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SUPPORTING INFORMATION – SECTION 9

9.1 Accidents

The site is not a top or lower tier COMAH.

9.2 ACCIDENT MANAGEMENT PLAN

9.2.1 Identifying the hazards

A cross-functional team of process staff undertakes, on at least a bi-annual basis, a review of the risks associated with the operations at the installation. This formal review process includes a review of the EMS Environmental Aspects and Impacts Register.

l'Anson Bros Ltd have a system to manage accidents and abnormal operating situations, both major and minor. The site emergency plan describes the actions to take in order to minimise the impact of major incidents and also identifies the preventative and control measures in place on site. (See section 7)

9.2.2 Assessing the risks

The procedure for the assessment of environmental risks forms a key part of the EMS. The site operates, on an ongoing basis, a preventative accident regime which considers a wide range of potential accident hazard scenarios resulting from abnormal operating conditions. The methodology for the risk assessment carried out by * includes an assessment, for each potential environmental scenario, of:

- Likelihood – the probability of the event taking place; and
- Severity – the potential environmental impact as a result of the event occurring.

As part of the environmental risk assessment methodology used at the site, a ranking system has been developed that attempts to objectively quantify each of these parameters. Overall risk for a given incident scenario is calculated as follows:

Risk Rating = likelihood of occurrence x severity of consequence

The estimated overall risks are assessed to determine the appropriate measures to be undertaken, such as design and development of operating procedures used to reduce the risk of accidents and minimisation of any resulting environmental impact.

l'Anson Bros Ltd has undertaken a risk assessment on each of these scenarios in order to develop an improvement programme focused on the scenarios which pose the greatest risk, as presented below.

Tables 9.1, 9.2 and 9.3 describe the ranking systems for the likelihood, severity and overall risk, respectively (which are based on the Environment Agency's guidance for assessing the risks associated with environmental incidents).

Table 9.1 Likelihood scoring system

Score	Category	Range
1	Extremely unlikely	Incident occurs less than once in a million years
2	Very unlikely	Incident occurs between once per million and once every 10,000 years
3	Unlikely	Incident occurs between once per 10,000 years and once every 100 years
4	Somewhat unlikely	Incident occurs between once per hundred years and once every 10 years
5	Fairly probable	Incident occurs between once per 10 years and once per year
6	Probable	Incident occurs at least once per year

Table 9.2 Severity scoring system

Score	Category	Definition
1	Minor	nuisance on site only (no off-site effects) no outside complaint
2	Noticeable	noticeable nuisance off-site e.g. discernible odours minor breach of permitted emission limits, but no environmental harm one or two complaints from the public
3	Significant	severe and sustained nuisance, e.g. strong offensive odours or noise disturbance major breach of Permitted emissions limits with possibility of prosecution numerous public complaints
4	Severe	hospital treatment required public warning and off-site emergency plan invoked hazardous substance releases into water course with ½ mile effect
5	Major	evacuation of local populace temporary disabling and hospitalisation serious toxic effect on beneficial or protected species widespread but not persistent damage to land significant fish kill over 5-mile range
6	Catastrophic	major airborne release with serious offsite effects site shutdown serious contamination of groundwater or watercourse with extensive loss of aquatic life

Table 9.3. Risk magnitude scoring system

Risk	Overall score	Acceptability
Low	12 or less	Acceptable
Medium	13 to 24	Acceptable if risk is reduced as far as is reasonably practical
High	25 to 36	Unacceptable – requires action to reduce the risk rating

The subsequent improvement programme emerging from this analysis is focused on addressing any High risks as a priority.

9.3 TECHNIQUES TO REDUCE RISKS

Table 9.4 presents the principal accidents scenarios for the installation that have the potential to cause significant environmental harm, together with the measures that the site implements to minimise the risks and to control the consequences.

As part of the ongoing development of the EMS, l'Anson Bros Ltd updates on at least a bi-annual basis, the Aspects and Impacts Register. l'Anson Bros Ltd commits, as part of the

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ongoing programme, to undertaking a review of Table 9.4 during this review of the EMS Aspects and Impacts Register. This review will include a review of the BAT guidance for identifying hazards and identifying techniques necessary to reduce the risks and take into account any significant changes to the operations/process conducted on site.

9.4 OTHER TECHNIQUES

Complementing the preventative measures identified in the management techniques section (see Table 2.3.1) the following general measures are undertaken to minimise the risk and effects of accidents:

- As part of the EMS, there are procedures in place to record all accidents (informing the Regulator in the event of * abnormal emissions) and to mitigate their consequences. These include procedures to:
 - manage and control raw materials and wastes;
 - control operations including start up;
 - address non-conformances (including emergencies) and implement corrective or preventative actions; and
 - control and respond to leaks, spills and emergencies.
- The site Health and Safety Policy addresses:
 - Accident reporting;
 - Audits including environmental elements; and
 - Fire prevention and control and evacuation procedures.
- Specialised training needs are reviewed and identified on an annual basis which includes selected personnel being trained in emergency preparedness and response. This covers incident response techniques, including chemical and liquid spill containment, fire fighting, control of releases to air and all activities related to the significant environmental aspects identified in the site EMS;
- Routine safety inspections are undertaken to ensure that equipment is suitable for use;
- A preventative maintenance programme is also implemented at the installation to minimise the risk of unplanned stoppages and potentially serious incidents; and
- Internal audits are undertaken of all emergency and spill procedures.

9.5 SAFETY

Safe working practices are ensured by adherence to company procedures and systems. Pertinent features of these are summarised below:

- **Hazardous Materials** – All materials used on site are assessed and controlled under the Control of Substance Hazardous to Health (COSHH) Regulations. As presented in Section 2.3 of this application, I'Anson Bros Ltd maintains an up-to-date inventory of substances present on site which could have environmental consequences if they escape. Procedures are in place for checking raw materials and wastes to ensure

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compatibility with other substances with which they may accidentally come into contact.

- **Operators** – The site has a stable workforce with low turnover of personnel. Training, which includes recognition and control of potential environmental incidents, is mainly task related and is conducted and supervised by experienced senior staff.
- **Process Control** – Process equipment is designed and operated to ensure that process parameters are controlled within acceptable limits. There are safe shutdown procedures for key processes.
- **Permits-to-Work** – The site operates a comprehensive pre-authorisation procedure for work to be performed on site by third parties, which takes into account the nature of the task and its location.
- **Communication** – Procedures exist to avoid incidents occurring as a result of poor communication among operations staff during shift changes, maintenance or other engineering work that may be being performed.
- **Incidents** – All abnormal occurrences resulting in injury, loss of material, damage to buildings or equipment and 'near misses' are subject to a reporting and investigating procedure that is designed to establish the basic cause and to prevent future recurrence.
- **Process Modifications** – Proposed changes to plant and processes are assessed for potential health, safety and environmental impacts by a Management of Change Procedure.
- **Site Security** – The site maintains a high level of security to reduce the risk of vandalism, such as perimeter fencing.

Table 9.4: Accident assessment for the installation.

Accident or abnormal release scenario	Likelihood of occurrence	Consequences of occurrence	Severity of occurrence	Risk Rating	Actions taken or proposed to minimise the chances of it happening	Actions planned if the event does occur
Generic - Site Wide						
Failure of hard standing resulting in ground contamination	4	Potential ground contamination with organic oils, fuel and lubricating oils, molasses, liquid and soluble raw materials.	1	L	Inspection and maintenance of hard standing areas.	Invoke spill containment procedures. Clean up according to COSHH data sheets and appropriate disposal arrangements. Resurface as necessary.
Vehicle collision with product stores	4	Increased waste. Release of material into drainage system. Fugitive emissions into atmosphere.	2	L	All liquid storage and vessels are guarded and banded. Pallets of dry materials are stored in designated areas.	Invoke spill containment procedures. Clean up according to COSHH data sheets and appropriate disposal arrangements.

Accident or abnormal release scenario	Likelihood of occurrence	Consequences of occurrence	Severity of occurrence	Risk Rating	Actions taken or proposed to minimise the chances of it happening	Actions planned if the event does occur
Major fire	3	Loss of containment of stored materials. Releases to atmosphere. Increase in waste generated. Noise and odour releases.	4	L	Fire alarm systems installed, maintained and tested according to Fire and Rescue service recommendations. Emergency procedures are in place and reviewed. Permit to work system to control hot work etc. Designated smoking areas. Preventative maintenance on all electrical systems. Fire fighting training. Provision of manual extinguishers.	Invoke emergency procedures and business recovery plan.
Minor fire	4	Minor release to atmosphere. Small amount of waste generated. Small release of odour.	1	L	Fire alarm systems installed, maintained and tested according to Fire and Rescue service recommendations. Emergency procedures are in place and reviewed. Permit to work system to control hot work etc. Designated smoking areas. Preventative maintenance on all electrical systems. Fire fighting training. Provision of manual extinguishers.	Invoke emergency procedures and business recovery plan.

Accident or abnormal release scenario	Likelihood of occurrence	Consequences of occurrence	Severity of occurrence	Risk Rating	Actions taken or proposed to minimise the chances of it happening	Actions planned if the event does occur
Failure to contain firewater	3	Contaminated waters from fire control entering surface water systems / water course / sewer.	3	L	Fire prevention measures as above.	Invoke emergency procedures and business recovery plan. Inform Environment Agency (EA)
Vandalism	4	Range of damage to equipment e.g. bulk storage and pipe work with consequent release to air / ground / drains / sewer.	2	L	Insurers recommended site security measures are in place including perimeter fence. with access gates monitored by CCTV. Regular inspection of perimeter fences.	Address any specific equipment damage. Reinstate and review security measures.
Flood	2	Stopped production resulting in increased waste.	1	L	Site lies outside flood plain.	Inform EA. Take appropriate corrective and preventative actions to minimise environmental impact (such as sand bagging).
Excessive noise generation associated with vehicular movements	5	Noise complaints.	2	L	Vehicle driver awareness programme	Review and reinforce procedures.
Fuel / oil spills from vehicles	5	Uncontrolled release to drainage system / water course/ sewer.	2	L	Supervised off loading.	Invoke spill containment procedures. Clean up according to COSHH data sheets and appropriate disposal arrangements.

Accident or abnormal release scenario	Likelihood of occurrence	Consequences of occurrence	Severity of occurrence	Risk Rating	Actions taken or proposed to minimise the chances of it happening	Actions planned if the event does occur
Accidental activation of alarms/ sirens	5	Noise complaints.	2	L	Preventative maintenance programmes.	Stop noise source and repair and review.
Failure of mains water supply	4	Uncontrolled release of contaminated water to drainage system/water course/ sewer.	2	L	Guarding of exposed pipework.	Isolate mains supply to site. Inform EA and Water Authority.
Electrostatic explosion	4	Range of damage to equipment e.g. bulk storage and pipe work with consequent release to air / ground / drains / sewer.	3	L	Dust explosion relief panels are fitted to appropriate items of equipment (such as elevators & grinders) etc.	Depending upon the severity of incident (i.e. whether or not there is an environmental impact) either: a) address specific incident; or b) invoke emergency procedures and business recovery plan. Inform EA.

Raw Material Receipt and Storage						
Accident or abnormal release scenario	Likelihood of occurrence	Consequences of occurrence	Severity of occurrence	Risk Rating	Actions taken or proposed to minimise the chances of it happening	Actions planned if the event does occur
Spillage of bulk solid raw materials (e.g. cereals and bulk tipped material) during material delivery	6	Uncontrolled release of particulate matter.	1	L	Supervised off loading of materials.	Stop discharge and clean up spillage.
Spillage of bulk liquid raw materials (e.g. molasses and fats) during material delivery	6	Risk of release to drainage system / ground / water course / sewer.	2	L	Supervised off loading of materials. Connection points bundled.	Stop discharge and invoke spill containment procedures. Portable bunds and spill kits are located close to potential areas of spills. Clean up according to COSHH data sheets and appropriate disposal arrangements.
Overfilling of solid raw material (e.g. cereals and bulk tipped material) bulk storage silos.	6	Uncontrolled release of particulate matter.	1	L	Supervised off loading of materials. High level alarms.	Stop discharge and clean up spillage.

Accident or abnormal release scenario	Likelihood of occurrence	Consequences of occurrence	Severity of occurrence	Risk Rating	Actions taken or proposed to minimise the chances of it happening	Actions planned if the event does occur
Tipping of incorrect solid raw materials (e.g. cereals) into bulk storage bin.	5	Increased waste.	1	L	Intake procedures and controls.	Stop discharge. Re-use material as appropriate to minimise waste generation. Appropriate controlled disposal of waste.
Unloading of incorrect liquid raw materials (e.g. molasses and fats) into bulk storage tank.	4	Increased waste.	1	L	Intake procedures and controls.	Stop discharge. Re-use material as appropriate to minimise waste generation. Appropriate controlled disposal of waste.
Overfilling of bulk storage tanks (e.g. molasses and fats) during delivery	5	Uncontrolled release of liquids into containment bund.	1	L	Supervised off loading of materials. High level alarms. Bunded tanks.	Stop discharge. Appropriate disposal of waste.
Bund failure (following tank failure)	4	Liquid spill onto hard standing / drains /brook / sewer.	3	L	Inspection and maintenance of bund. Regular controlled disposal of contents.	Invoke spill containment procedures. Portable bunds and spill kits are located close to potential areas of spill. Clean up according to COSHH data sheets and appropriate disposal arrangements. Inform SEPA. Repair bund.

Accident or abnormal release scenario	Likelihood of occurrence	Consequences of occurrence	Severity of occurrence	Risk Rating	Actions taken or proposed to minimise the chances of it happening	Actions planned if the event does occur
Catastrophic loss of bulk liquids from bulk storage.	5	Uncontrolled release of liquids into containment bund.	1	L	Bunded tanks. Preventative maintenance programme and inspection.	Stop discharge. Appropriate disposal of waste.
Spillage of small inclusion packed raw materials (e.g. vitamins) during delivery, unloading or storage.	6	Fugitive release of particulates.	1	L	Designated storage to minimise damage and spillage. Only trained forklift truck drivers to offload and move materials. Palletized and stretch wrapped deliveries.	Recover spillage and repackage. Use appropriate PPE according to COSHH data sheets. Controlled disposal of any residual waste as appropriate.

Processing						
Accident or abnormal release scenario	Likelihood of occurrence	Consequences of occurrence	Severity of occurrence	Risk Rating	Actions taken or proposed to minimise the chances of it happening	Actions planned if the event does occur
Incorrect addition of small inclusion materials / micro ingredients (such as medicinal ingredients or biocide).	6	Remix generation.	1	L	Process Control of additives. All staff trained in procedures.	Re-use of remix.
Incorrect addition of large inclusion materials (such as cereals).	6	Remix generation.	1	L	Process Control of blending. Weighers calibrated. All staff trained in blending procedures.	Re-use of remix.
Failure of conveyance systems	6	Remix generation. Potential for small amount of waste.	1	L	Preventative maintenance programme. Level controls and overfeed detection.	Re-use of remix. Controlled disposal of waste.
Failure of automated control systems (loss of process control).	5	Re-mix generation.	1	L	Systems fail safe. Maintenance and backups. Supplier support.	Over-ride to recover intact batches. Re-use of remix.

Accident or abnormal release scenario	Likelihood of occurrence	Consequences of occurrence	Severity of occurrence	Risk Rating	Actions taken or proposed to minimise the chances of it happening	Actions planned if the event does occur
Excess noise generation from processing operations	5	Complaints	2	L	Noise attenuation by plant design. Preventative maintenance procedures. Site staff appropriately trained.	Identify source of noise. In the event of a fault take corrective action. Review as appropriate.
Excessive odour generation from processing operations	5	Complaints	2	L	Preventative maintenance programme and cleaning regime.	Identify source of odour. In the event of a fault take corrective action. Review as appropriate.
Failure of preventative maintenance system	5	Loss of production. Increased remix and waste generation.	1	L	Subject to audit.	Review and modify maintenance programme. Recover sound product to remix. Controlled disposal of residual waste.
Failure of abatement systems – bag filters	5	Uncontrolled release of particulate matter.	2	L	Preventative maintenance programme according to COSHH regulations.	Clean and make repairs as necessary (such as replacement of burst bags)
Failure of abatement systems – cyclones	6	Uncontrolled release of particulate matter.	2	L	Preventative maintenance programme and cleaning regime.	Clean and make repairs as necessary.

Packaging and Despatch						
Accident or abnormal release scenario	Likelihood of occurrence	Consequences of occurrence	Severity of occurrence	Risk Rating	Actions taken or proposed to minimise the chances of it happening	Actions planned if the event does occur
Spillage of product during vehicle loading.	6	Fugitive release of particulate matter to atmosphere. Increased remix and waste.	1	L	Driver training. Effective vehicle scheduling.	Stop loading. Recover sound product to remix. Controlled disposal of residual waste.
Damage of product in storage (such as infestation leading to contamination / spoilage)	6	Increased remix and waste.	1	L	Stock rotation procedures. Hygiene and pest control procedures.	Recover sound product to remix. Controlled disposal of residual waste.
Loading of incorrect materials into bulk vehicle.	6	Increased remix.	1	L	Driver training. Effective vehicle scheduling and operating procedures.	Stop loading. Recover sound product to remix.

Utilities						
Accident or abnormal release scenario	Likelihood of occurrence	Consequences of occurrence	Severity of occurrence	Risk Rating	Actions taken or proposed to minimise the chances of it happening	Actions planned if the event does occur
Failure of preventative maintenance system	5	Loss of production. Increased remix and waste generation.	1		Subject to audit.	Review and modify maintenance programme. Recover sound product to remix. Controlled disposal of residual waste.
Power failure leading to loss of product	6	Loss of production. Increased remix and waste generation.	1	L	High voltage maintenance contracts. On site preventative maintenance programme.	Review and modify maintenance programme. Recover sound product to remix. Controlled disposal of residual waste.
Failure of interceptor	4	Uncontrolled release to drainage system / beck / sewer.	3	L	Regular cleaning, emptying and inspection programme.	Inform EA. Invoke emergency action plan and effect repair.
Failure of sub surface pipe work	4	Ground contamination.	1	L	Inspection and maintenance of hard standing areas and drainage systems. Monitoring water consumption.	Inform EA. Invoke emergency action plan and effect repair.