

Britannia Refined Metals Ltd

Emergency Response Plan



1. Company Profile

Site Information

Britannia Refined Metals Ltd (BRM) was originally set up in 1930 as The Britannia Lead Company and changed its name to Britannia Refined Metals Ltd in 1976. BRM became a part of the Glencore PLC in May 2013. BRM refines lead bullion and produces high quality 99.99 pure lead, bespoke lead alloys and Silver.

The site, under the name of Britannia Refined Metals Ltd, employs 160 people and is part of the Zinc Division of Glencore. The principal manufacturing units are the Isa Refinery and the Silver Plant. The site is equipped with its own analytical laboratory, workshops, administrative offices, stores and engineering departments.

Britannia Refined Metals Ltd is a top tier COMAH (Control of Major Accident Hazards regulation) site due to its production and handling of in-house waste products containing various levels of lead monoxide (PbO), which is deemed to be acutely and chronically toxic to aquatic life.

Britannia Refined Metals Ltd is bordered on the east by the river Thames and on the west by Botany Marsh. The major accident/s that could occur on the site is a MATTE (Major Accident to the Environment) event due to flooding that could carry wastes containing lead monoxide (PbO) to the river or the marsh or both.

The safety report confirms that in response to the Hazardous Substance Planning Consent a zero consultation distance around the site has been recommended; on this basis the hazards are primarily environmental.

Location:

Britannia Refined Metals Ltd
Northfleet
Gravesend
Kent
DA11 9BG

Telephone: (01474) 538200

Registered in England Number 252455

Business (Product Range)

Britannia Refined Metals Ltd manufactures and sells the following products which are included in the scope of its BS EN ISO 9001 certification, 12.12.2003:

- Lead
- Lead alloys

2. Purpose

Prepared by (Originator): Alan Booty Date: 16.10.2017	Issue No: 4 Date: 04.05.2023	TEMPLATE: Issue No: 4
Approved By: The Management Team	Next Review due: 04.05.2024	

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- 2.1. This Emergency Response Plan defines the organisational structure and procedures for response to emergencies including Major Accidents and Major Accidents to the Environment as detailed in the current COMAH Regulations.
- 2.2. It assigns the roles and responsibilities for the implementation of the plan during an emergency following activation of the Emergency Response Process.
- 2.3. The overall aim of the Emergency Response Process is to support the business and environment by planning for and responding to emergencies as defined in this procedure.
- 2.4. In short:-
“To detail action to be taken to minimise the consequences to the health and safety of people and the environment in the event of an emergency involving a major accident”
- 2.5. It assigns the roles and responsibilities for the installation, maintenance and testing of all required equipment and system.
- 2.6. Sets out when and how the external emergency plan would be invoked

3. Scope

- 3.1. This BRM procedure is applicable to site staff, contractors and visitors.
- 3.2. This BRM procedure is applicable to any foreseeable condition or event that could be significant in bringing about a Major Accident or Major Accident to the Environment on the:-
Britannia Refined Metals Ltd
Botany Road
Northfleet
Gravesend
Kent
DA11 9BG
- 3.3. This BRM procedure is applicable to any foreseeable condition or event that is of a lesser nature to a Major Accident or Major Accident to the Environment.
- 3.4. It does not cover any off-site recovery after an incident.

4. Events that Could Cause a Major Accident or a Major Accident to the Environment

- 4.1. Flood due to a breach of the flood defences during a high tide, releasing wastes containing PbO to the Thames and/or Botany Marsh.
- 4.2. Flood due to the overtopping of the flood defences during a high tide, releasing wastes containing PbO to the Thames and/or Botany Marsh.
- 4.3. Flood due to a gate being left open in error on an adjacent site during a high tide, releasing wastes containing PbO to Botany Marsh.
- 4.4. Releasing wastes containing PbO with contaminated fire water to the Thames and/or Botany Marsh.
- 4.5. Releasing wastes containing PbO due to flooding caused by surface water or culvert back flow on a high tide to the River Thames.

Note: If the flood defences are breached due to either failure, overtopping or if a gate is left open, these events would result in BRM contacting the Kent Resilience Team to set in motion the external emergency plan. (See check sheet E6 in appendix 1)

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5. Events that Could Cause a Major Accident

- 5.1. Release of toxic cadmium/cadmium oxide fumes into the Isa Refinery building due to a loss of extraction.
- 5.2. Release of toxic sulphur dioxide gas due to a sulphur fire or loss of extraction in either the Isa Refinery or the S Kettle Refinery.

6. Responsibility

- 6.1. The General Manager will ensure that there are sufficient resources to obtain and maintain all required equipment and people to minimise the consequences to the health and safety of people and the environment in the event of an emergency involving a major or minor accident.
- 6.2. Only the Media Manager or Deputy is authorised to have any contact with the Media.
- 6.3. The HSEC Department will ensure:-
 - that an Emergency Response Plan is formulated and kept up to date;
 - that flow diagrams for both the Emergency Response Command Flow and Emergency Response Call Notification is provided and maintained;
 - that the local authority responsible for preparing the external (off site) emergency plan is liaised with and will work closely with them to dovetail both internal and external plans and the testing of said plans, at least every three years;
 - that regular internal “desktop” exercises and an annual internal realistic site test is carried out and that any learnings are implemented and the feedback is communicated to relevant parties. This applies to all Events that could cause a Major Accident or a Major Accident to the Environment (see sections 4 and 5 of this document);
 - that sufficient emergency alarms, systems and equipment are in place, tested and maintained to an applicable standard;
 - that there is suitable and sufficient emergency signage;
 - that the required personal protective equipment is available for all emergency scenarios;
 - that all area risk assessments are reviewed annually;
 - that emergency drills are carried out sufficiently enough to enable competency, consisting of emergency drills for fire and flood at the frequency of one of each at least once a year for each shift and the whole site;
 - that appropriate training is provided to all as required to maintain competency, this will include using the Emergency Response Guide and operation of critical equipment such as flood gates, penstock and Darcy valves;
 - that the Emergency Plan meets the requirements of the current COMAH Regulations Schedule 4;
 - that the BRM Emergency Response Guide for the mitigation and control of major accidents and major accidents to the environment is reviewed, fit for purpose and up to date and that there is an electronic copy is available on the intranet and 2 hard copies are available in Security, the stores, and 1 copy in the CX plant, ISA floor Office, Silver plant Office and HSEC Office.
 - Regular contact is made with the local Fire and Rescue team re onsite plan and familiarisation of site for local units.
- 6.4. The Site Main Controller or Deputy is responsible for:-

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- Taking overall responsibility for control of the incident from the Site Incident Controller.
- Confirming that the emergency services have been summoned.
- Ensuring that, if there is a flood which could cause a MATTE Event, the off-site Emergency Plan has been initiated.
- Ensuring that key personnel are mobilised.
- Ensuring that direct operational control is available for those parts of the establishment outside the areas directly affected.
- Reviewing and assessing developments to help predict the most likely development of the incident.
- Directing the shutting down of plants and evacuation of buildings, as appropriate, in consultation with the Site Incident Controller and key personnel.
- Ensuring that casualties are receiving adequate attention and, if appropriate, arranging for additional assistance. They should also ensure, in liaison with the police, that relatives are kept informed of missing and injured people.
- Establishing contact with agencies able to give prior information on impending changes in weather conditions.
- Contacting appropriate external agencies to provide advice on possible effects on areas outside the establishment.
- Ensuring that all personnel are accounted for.
- Controlling traffic movement within the Plant.
- Arranging for an ongoing record to be kept of the emergency and the responses undertaken to mitigate its effects, to provide evidence of the decisions made, the mitigatory action taken and to ensure that lessons are learned from the response to the emergency.
- Providing for the welfare needs of establishment personnel, for example the provision of food and drinks, relief and the means to keep relatives informed.
- Establishing, via the Media Manager, links with news media and issuing information and statements, as appropriate, in liaison with the Emergency Services.
- Ensuring that full consideration is given to the preservation of evidence.
- Controlling the rehabilitation of affected areas after the emergency has been successfully managed and there is no longer a threat.

6.5. The Site Incident Controller or Deputy must take charge if there is an incident and carry out tasks as detailed in the appropriate response sheet until the Site Main Controller takes over, these include:-

- Deputising for the Site Main Controller until they arrive on site and take over the role.
- Ensuring that the Emergency Services are alerted.
- Ensuring that the alarms are sounded.
- Directing others to shut down and evacuate other areas of the site that are currently, or are likely to be affected.
- Ensuring that appropriate key personnel are summoned.
- Controlling the rescue and fire-fighting operations until this can be passed to the Emergency Services.
- Working with the Emergency Services in the search for casualties; and the evacuation of non-essential workers to assembly areas.
- Giving advice and information, as requested, to the Emergency Services at the scene.

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- Briefing the Site Main Controller and keeping the on-site Emergency Control Centre informed of all significant developments.
- 6.6. Only the Media Manager can liaise with Glencore and the Media.
- 6.7. The Security Officer will carry out tasks as detailed in the appropriate response sheets. This will include contacting Seacon and CMP Thames in the event of a flood or a sulphur fire.
- 6.8. The HSEC Director or Deputy must inform relevant parties in the event of an incident, these include the Health and Safety Executive and the Environment Agency.
- 6.9. Employees and contractors are responsible for reporting and raising the alarm if an incident occurs.
- 6.10. Employees, contractors and visitors must evacuate the area and proceed to the main assembly point if there is a continuous sounding alarm.
- 6.11. Employees can respond to a fire, oil or chemical spill if it is safe to do so and they know what to do.

7. Procedure details

- 7.1. The BRM Emergency Response Guide for the mitigation and control of major accidents and major accidents to the environment sets out, via a schedule and action checklists, how to mitigate and control known incidents.
- 7.2. The site Emergency Control Centre is the Security area. If this is compromised the memory stick in security or ones lodged with members of the IT team off site can be used in other buildings depending on the location of the incident, 16 of the main contacts have company mobile phones that can be used.
- 7.3. The Site Incident Controller will carry out incident response as detailed in response sheets in Appendix 1.
- 7.4. The Site Main Controller or Deputy shall invoke the offsite emergency plan if there is an actual flood on site that could lead to a MATTE incident.
- 7.5. There will be flow diagrams for both the **Emergency Response Command** Flow and Emergency Response Call Notification. (See Appendix 3)
- 7.6. The HSEC Director will liaise with the local authorities, Kent County Council by contacting the Kent Resilience Team, who are responsible for the preparation of the offsite emergency response plan.
- 7.7. The HSEC Director will send to the Kent Resilience Team the onsite COMAH incident plan so that it can be dovetailed with the offsite Emergency Response Plan.
- 7.8. The HSEC Director will liaise with the Kent Resilience Team and arrange three yearly physical tests of the joint on and off site plans.
- 7.9. The HSEC Director will liaise with the Kent Resilience Team and update them if there are any material changes that would require a change to the offsite plan.
- 7.10. The HSEC Director will ensure that fire detection systems, fire alarm systems, firefighting equipment are suitable for foreseeable incidents on site and meet the requirements of The Regulatory Reform (Fire Safety) Order 2005. Fire detection systems are backed up by battery so they will still operate in the event of loss of power and will not go offline.

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- 7.11. All Managers shall review and update all fire risk assessments for the areas that they are accountable. The fire risk assessments are managed by SharePoint which automatically send reminders to the person responsible for the review.
- 7.12. The Maintenance Planners must ensure that emergency lighting, fire doors and fire hydrants are scheduled to be checked and that the checks are carried out. If the checks are not done for any reason they must report to this to the Maintenance Superintendent.
- 7.13. Managers, must ensure that all staff are trained in the correct response to any emergency incident, use of fire extinguishers and emergency response evacuations.
- 7.14. Managers, must ensure that all alarm tests and drills are carried out as planned. The Drill Programme is located in the Emergency Response area of the intranet - emergency response guide/drill programme. They must also ensure that the relevant records are completed: fire book, SHERS, work order.
- 7.15. Arrangements are to be made for the local Fire and Rescue services to visit site in order for them to update their on-site plan and to familiarise each watch with the site.
- 7.16. Recovery from an incident will be carried per the Emergency Recovery Procedure ([see appendix 4](#)).
- 7.17. In the event of an incident that affects areas off site, BRM will provide technical knowledge. There are currently no arrangements for providing assistance with mitigatory actions outside the establishment as there is no understanding of what these may be.

8. On Site Preventative and Mitigating Facilities

- 8.1. Bays and buildings containing PbO are constructed to withstand flooding and all openings are fitted with flood gates. ([See locations on drawing 2S in appendix 2](#))
- 8.2. Storage facilities for fire water consists of 2 lagoons with a joint capacity of 1360 m³, and a tank with 1200 m³ capacity which has 5% set aside for fire water. In the event that the lagoons and the tank are at full capacity there is an additional 1200m³ of storage capacity in the form of the site drainage system which can hold 150m³ and half of the site consists of kerbed hard standing which could contain 1000m³. ([See locations on drawing 2I in appendix 2](#))
- 8.3. The site comprises of mainly hard standing, the north end is completely surrounded by kerbing. The drainage system covers the whole site, there are small settling pits and oil interceptors incorporated into the drainage system. ([See drawing 2I in Appendix 2](#))
- 8.4. The outfall to the Thames is fitted with a Darcy / Balloon valve that will be closed as part of the emergency response therefore containing any fire water to the site. ([See location on drawing 2s in Appendix 2](#))
- 8.5. The draining system and the storage lagoons and tank are connected via pipes and pump to enable water to be move around site.
- 8.6. Outfalls are fitted with flaps to stop back flow when the tide is high.
- 8.7. There is a medical room and first aid rooms on site. There are also a number of first aid boxes located around site. ([See locations on drawing 2f and 2r](#))
- 8.8. Burns kits are provided in the Silver Plant and Isa Kettle Floor as is medical grade oxygen. ([See locations on drawing 2r in Appendix 2](#))

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- 8.9. There are 4 defibrillators located across site. [\(See locations on drawing 2r in Appendix 2\)](#)
- 8.10. There are 2 Fire hydrant systems on site. One, fed by potable water, covers the north end of the site, referred to as the secondary refinery. It comprises of 13 points, 6 of which are doubles. The minimum pressure recorded is 4.5 psi with a minimum flow rate of 600 lt/s. The second system is fed from a header tank which is continuously topped up from a well that contains approximately 300m³. This system covers the south of the site, known as the Isa Refinery. It comprises of 10 points, 7 of which are doubles. The minimum pressure measured is 3.4 psi with a minimum flow rate of 600 lt/s. The pond could be used as a fire water feed if required. [\(See locations on drawing 2g in Appendix 2\)](#)
- 8.11. Fire extinguishers suitable for the various types of fire that may occur in each area are located around site. ~~There are no foam extinguishers as they are not applicable to this site.~~
- 8.12. There are chemical and oil spill kits available, these contain absorbent materials, drain covers and plugging materials.
- 8.13. The normal PPE consists of toe protector boots, flame retardant overalls, integrated helmets which comprise of hard hat, class one eye protection and P3 filter.
- 8.14. In the event of a sulphur fire, masks fitted with the appropriate filter are provided together with fire hoses fitted with fine roses. [\(See locations on drawing 2f\)](#)

9. Records

- 9.1. SHERS including any actions.
- 9.2. Records of all maintenance and testing of the fire alarm system, fire hydrants, fire doors.
- 9.3. Fire Risk Assessments.
- 9.4. Emergency Response Guide Update Schedule.

10. Other related relevant supporting tools, systems, and references

- 10.1. COMAH Guidance L111.
- 10.2. Emergency Planning for Major Accidents Guidance HSG191
- 10.3. The Regulatory Reform (Fire Safety) Order 2005
- 10.4. The Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR).
- 10.5. The BRM Emergency Response Guide for the mitigation and control of major accidents and major accidents to the environment.
- 10.6. Emergency Response Media Manual.

11. Performance Measurements

- 11.1. The Emergency Response Plan and Procedure performance will be audited at least annually.

12. Definitions

- 12.1. Major Accident or Major Accident to the Environment:

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“major accident” means an occurrence such as a major emission, fire, or explosion resulting from uncontrolled developments in the course of the operation of any establishment to which these Regulations apply, and leading 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;

- 12.2. The Site Incident Controller is the Team Leader or Assistant Team Leader that is on shift at the time of the incident or the oncoming Team Leader or Assistant Team Leader that the incident is handed over too.

The Site Incident Controller will manage the incident until the Site Main Controller takes over.



The Site Main Controller takes over responsibility for managing the incident and recovery.

- 12.3. The Site Main Controller is the delegated Manager with sufficient site knowledge of the incident to be able to manage the incident effectively.
- 12.4. To ensure clarity to the user, it may be necessary to define the meaning of ‘words’ within the context of this plan / procedure; for example, the words ‘must’ or ‘will’ within the procedure are mandatory.

Note: Only the electronic version of this plan / procedure located on the BRM Intranet is the controlled document. Any paper copies of this procedure are not controlled documents and therefore are not considered valid documents.

Appendix 1

Check sheets:

Emergency Log Sheet

B1 – Contact Numbers

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Call Notifications Flow Chart

E1 – Oil, Chemical, Lead oxide spill response

E5 – Sulphur Fire

E6 – Flood

E7 – Baghouse Fire

E8 – Cadmium Incident

Recovery List

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Appendix 2

General Site Plans and Isolation Points - Drawings number:

2f – Emergency Routes, Command Centre, Medical / First Aid Rooms

2g – Fire Hydrant System

2l – Drainage system

2r – First Aid, Safety Shower, Medical oxygen, Defibrillator Locations

2s – Storage of PbO, Flood Gates and Valve Locations

2t – Flammable and Toxic substances locations

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Appendix 3

Flow Diagrams:

Emergency Response Command Flow Chart

Emergency Response Call Notification Flow Chart

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Appendix 4

Emergency Recovery Procedure

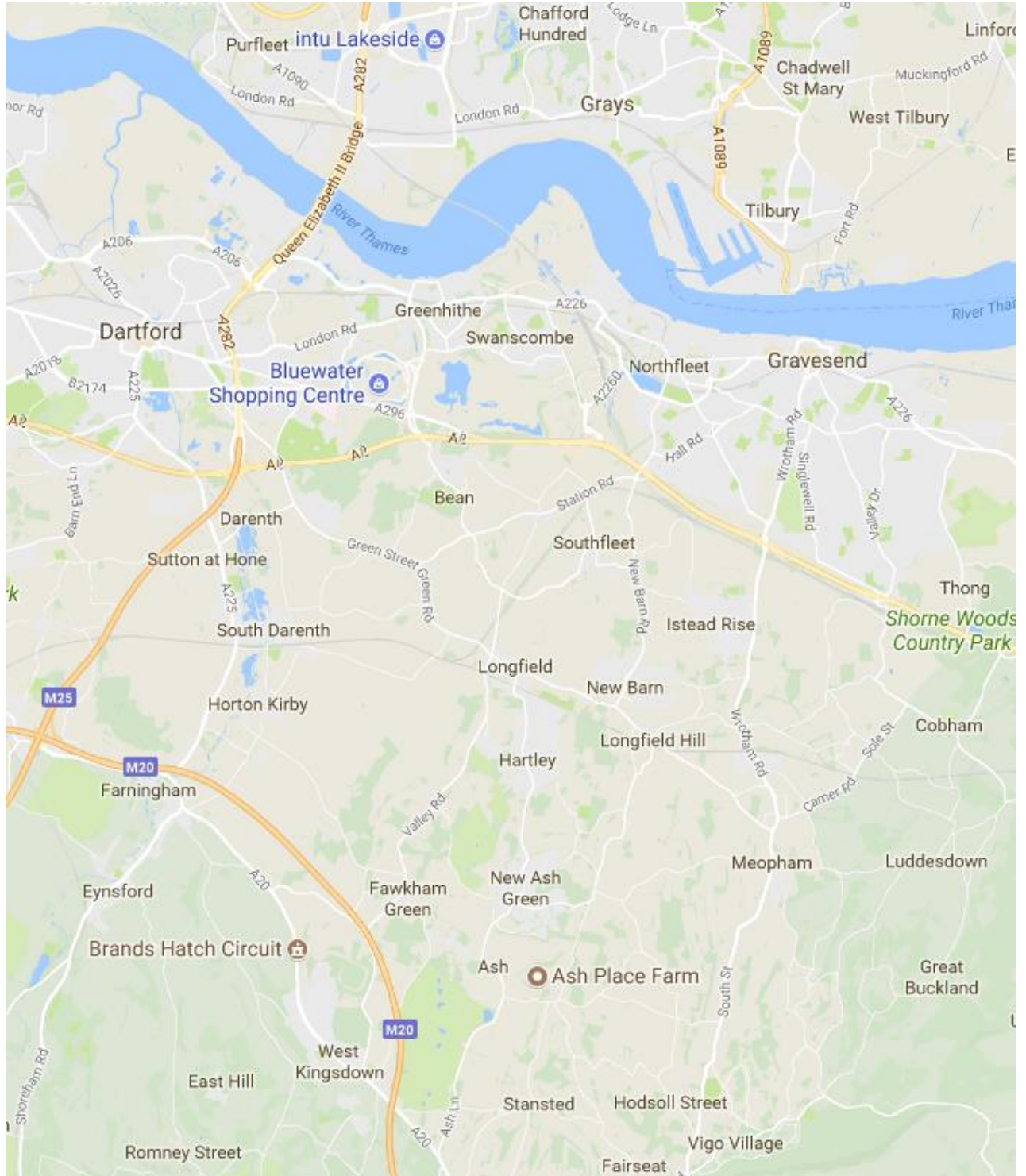
Emergency Recovery Flow Chart

Prepared by (Originator): Alan Booty Date: 16.10.2017	Issue No: 4 Date: 04.05.2023	TEMPLATE: Issue No: 4
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Appendix 5

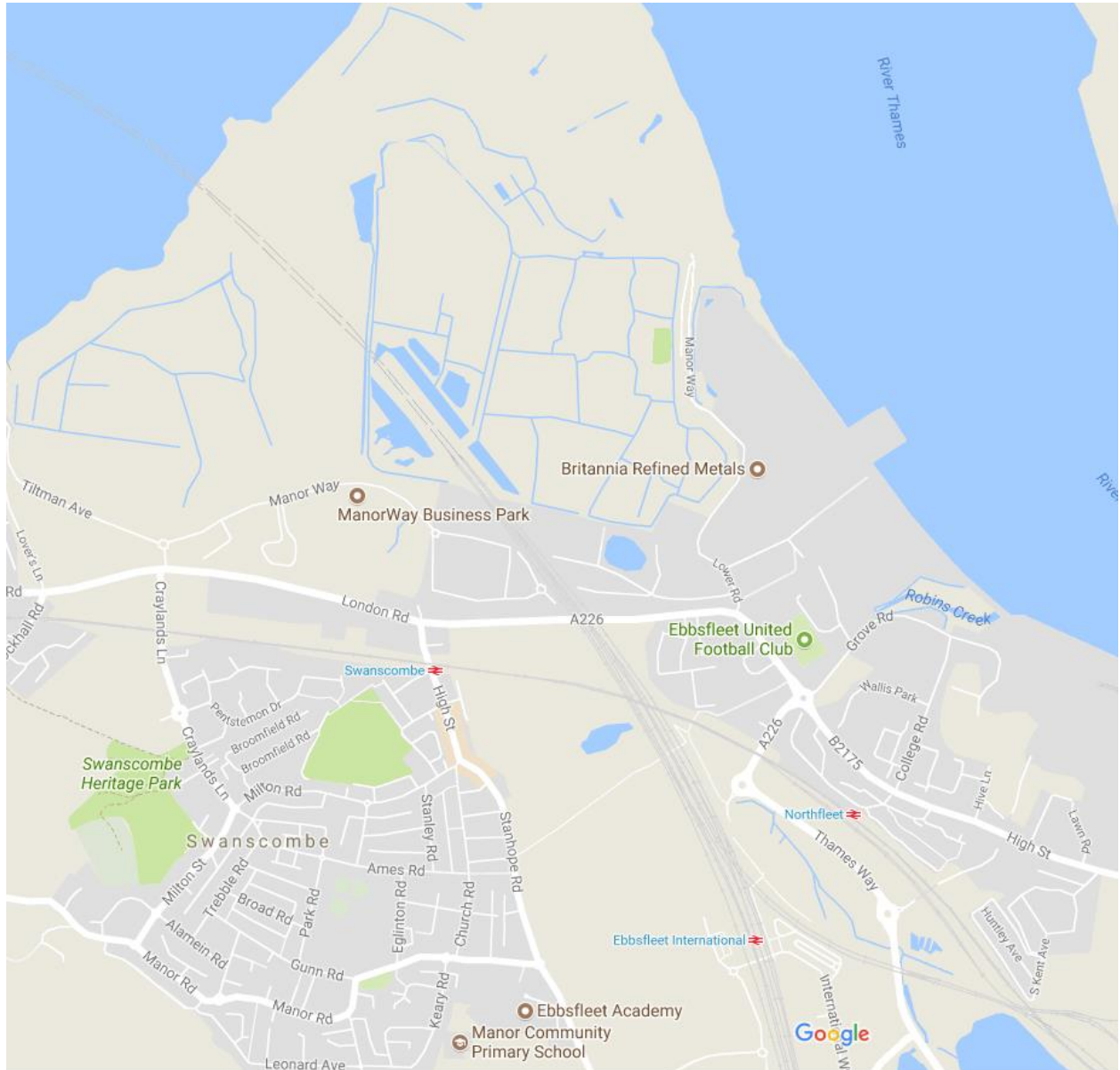
Pictures:



Area Map

Prepared by (Originator): Alan Booty Date: 16.10.2017 Approved By: The Management Team	Issue No: 4 Date: 04.05.2023 Next Review due: 04.05.2024	TEMPLATE: Issue No: 4
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Local Area Map

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Arial View of Britannia Refined Metals Ltd

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Main Entrance manned 24/7



Unmanned Secondary Entrance

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Example of a Flood gate

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