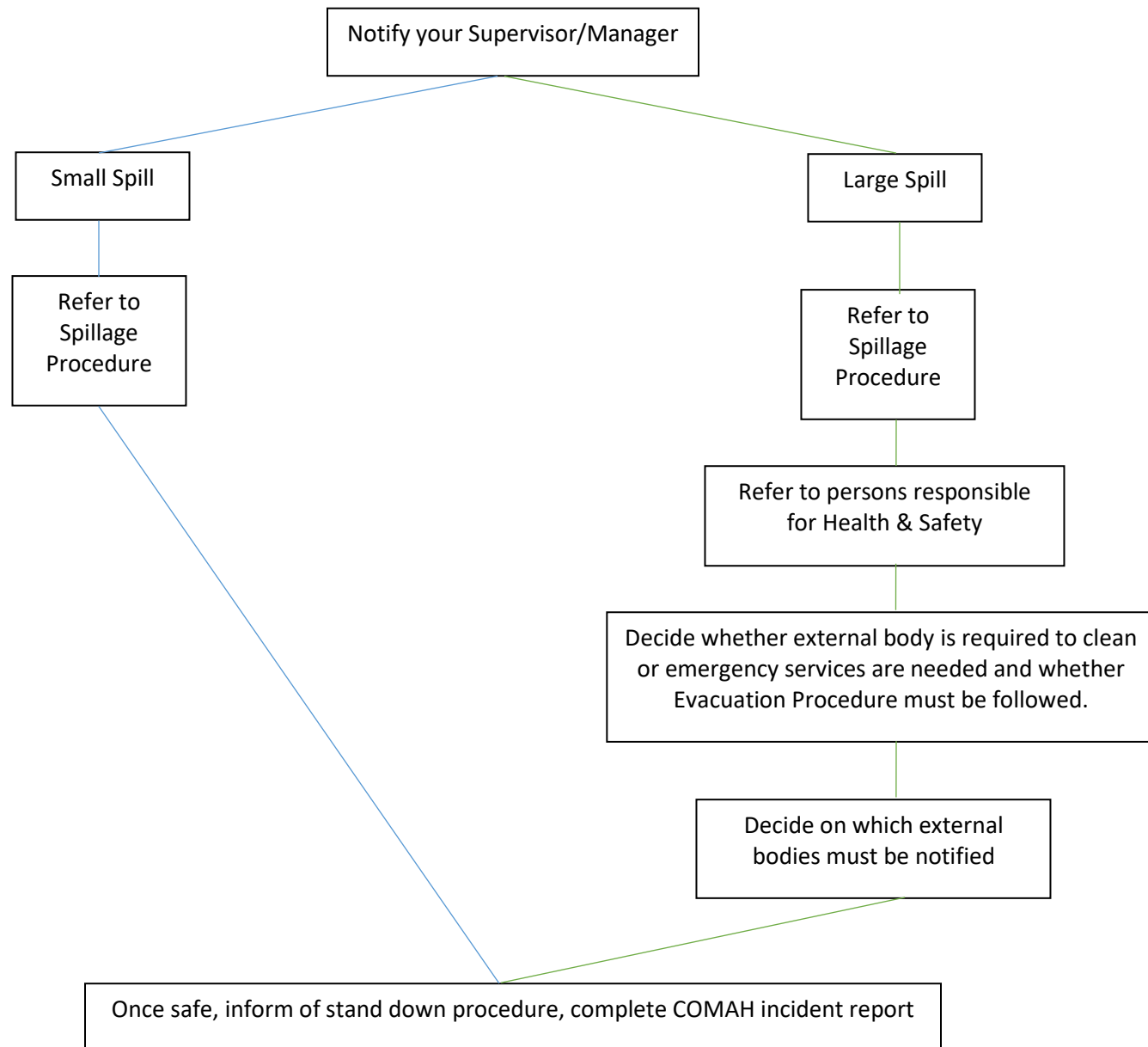


## Appendix C

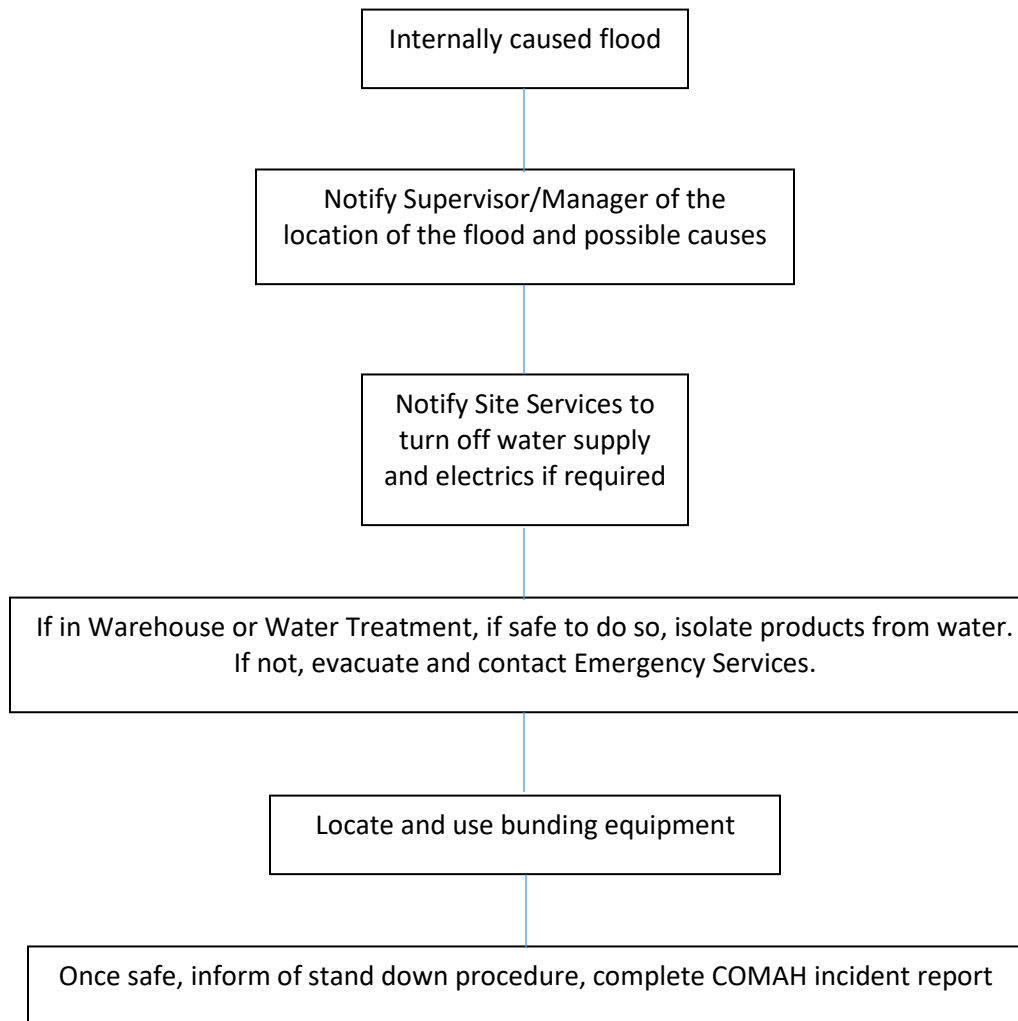
### **FIRE**



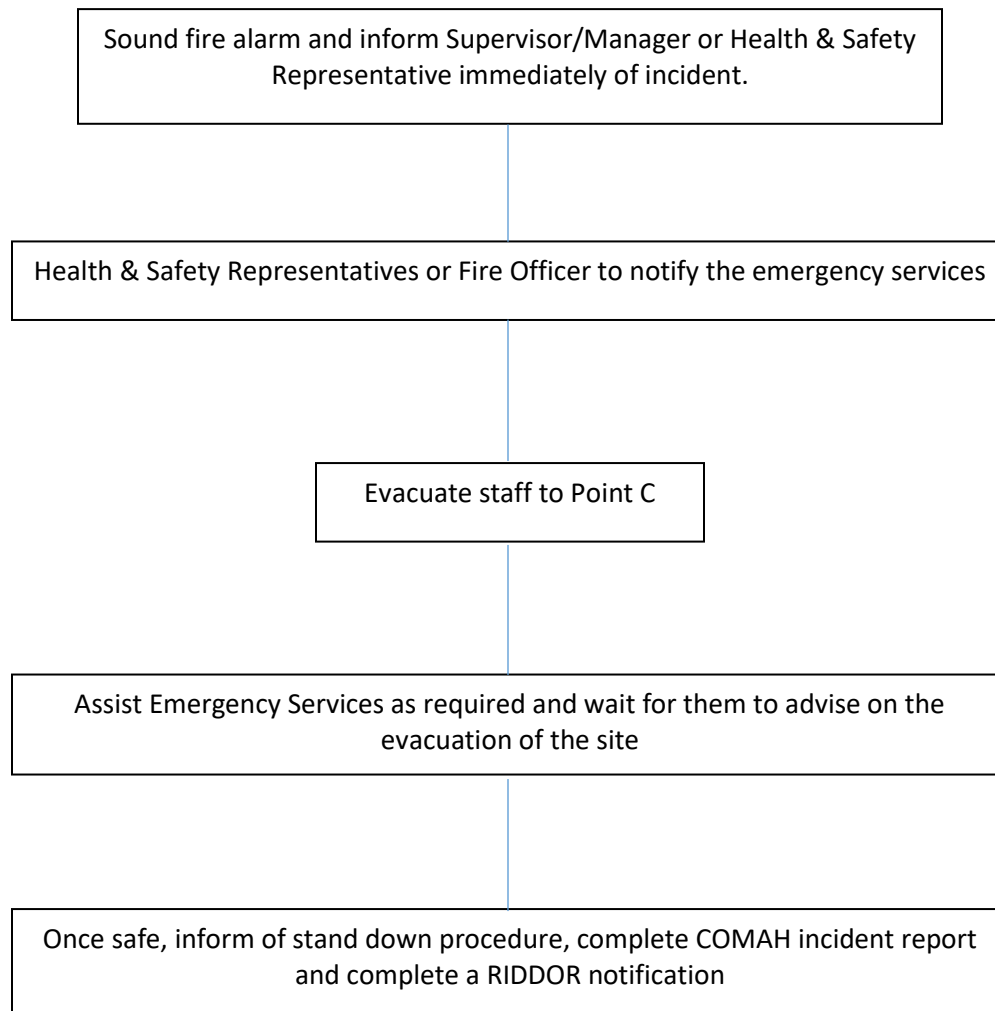
## SPILL



## FLOOD



## **EXPLOSION - TOXIC GAS RELEASE**





# SPILLAGE PROCEDURE

In the event of an accidental leakage or spillage of material, all staff should comply with the following procedure:



## GENERAL

Always wear personal protective equipment (e.g. gloves, eye protection, overalls, suitable footwear) appropriate to the tasks and hazards of the chemical(s) involved.



Familiarise yourself with these procedures and the materials for spillage control.

## SMALL SPILLAGES

- Liquids – use absorbent paper
  - Solids – sweep up
- } transfer to container for subsequent disposal



## LARGE SPILLAGES

- Instruct others to keep a safe distance and inform management.

### Liquids

- If necessary, contain using a spillage control kit.
- Ventilate spillage area as far as possible.
- Add prescribed absorbent to spilt material and mix.
- Transfer in suitable container for atmospheric evaporation.
- Label as appropriate for subsequent disposal.

### Solids

- Take up material into suitable container, if necessary adding water.
- Label as appropriate for subsequent disposal.

### Post Spillage

- Wash spillage area thoroughly with water and detergent.
- Display warning signs before floor is dry.
- Dispose of absorbed material and contaminated PPE.



## **Spillage Procedure When Driving**

If carrying chemicals before leaving site, check that a full ADR kit is on board

Stop in a safe area and do not travel too far with the spillage leaking on the road. A safe place is:

- Not on a blind bend
- Ideally in a layby
- Not on yellow lines
- Clear of junctions
- Clear of drains – if you have no alternative but to stop near a drain, drain covers must be used immediately
- Ideally on asphalt and clear of grass verges
- Well lit

Turn off ignition and turn on hazard lights

Put on hi-viz jacket

Locate the ADR kit and put on PPE (gloves, goggles, overalls and suitable footwear)

Position warning triangle in a safe and appropriate place

Identify the leaking chemical:

- If liquid - contain the spread by placing booms around the container and spread absorbent granules over the liquid spill
- If solids – sweep up the spill

If possible place the split container into a containment vessel and place securely in the truck bed/boot for return to the Warehouse Manager.

Once the spill has been contained and cleaned up, report the incident to the Warehouse Manager (01424 857790) and the Finance & Operations Director (01424 857730) or the Operations Manager (01424 857762) during normal working hours

All equipment to be disposed of accordingly and replaced in the ADR kit on return

If spillage is too big to contain, contact the Emergency Service(s) immediately and provide them with the relevant hazardous paperwork or access to the online database. Contact the Warehouse Manager to report the incident during normal working hours.