



LORIS H HASSALL PTY LTD TRADING AS FORBES BRINECURE

POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN

VERSION: 3.1

DATE: 1-1-2019

1.0 PURPOSE

1.1 To identify all relevant information required to effectively respond to and manage a pollution incident on site.

1.2 Comply with requirements to maintain a Pollution Incident Response Management Plan (PIRMP) under Part 5.7A of the *Protection of the Environment Operations Act 1997* and requirements introduced by the *Protection of the Environment Legislation Amendment Act 2011 Act*.

2.0 SCOPE

2.1 This Loris H Hassall (LHH) Forbes Brinecure PIRMP is applicable to all workers, managers, contractors and visitors to site.

3.0 PROCEDURE

3.1 This *PIRMP* is used to support planning and maintenance of effective and safe responses to incidents. This *PIRMP* considers site-specific requirements.

3.2 The *PIRMP* will be maintained in conjunction with an ***Emergency Response to Pollution Incident Plan Flow Chart*** (See Section 6.4), with the LHH ***Emergency Evacuation Response Procedure (Revision 0)***, with applicable sections of the LHH ***Environmental Management Plan (EMP)*** and EPA NSW Licence requirements (Licence # 12765).

3.3 The plan will be tested and reviewed routinely, at least once every 12 months. Testing and review will cover all components of the plan, including effectiveness of training. Records of testing, revision and updates will be dated and details of staff who performed the testing, revision and updates will be recorded.

3.4 Where a pollution incident occurs, the plan will be tested and reviewed within one month of the incident occurring. All records of updates will be maintained.

3.5 Pollution Incidents covered by this plan include:

1. Fire & Explosion (from any source)
2. Hazardous material spill/toxic emissions
3. 'Run of operations' emissions
4. Transporter error/issue
5. Natural events, such as flood, tornado
6. Issues developing

4.0 WHAT IS A POLLUTION INCIDENT?

4.1. *The POEO Act 1997* defines a pollution incident as: "an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of noise".

4.2 A licensee is required to notify the relevant regulatory authorities of a pollution incident if there is a risk of 'material harm to the environment', which is defined in section 147 of the *POEO Act* as:

- (a) Harm to the environment is material if: It involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or It results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations),
- (b) Loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.



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5.0 NAME OF PERSON RESPONSIBLE FOR APPROVING THE PLAN

Site Manager

6.0 SITE LOCATION

LORIS H HASSALL PTY LTD trading as Forbes Brinecure.

LOT 812 Newell Highway

Forbes NSW 2871

The facility operates in an agricultural and industrial locality known as Daroobalgie.

7.0 SITE MAPS/ AERIAL IMAGES (Attached in Appendices)

7.1 Site overview showing factory and nearby receptors

7.2 *Site Evacuation Plan* and location of fire extinguishers

7.3 Chemical stores

7.4 Emergency Contacts

7.4 *Emergency Response to Pollution Incident Plan* flow chart

8.0 DESCRIPTION OF SURROUNDING AREA

8.1. Facility

LHH is licenced to undertake Livestock Processing Activities (tannery or fellmongery)) processing >10,000 tonnes annually.

Operations occur at Daroobalgie, 8km north of Forbes, pop. 9000, in Central West NSW, approximately 300 kms north west of Sydney. The LGA is Forbes Shire Council.

The factory facility can be described as follows:

1. Office block – administration and management, lunch room, showers and toilets
2. Factory – 4 preserver mixers, 3 fleshing machines, 3 tanning drums, 4 brine raceways, production chain, salt bunkers, skin grading, hide storage rooms, container loading dock
3. Kangaroo skin storage shed
4. Chiller – green hide/skin receivals, storage of part-preserved hides (Short Term Cured), ice.
5. Chemical storage sheds – storage of process chemicals
6. Laboratory (including bespoke chemical storage), mezzanine
7. Wastewater plant – preparation of wastewater for effluent irrigation or evaporation dams.
8. Brine and pickle storage tanks for recycling production liquors
9. Maintenance workshop – daily preventative maintenance operations
10. Maintenance shed including pallet making
11. Storage containers for machine spares for the factory
12. Agricultural chemical store
13. Five lined evaporation dams
14. Two covered evaporation slabs for brine liquor.
15. Dissolved Air Flotation (DAF) System
16. Primary Filtration Plant



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8.2. Environmental Receptors

Processing occurs on 6ha of industrial land at Daroobalgie. A further 116ha (Lots 1 and 2 of DP 573421) of agricultural land, zoned General Industrial in *Forbes Shire Council (FSC) Local Environmental Plan*, completes the site.

The factory is located adjacent the Newell Highway, in the north western corner of the site.

Five residences linked to an historical abattoir are located as close as 150m to factory. Seven further residences make up the village of Daroobalgie, all within 850m of the factory. These residences are west of the factory.

Five hobby farms are located within 1.5kms of the factory. They are west and south.

Two residences on broadacre farms are located 1.5 and 2 kms East Sou East and South East respectively.

Nine industrial sites, mainly related to agriculture, have established along the northern boundary since 2000. The closest is 580m from the factory and 400m from the evaporation dams.

Central West Livestock Exchange (CWLX) is located 2300m north east of the nearest evaporation dam.

Road and Maritime's heavy vehicle inspection station is located on Newell Hwy 750m north east.

Three local waterways pass through the site. Necessity to fully contain the effluent irrigation farm has led to some variation to the natural path of one stream, however stormwater delivers to neighbours at historical points

8.3. Topography, runoff and groundwater.

Landform elements consist of melon holes/gilgai over 40% of the area, waterways over 20% and gently sloping land (40%) in the north western corner of site. The factory is located on the latter. This land slopes into the interior of the site. The whole site slopes gently to the south east.

Deranged drainage associated with gilgais ensures no overland flows run to neighbours along the southern boundary. Two waterways exit in this direction representing 5% of the boundary length. However, with one waterway surrounded by gilgais and the second waterway 40% surrounded by gilgais, run off from site to these waterways is minimal. Greater risk comes from run-on stormwater from higher ground north & west of site.

The effluent irrigation site was chosen for greatest efficiency and to avoid the negative drainage impacts of gilgais. However, it is within an historical drainage line. Consequently, it is fully impounded to contain effluent pollutants.

The land (10% of area) furthest from Newell Hwy is drained by a separate waterway with little association with the remainder of the property.

Anecdotally, water tables are not 'high' (piezo bores sunk to 5m depths are dry). Sandy beds, approximately 11kms south east of site are used for industrial and domestic purposes.

8.4. Climate

Wind statistics from Forbes aerodrome are typical of the site. They show little difference in 9.00am wind direction between summer and winter. Greater variation is seen during the day. Dominant 3.00pm wind patterns have switched 135° to the morning direction.

Summer 9.00 am wind strengths show stronger winds from the north which aids odour dissipation from the factory. Early morning east and nor-east breezes may pose an odour risk to residences in Daroobalgie. Afternoon winds (if they blow) are strong from the south west which may carry odour from evaporation dams and drying tunnels towards the saleyards & some businesses in the industrial area. This is the greatest odour management challenge.

Winter winds show little difference to summer in both strength & direction. Cooler air temperatures keep odours closer to ground and residences in Daroobalgie are possible receptors of odour from the hide storage room. Controls are in place to manage these effects.



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A morning temperature inversion in the shallow valley that houses LHH Brinecure, CWLX livestock exchange and FSC licenced waste facility is typical of winter weather. A district-wide background odour results.

Annual rainfall is 499mm with no seasonal maximum. This rain may fall in heavy storms more likely to occur in late spring and autumn. Maintenance of soil surfaces in catchments upstream of site can create challenges for managing stormwater running onto site

Temperatures are warm forming 4 distinct seasons.

8.5. Vegetation

In the past, 98% of the site has been cleared of trees & understorey, by ring-barking and overgrazing. All natural understorey plants have been removed with nil understorey re-generation. < 100 mature grey box (Euc. Microcarpa) remain. About 15% of the site consists of grey box regeneration, dating from 1950s and 1970's. Gilgai country has few mature trees. Planning to better utilize the irrigation block will likely see removal of several trees and their replacement with a native tree planting project. Trees from previous planting programs exist in several locations.

Groundcover consists almost entirely of exotic species, many locally regarded as weeds.

8.6. Land Use

An industrial factory and associated storage sheds and infrastructure occupy approximately 6ha. Evaporation dams occupy about 2 ha. The remaining land is used for agriculture. Approximately 15ha is under irrigation by process effluent. Production from that farm supports the cattle breeding operation that runs over the remainder of the site.

The factory works with production line methods employing over 40 staff.

9.0 OVERVIEW OF ACTIVITIES ON SITE

- 9.1. **Cattle hides** are the basis of most operations. Hides are obtained from abattoirs in NSW and QLD (rarely S.A) and are processed by 'Brine Curing' to produce a raw material for tanneries overseas.
- 9.2. A small proportion, (hides selected on quality), are segregated and iced, treated with a bactericide and transported to Geelong Leather.
- 9.3. Fresh, chilled (rarely, salted) hides from abattoirs arrive on site within 24-48 hours of killing. They are transported by B-double tippers which are watertight but open to weather. (Retractable tarps).
- 9.4. The hides are immediately placed into 'raceways' with brine (98% saline) and circulated constantly for 18-24hrs. Salted hides are rehydrated in the same manner.
- 9.5. After brining, hides are removed by mechanical claw and placed into mesh cages for draining. Brine runoff is recycled.
- 9.6. After draining, the hides are trimmed and graded and packed onto wooden pallets according to weight ranges and grade. Pallets are made on site with timber treated for export.
- 9.7. Hide storage on site may be as short as one hour; on average hides are moving off site in shipping containers within one month.
- 9.8. Pickling **kangaroo skins** is the secondary activity on site. 'Green' skins are received chilled (rarely, salted) from mainly pet food abattoirs and are stored in a cool room until processing.
- 9.9. Red kangaroo skins may be segregated for special orders.
- 9.10. Skins are placed into rotating drums with water and chemicals to remove fur. Rotation lasts up to 24 hours. Water may need to be heated. (Propane gas heaters). Chemicals used are listed in Section 14.0.



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- 9.11 Skins are removed from the drums and 'fleshed' mechanically. Fleshing involves removing fat and unwanted trimmings.
- 9.12 Skins are returned to rotating drums for procedures of 'washing', 'de-liming' and 'pickling'. Skins pass through several mixes (drum filled and emptied several times with different diluted chemicals) each aimed at lowering the alkalinity of the skins. This procedure takes 9-10 hours. Chemicals used are listed in 14.0
- 9.13. Skins are removed from drums to grading area where they are graded, packed, wrapped and weighed. They may be in dry storage between 1 and 6 months as orders are accumulated. Export orders are containerised. Domestic orders leave on pallets or Intermediate Bulk Containers for wet skins.
- 9.14. Wastewater management is a substantial site activity. Brine is treated separately to effluent from kangaroo skin processing, due to saturated levels of salt. Both processes attempt to recycle as much fluid as possible.
- 9.15 A small self-replacing cattle herd is run on dryland areas using production from the irrigation area as supplementary feed. During 2019 and in following years cattle will be re-introduced to irrigated pastures. Normal run of farming chemicals are used such as pesticides and fertilizers. Storage is on an 'as needed' basis, with rarely more than 40 litres (all chemicals) stored on site.

10.0 DESCRIPTION AND LIKELIHOOD OF INCIDENTS

This section will follow a risk management format of **identifying potential incidents** and indicating **a hierarchy of pre-emptive controls** by;

1. elimination,
2. substitution,
3. isolation,
4. engineering,
5. administration and
6. PPE

10.1 Incidents involving fire and explosion.

Fire may be foreseeable at office, laboratory, rubbish bins, gas bottles, farm, mechanical workshop, re-fuelling points, storage sheds, general yard and roadways, any vehicle (owned or visitor), in winter near any heater and in trucks and vehicles belonging to contractors & transport operators. With the factory being a constantly wet environment, dust accumulation is low.

Explosions may occur at mezzanine/laboratory, rotating drums, mechanical workshop, LPG gas bottles. In the first two incidences, an explosion may result from incorrect mixing of chemicals and would be localised due to small amounts of chemical used. In the workshop, explosion would be localised and could be caused by several ignition points. At LPG facilities, a fire/explosion would ignite from an uncontrolled release from a cylinder or pipe line.

Local bushfire is foreseeable. Ember attack on factory and buildings ahead of a fire front is foreseeable.

Controls consist of;

- i. Chemical storage planned and monitored to separate chemicals that would be reactive. Bespoke chemicals (those mixed for use during shift) are similarly separated in labelled containers.
- ii. Only staff with chemical accreditation mix chemicals. All staff are inducted on the reactive nature of some production chemicals
- iii. Induction of all staff into emergency procedures and risk of ad hoc fire fighting in the vicinity of some stored chemicals (especially sodium sulphide)
- iv. Induction of staff attending to refuelling at both diesel and gas refilling stations.
- v. No smoking rules & signage. Designated smoking areas away from combustible materials.
- vi. Extensive systems of freshwater fire fighting hydrants and fire extinguishers. See Appendix 7.2



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- vii. Preventative structures around all gas storages
- viii. Systematic testing of hydrants and extinguishers by commercial provider
- ix. Back up firefighting capacity not powered by mains electricity.
- x. Building construction out of steel and non-flammable materials to limit fire spread
- xi. Detached storage sheds
- xii. Regular machine/motor maintenance to limit overheating
- xiii. Accreditation of mechanical & fitting staff with all repairs completed by accredited staff
- xiv. Focus (induction) on area hygiene in factory, workshop so fire does not spread through waste
- xv. Regular removal of waste by designated cleaners
- xvi. Provision of bins to hold wasted gloves, plastics, flammables.
- xvii. Controls on use of heaters in winter.
- xviii. Induction about hotworks on hot days near grass & combustible materials
- xix. Transport driver/ company induction
- xx. An emergency & evacuation procedure
- xxi. Emergency & evacuation procedure will address visitors to site and who manages their safety
- xxii. SDS available at front gate for emergency responders
- xxiii. Local fire fighting agencies (RFS and Fire & Rescue) aware of manifest amounts of chemicals on site (if they have reached the manifest level)
- xxiv. Containment drains to lined holding ponds to collect polluted runoff generated during firefighting or clean up after firefighting
- xxv. Localised bushfire fighting capacity, independent of mains electricity supply

10.2 Hazardous substance spill/toxic emissions.

The **Inventory of Pollutants** table (See section 15.0) lists hazardous and dangerous chemicals held on site. Small spills are foreseeable; however, they will be contained almost immediately. Spills are foreseeable during delivery. Sodium sulphide is liable to create a toxic emission in either a fire or water incident. Impact on groundwater and local waterways is not seen as a significant hazard from either spills or significant incidents (see 10.1 xxiv above).

Controls consist of

- i. Administrative limits on amount of chemical held on site
- ii. Appropriate storage & transport of hazardous substances (to Australian standard) with regular induction
- iii. Bunding to Australian standards of all hazardous substances including portable bunding.
- iv. PPE for workers using hazardous substances
- v. Induction and safe practices to allow decanting of chemicals
- vi. Maintain manifests of quantities of hazardous substances for emergency responders
- vii. SDS available at front gate for emergency responders
- viii. Create only enough bespoke chemical mixes for run of operations for the day. Appropriate daily storage.
- ix. Clearly identify hazardous substances in storage. Induction to ensure manufacturers labels are not damaged. Storage procedure to present labels towards users
- x. Minimal use of petrol/diesel machinery
- xi. Refuelling in designated refuelling areas
- xii. Develop and implement oil & fuel spillage procedures.
- xiii. Provide spill kits near refuelling sites and induct in use.
- xiv. Building hygiene is maintained to enable quick, easy clean up
- xv. Segregation of waste stream to separate hazardous wastes from production waste
- xvi. Regular routine maintenance with adequate resources to manage an incident caused by mechanical breakdown
- xvii. Transport driver/ company induction

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10.3 'Run of operations' emissions.

Several emissions to air are foreseeable during operations of a brinecure factory. The most significant will be production odours from various point sources;

1. Storage of treated hides in hide room (closest part of factory to nearby residential receptors). The odour has a meaty character, like a butchery
2. A similar flesh/blood odour occurs (for 10-60 minutes) when fresh hides arrive on site
3. Containerized hides & skins leaving site are barely odorous
4. Opening, and draining of kangaroo skin treatment drums creates a moderate/strong odour of flesh and the acidic/alkaline chemicals used. This lasts about 4 hours on 5 days per week
5. The 'brining races' create a very low odour of muddy water, effluent and brine, sometimes blood
6. Draining of brined hides, trimming, grading & folding along the production chain all create a low odour. Odours within the factory are generally low and are usually in the 'meaty' range.
7. After treatment in their drums and fleshing, kangaroo skins have little odour. The grading room and storage shed have almost no odour
8. Waste from kangaroo skins ('fleshings') create a strong odour when disturbed. In a highly limed state, in their bins, they present low odour. They are moved and spread in drying tunnels which can be odorous for 30-60 minutes. Collection & transport of dried fleshings has little odour
9. The factory is drained in several ways. Drains from kangaroo skin treatment drums are odorous (moderate/strong) when the drums are drained
10. Drains from the brine races have low odour. Drains from hide storage room may be odorous as they gather small amounts of slowly moving fluid containing blood
11. Drains from the kangaroo fleshing area will have a low/moderate odour during the fleshing process, for about 4 hours on 5 days per week
12. Waste brine is treated by a Primary Treatment Plant that extracts organic matter. The accumulated sludge creates a very low odour, almost undetectable. The stored sludge also presents a low odour
13. This separated organic matter is taken to drying tunnels for further removal of moisture. The tunnels create moderate/strong odours, dropping to low as the waste dries. Drying lasts 8-10 hours, each day of the week
14. Waste water from kangaroo skin processing is collected in an open effluent pit that may create moderate to strong odours
15. This effluent is pumped to the irrigation farm and spread via travelling irrigators that deliver large droplet sizes. This is one of the most challenging odour sources which is variably moderate to strong. Pooling of water adds to the 'effluent' odour.
16. Nearby are the open evaporation dams that recycle salt. Despite removal of much organic matter, they present a moderate/strong odour that increases as evaporation rate increases.
17. Recycled salt (containing some organic matter) has a low odour. Fresh salt is almost odourless
18. Chemical storage shed emissions are non-existent due to packaging. Sodium sulphide mixed with water (stormwater or fire fighting water) creates a toxic substance (gas) harmful to health.

Controls consist of:

- i. Containment of production odours by factory design. (Minimal doors)
- ii. Air curtains on hide room doors opening towards Daroobalgie village
- iii. Implementation of plastic curtains in all doorways early in 2019
- iv. Odour neutralization misting system throughout factory and hide room
- v. Odour neutralization misting system (after Buckman design) planned for mid-2019 implementation along northern & eastern margins of evaporation dams
- vi. Odour neutralization misting system along boundary between factory and Daroobalgie village (early 2019 implementation)
- vii. Dosing wastewater (brine and effluent) with lime to raise pH levels. Increased dosing during 2019
- viii. Containment of effluent in enclosed tanks, to be introduced in 2019. Containment will address odour from effluent sump and will be a component of addressing odour from the irrigator. Primary treatment of the effluent system will be introduced to improve quality of irrigation water

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- ix. During 2019 a pasture-based sward will be established in irrigation area to better use effluent & improve infiltration/evapotranspiration of effluent
- x. The primary treatment plant removes most organic matter from the brine stream; an extra rotating screen will be added in early 2019 to improve efficiency
- xi. Evaporation ponds are maintained at shallower depths to reduce anerobic activity in effluent brine
- xii. Effluent irrigation is scheduled during daylight hours to reduce evening odours. Factory production schedules start and end early to encourage odour dissipation during the day
- xiii. Use of hand applied deodorants around parts of factory in conjunction with insecticide treatments
- xiv. Scheduled drain cleaning & flushing especially drains associated with kangaroo skin pickling; flushed daily as soon as the drums are emptied. Drain from hide room is flushed weekly. Drain hygiene is given high priority by floor managers
- xv. Weather monitoring equipment working in conjunction with external odour neutralization systems
- xvi. Systematic odour monitoring (daily, via sense of smell) at pre-determined locations within site and along boundaries. Maintenance of **Odour Diary** per **EMP**
- xvii. Community notifications strategy (including maintenance of a neighbours register) to establish good community relations prior to any incident.
- xviii. Mandatory self-reporting of odour related incidents
- xix. Storage of sodium sulphide in dry, waterproof storage locations

Other emissions to air are foreseeable in;

1. Dust, via transport operators, forklift movements, farming operations
2. Fumes, especially diesel, from transport operators and farm

Controls consist of;

- i. Paved access roads especially where transports arrive and depart. Paved surfaces in high usage areas to and from storage sheds.
- ii. Induction of transport operators, monitoring and follow up
- iii. Induction of forklift operators to slow down and not create excess dust
- iv. Lawns (mown areas) maintained in areas near factory
- v. Farming operations do not occur in high wind
- vi. Erosion and sediment control plans (in **EMP**) will maintain a good surface vegetative cover over areas that may create dust
- vii. Diesel machinery is well serviced by warranty providers or accredited mechanics on site
- viii. Contractor's diesel machinery will be monitored and removed from site if considered to be polluting air
- ix. Use of electric motors as the main source of motive power
- x. Burning of refuse will not occur

Several forms of liquid emissions are foreseeable;

1. Salt (NaCl), mainly washed off sealed roads and working areas after rain or washdowns
2. Process chemicals, not completely cleaned up after a spill, runoff when mixed with water
3. Saline overflows from raceways, tanks and drains
4. Effluent overflows
5. Acidic / alkaline pickle and wash when disposed to effluent
6. Nutrients, soil, hair imported on hides & skins

While the first two instances result from accumulated spills and run off after rain, the next three would result from either mechanical failure or operator error. Due to volumes none can be easily contained by temporary bunding. The factory environment is harsh on machinery and fittings due to high salinity levels. Mechanical breakdown and pipe malfunctions do occur.

Some accumulation of soluble process chemicals and nutrients in groundwater is foreseeable.

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Controls consist of:

- i. A **Site Drainage Control Plan (SDCP)**, see **EMP** will be introduced in 2019 to collect stormwater runoff from the factory to be delivered to lined holding dams for treatment and management
- ii. Induction focusing on spills likely to go to stormwater runoff. Focus on immediate and thorough clean up
- iii. Induction focus on handling and transport of hazardous substances from store to point of application
- iv. Improved cleanliness within storage sheds, with regular floor cleaning
- v. Longer term (c.2019) planning looking at movement and storage of chemicals to reduce or eliminate risk
- vi. Regular and timely maintenance of fluid pumps and lines to reduce incidence of malfunction and overflow
- vii. All repairs will be completed by licenced mechanics and trained fitters
- viii. Follow up of all malfunctions by EO and production managers with aim to eliminate future faults. Treat all as 'incidents' (whether triggering EPA definition or not). Maintain records (see EMS) of cause and outcome.
- ix. Regular cleaning of tanks within bunds and their surrounds
- x. Maintenance of waste records showing date and direction of any waste created by an 'incident'
- xi. Implement subsurface/groundwater monitoring piezometers near factory and around evaporation dams. Monitor quarterly, respond to findings
- xii. Increasing vegetation around factory and in drains; filtering plants within stormwater drains

10.4 Transporter error/issue

The factory has many visitors. Daily, up to 20 trucks may arrive and depart. A potentially dangerous entrance/egress exists to Newell Hwy. Building & infrastructure has evolved with impacts on traffic flow patterns. Factory vehicles including forklifts & tractors share same roads and workspaces. Pedestrians share same locations. Collisions are foreseeable. Issues with trucks and drivers (fatigue) are foreseeable. The outcomes of an incident would be similar to those addressed above. Impacts would range from minor to severe. That the operators are external to the business leads to a different range of controls.

Controls consist of:

- i. Communication to regular transport providers of this **PIRMP** (and provision of a digital copy) with request to induct drivers
- ii. Monitoring drivers/transport companies to follow up **PIRMP** implementation. Follow up with transport providers
- iii. Encourage LHH employees to report near misses as WHS issues. Investigate and action along potential pollution lines
- iv. Treat regular drivers and their owners as 'staff' by provision of relevant emergency/evacuation and environmental procedures related to pollution incidents. Involve in **PIRMP** tests where appropriate. Consult about traffic issues
- v. Drivers to report all spills (to Administration Manager) and assist LHH employees with immediate clean up in line with this plan
- vi. Maintain regularly reviewed **Traffic Management Plan** applying to both transport operators and LHH employees
- vii. Provision & maintenance of large print and/or symbolic signage directed at drivers warning of hazards including pedestrians
- viii. Provision of roadside furniture, including mirrors, at hazardous locations.

10.5 Natural events

Two natural events foreseeable are flooding due to heavy, localised rain and effects of tornado. They may occur in conjunction. Lightning strike may occur, often resulting in fire which is addressed above.

Severe stormwater events are irregular but may increase in frequency with global warming. The factory site is advantaged by being on highest available ground and is generally built up, especially at the rear. Stormwater flowing

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through the factory is not common but has occurred in severe events. Roof area of the factory is 3800m² creating significant, rapid run off. The factory site consistently drains inwardly to the centre of the property.

Modified local drainage patterns create foreseeable risk. Upstream adjustments to catchments by rail authority, highway authority, Forbes Shire Council in their adjacent industrial subdivision and by neighbouring agricultural retailers directs significant amounts of run off, at faster than historic rates, towards the factory and effluent irrigation farm. The factory site has low level pollution (salt & production chemical spills) on the ground, however the irrigation farm has a licence to pollute with liquid effluent. Therefore, it is essential to keep run-on water out of the irrigation area and contain local run-off within the irrigation area. This objective is made difficult by the placement of the irrigation farm within a natural waterway. Controlling run-on water near the factory is equally important.

Controls consist of:

- i. Development of **SDCP** to manage both factory and district run-on, runoff water. Objective of 'factory component' of **SDCP** to collect, contain and manage stormwater runoff from the factory. Objective of 'farm component' of **SDCP** to manage run-on water from the catchment through the property
- ii. On-ground works to create 'grassed water-ways' which will have the capacity to carry flows associated with severe stormwater events
- iii. Factory runoff drains & storage dams will have the capacity to manage controlled runoff from a storm event
- iv. Bunds will be rehabilitated around the effluent irrigation area to create minimum 750mm freeboard all around
- v. Existing bunds along the northern factory boundary will have a minimum 750mm freeboard adjacent recently (since 2000) constructed Council waterway
- vi. Excess run off from the irrigation area will spill to overflow dams by rehabilitated grassed waterways
- vii. Bunds and drains created to manage severe run off events will be constructed to specification (especially compaction) to prevent collapse
- viii. All impediments will be removed from planned water ways (examples, dead trees, constructions)
- ix. Induction to maintain grassed waterways and bunds in readiness for stormwater events

Tornado, (high winds, driving rain) may foreseeably create a pollution event by

1. Loss of roof and wall cladding allowing rainwater to enter; especially problematic in dry chemical storage sheds.
2. Debris strewn across the environment, especially waste chemical bags carrying labels, 'caustic', 'dangerous substance' etc.

Controls consist of:

- i. Building construction to Forbes Council standards to wind strengths foreseeable within Council's guidelines
- ii. Regular building inspection and maintenance especially in areas where dry storage of chemicals is essential. The factory environment of constant moisture and salt indicates this building requires attention.
- iii. Thoughtful wasting of chemical packaging that would blow or float; provision of capped wheelie bins for waste. Induction of those staff involved.
- iv. Rapid debris clean up and removal to waste with emphasis on items that have left site

10.6 Issues developing

Planning for developing issues is not easily documented, but processes can be put in place. An issue with broken Asbestos Cement (AC) sheet (from an historic abattoir which occupied site) has developed and been addressed. Capping of historic evaporation ponds may create developing management issues.

Controls consist of:

- i. A team approach involving meeting of Site Manager, Environmental Officer and affected area supervisors to address an issue and put agreed procedures in place. **EMP** to be consulted and modified if required.
- ii. Consultation with EPA of NSW to determine severity of issue and appropriate controls



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- iii. Recording of developing issues including minuting of decisions and controls put in place
- iv. Modification of **EMP** with 'document control' showing a new issue is being addressed
- v. Modification of **PIRMP** (if issue is ongoing)
- vi. Maintenance of an inventory of contaminated sites which is consulted before earth moving or construction
- vii. Maintenance of designated waste areas to appropriately stockpile removable waste linked to a developing issue eg. Establishment of an AC storage area where it is contained under cover
- viii. Maintenance of **Waste Removal Register**

11.0. ACTIONS TAKEN AFTER AN INCIDENT

11.1 This **PIRMP** places responsibility for acting during an incident with individual(s) immediately involved. Their responsibilities are to;

- 1. effect immediate containment and clean up
- 2. report the incident to their supervisor (or Site Manager depending on scale)

11.2 After a pollution incident the Site Manager will engage Environmental Officer to undertake follow up actions of;

- 1. investigating,
- 2. reporting internally
- 3. managing environmental recovery
- 4. revising **PIRMP**

11.3 If the pollution incident has not been reported to *EPA Hotline*, the Environmental Officer will make a recommendation to Site Manager to 'report' or not (based on definition of an incident, including potential harm).

11.4 An incident investigation by Environmental Officer will populate an **Incident Report** form (see **EMP**) which will a record;

- (a) The nature of the incident
- (b) Time, date and duration of incident
- (c) Location of incident
- (d) Number of persons involved, supervisor informed
- (e) Perceived cause(s) of incident
- (f) Environmental harm (including potential harm) resulting
- (g) Record of management team decisions
- (h) PIRMP revision required

11.5 Following an incident investigation, and as promptly as practical, management team will meet to set recovery objectives, strategies, key tasks, and timeline. Plans and outcomes will be recorded under point (g) in the **Incident Report** form.

11.6 Site Manager will oversee environmental recovery, employee training and production system modifications.

11.7 Environmental Officer will revise **PIRMP** to address the incident and test **PIRMP** within one month.

11.8 Environmental Officer will modify **EMP** if required

11.9 Site Manager will oversee media and external reporting.

12.0 COMMUNITY COMMUNICATIONS STRATEGY

12.1 Early warning. Communication with neighbours is an essential element of LHH communications strategy. Where a pollution incident moves to a critical incident, the Warden/Site Manager will action the **Neighbourhood Contacts** list with every contact informed by either direct contact or SMS. Information provided will clearly state;

- 1. The nature of the hazard
- 2. risks to health
- 3. advice given by emergency combat agencies



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Follow up contact with neighbours will be made by Site Manager (or delegate) within 24 hours of a critical incident to address concerns.

A non-critical incident that may impact neighbours will trigger Site Manager to action a call (by phone) to those neighbours (from **Neighbourhood Contacts** list) likely to be affected, within 24 hours of the incident.

A planned or foreseeable emission with a moderate to high odour will be communicated to neighbours at least 24 hours ahead by use of the **Neighbourhood Contacts** list. A call to a message bank will leave a contact phone number and details of the proposed emission. Details communicated will include, but not be limited to, need for the emission, timing of the emission, expected duration of the emission, controls/ameliorations to be used

All pollution incidents (within the definition) will be notified to the Appropriate Regulatory Authority (the EPA of NSW) with follow up investigation and record keeping.

12.2 Community relations. As a business expecting to create emissions to air, LHH will establish good relations with neighbours and encourage them to act as a watchdog for odours. LHH will receive neighbourhood 'complaints' and act on them. When neighbours advise they may otherwise have called *EPA Hotline*, LHH will self-report.

Neighbours will receive regular (3 monthly) written updates from Site Manager. Topics may cover factory processes including those likely to generate short term odour risk. Technological improvements to treat odour will be publicized. Over time these communications will move to announcements on LHH website.

To provide opportunities for consultation with neighbours and other stakeholders, LHH will develop a **Community Consultation Strategy** during 2019 (see EMP)

13.0 MINIMISING HARM TO STAFF / TRAINING

13.1 Most incidents likely to occur can, and should be, quickly eliminated. Staff engaged in controlling the incident (spill control, CPR) will ensure their supervisor is aware of their safety and whereabouts.

13.2 If an incident escalates, staff will proceed to the assembly point on the direction of supervisor, or by common sense. (See **Emergency Evacuation Response Procedure**). From there, staff may be directed by the Warden to assist with controlling the pollution incident according to training. Staff will not leave evacuation point without inquiring with Warden. As emergency responders arrive and take control, staff will return to evacuation point. Staff will stay at the assembly point until given all clear by the Emergency Authority via the Warden.

13.3 The factory alarm system (See **Emergency Evacuation Response Procedure**) consists of oral directions to move to the assembly point. No alarm will sound.

13.4 A district-wide emergency may see the factory site used as a staging point for emergency responders and local residents. The Warden and evacuated staff may need to manage these people.

13.5 Employees will be provided with training to ensure they can safely clean-up chemical spills. This will be provided at induction and refresher training annually.

13.6 Employees will be provided with approved personal protective equipment as per MSDS and **Emergency Evacuation Response Procedure**. The Warden, or staff responsible for keeping MSDS, will oversee that approved PPE is available.

13.7 All employees will be made aware of their responsibility to report spills of pollutants. Reporting/recording is to the Environmental Officer.

13.8 All employees will be made aware of their responsibility to immediately clean up all spills of a pollutant that appears in Section 15. Inventory of Pollutants

13.9 The training records for each employee shall be established and controlled by the Site Manager. Training needs of all employees will be reviewed at least once per year.



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14.00 EMERGENCY CONTACTS

14.1 Calling 000 first in an emergency is required to safeguard health & property.

14.2 As a holder of an Environmental Protection Licence, the Appropriate Regulatory Authority (ARA) is the EPA of NSW. A call to *EPA Hotline* will be **'immediate'** once a pollution incident is occurring or a determination is made that an incident is reportable

14.3 Emergency contact phone numbers. See appendices below. After 000 and EPA (ph 131555) the next 4 phone numbers are specified by the protocol for *Industry Notification of Pollution Incidents (Part 5.7 of the POEO Act)*. Council is not the ARA but may have an interest in incident follow up. Fire and Rescue has a similar interest; the number provided is their "after incident" contact. These are 24 hour contacts. The latter numbers on the list are useful emergency contacts including Forbes numbers (during work hours).

14.4 Site first aid providers. See appendices below. Useful information during an emergency.

14.5 **Site emergency control.** See Table 1.0. Area supervisors are listed to report an incident or emergency. During a working hours incident, they will aid emergency responders through the Warden.

14.6 After hours contacts include Site Manager and Administration Manager who will come to site to assume 'Warden control' and communicate with emergency responders.

Table 1.0

| DESIGNATION | SUPERVISER | DEPARTMENT |
|------------------------|---|--|
| EMERGENCY WARDEN | Ian Rousell | Site Manager Mob. 0427 458 582 |
| SITE MANAGER | Ian Rousell | Site Manager Mob. 0427 458 582 |
| ADMINISTRATION MANAGER | Mark Churchhill | Administration, SDS Mob. 0429 151 224 |
| MAINTENANCE SUPERVISOR | Grant Rousell | Maintenance |
| DRUM SHIFT | Peter Spice, Nicholas Girot, Chris Lewis | Drums |
| EFFLUENT | Terry Stibbard, Brendan Besgrove | Effluent, farm |
| FLOOR SUPERVISORS | Barry Read, Jason Britt | Operations |



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15.0 INVENTORY OF POLLUTANTS ***

Hazardous goods (likely to cause health affects) are shown in the pollutants table in **bold red**.

Table 2.0

| # | STORAGE TYPE | Hazard ID | Maximum amount stored | CHEMICAL TYPE |
|-----------|--------------------------|-------------------------------------|-----------------------|--------------------------------|
| 1 | Above Ground Tank | Hazchem 2YE | 6,000 Litres | Liquefied Petroleum Gas |
| 1a | LPG Bottles | Hazchem 2YE | 480 Litres | Liquefied Petroleum Gas |
| 1b | Above Ground Tank | Hazchem 2YE | 3,000 Litres | Liquefied Petroleum Gas |
| 2 | Roofed store | H315,H318,H335 | 11 tonnes | Hydrated Lime |
| 2a | Mezzanine | H315,H318,H335 | 400 kg | Hydrated Lime |
| 3 | Roofed store | Xi | 11 tonnes | Soda Ash |
| 3a | Mezzanine | Xi | 400 kg | Soda Ash |
| 4 | Bunded acid store | C, R35, R41, S30 | 800 Litres | Sulphuric Acid 98% |
| 4a | Outside mezzanine | C, R35, R41, S30 | 4 x 20 Litres | Sulphuric Acid 98% |
| 5 | Mezzanine | Detergent C, H302, H 312 | 1000 Litres | Eusapon |
| 6 | Roofed Store | 2X H302, H330 | 500kg | Preventol CT-L |
| 6a | Mezzanine | 2X, H302, H330 | 60 kg | Preventol CT-L |
| 7 | Roofed Store | C,T, R31, R 34 | 5,000 kg | Sodium Sulphide |
| 7a | Mezzanine | C,T, R31, R 34 | 1500 kg | Sodium Sulphide |
| 8 | Roofed Store | Preservative | 80 litres | Sodium Metabisulphide |
| 8a | Mezzanine | Preservative | 20 litres | Sodium Metabisulphide |
| 9 | Roofed store | Bleach Xn, O | 1000 kg | Sodium Percarbonate |



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| | | | | |
|-----|------------------------|---|-----------------|--|
| 9a | Mezzanine | Bleach Xn, O | 250 kg | Sodium Percarbonate |
| 10 | PTP banded store | pH adjuster H 314 | 1000 Litres | Sodium Hydroxide |
| 11 | Unloading ramp | Microbiocide H 314, H317 | 1,000 Litres | Busan 1455 |
| 12 | Mezzanine | Water treatment C, | 1000 Litres | Podica 19 Pot Dimethyl Dithiocarbamate |
| 13 | Roofed store | De-liming agent | 1000kg | Ammonium Sulphate |
| 13a | Mezzanine | De-liming agent | 500 kg | Ammonium Sulphate |
| 14 | Mezzanine | Tannery 'bate' H319, H 315, H 334 | 40 kg | Buzyme 7709 |
| 15 | Roofed store | Textile softener | 1000 litres | Oxislip LEA |
| 15a | Mezzanine | Textile softener | 20 Litres | Oxislip LEA |
| 16 | Cleaners Store | Insecticide H226, GHS02, GHS08 | 40 litres | Py Fog Pyrethrums & pyrethroids |
| 17 | Cleaners Store | Insecticide | 20 Litres | Fendona Alpha-Cypermethrin |
| 18 | PTP banded store | Polymer | 12 x20 Litres | Polyflox 412 |
| 19 | Roofed Store | Polymer | 24 x 25 kg bags | Polyflox 185 |
| 20 | PTP banded store | Coagulant H315 H319 | 3000 Litres | Clearflox 3401 23% Al2O3 |
| 21 | PTP banded store | Alkali (pH treatment) | 1000 litres | CS30 |
| 22 | Salt bunkers | Salt | 90 tonne | Salt NaCl |
| 23 | Outside store | Salt | 24 tonne | Skin Salt Add: 1% Boric acid, 1% NaF |
| 24 | Bulk diesel tank | Diesel | 1000 Litres | Diesel |
| 25 | Flammable liquid store | Petrol | 5 x 20 Litres | Petrol |
| 26a | Mechanical workshop | Motor Oil | 700 Litres | Oil & greases |
| 26b | Outside storage | Motor Oil | 400 Litres | Oils & greases |



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| | | | | |
|---|-------------------------------|--|------------------|--|
| 27a | Mechanical workshop | Paint, solvents GHS 02, GHS 08 | 20 Litres | Turps, paints, thinners |
| 27b | Flammable liquid store | Paint, solvents GHS 02, GHS 08 | 40 Litres | Turps, paints, thinners |
| 28 | Ag Chemical Store | Herbicide See SDS*1 | 20 Litres | Grazon Xtra Triclopyr,picloram/aminopyralid |
| 29 | Ag Chemical Store | Herbicide See SDS*1 | 0.5kg | Spinnaker |
| 30 | Ag Chemical Store | Herbicide See SDS*1 | 20 Litres | Gladiator Glyphosate 450g/l |
| 31 | Cleaners store | Class 9 Deodorant | 10kg | Opal Odour Blocks |
| 32 | <i>Cleaners store</i> | <i>Poison</i> <i>Rodenticide</i> | <i>1 kg</i> | <i>Bromacide or generic</i> <i>0.05g/kg Brodifacoum</i> |
| <p>*** Inventory on hand as of 21.12.2018. See SDS*1 Multiple hazard warnings, most not related to a pollution incident</p> | | | | |

16.0 DOCUMENT CONTROL

16.1 This **PIRMP** will be reviewed annually and after any pollution incident. An updated version will be noted in 15.6 **Document Control** table. The **Document Control** table will list 'revisions' and 'need for training'.

16.2 One hard copy of this **PIRMP** will be available to emergency responders in the MSDS storage box at front gate of site.

16.3 Hard copies of this **PIRMP** will be produced upon request to an EPA officer, and members of public or local authority who request a copy. Staff printing a hard copy will cross reference the Version # (in header of document) with the latest version in the **Document Control** table.

16.4 A digital copy of this **PIRMP** is available on the Hassall Forbes Brinecure website www.Lorishassall.com.au/environment

16.5 **PIRMP** updates will be approved by Site Manager

Table 3.0

| Document Control table | | | |
|------------------------|----------|---|--------------------|
| Version | Date | Summary of changes | Need for training? |
| 1 | 11.12.17 | | |
| 2 | 4.10.18 | | |
| 3.1 | 24.12.18 | Significant changes to format and content | Yes |

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17.0 APPENDICES

These photos, maps and flow chart are referred to in Section 7.

17.1 Site overview showing factory site and nearby receptors.

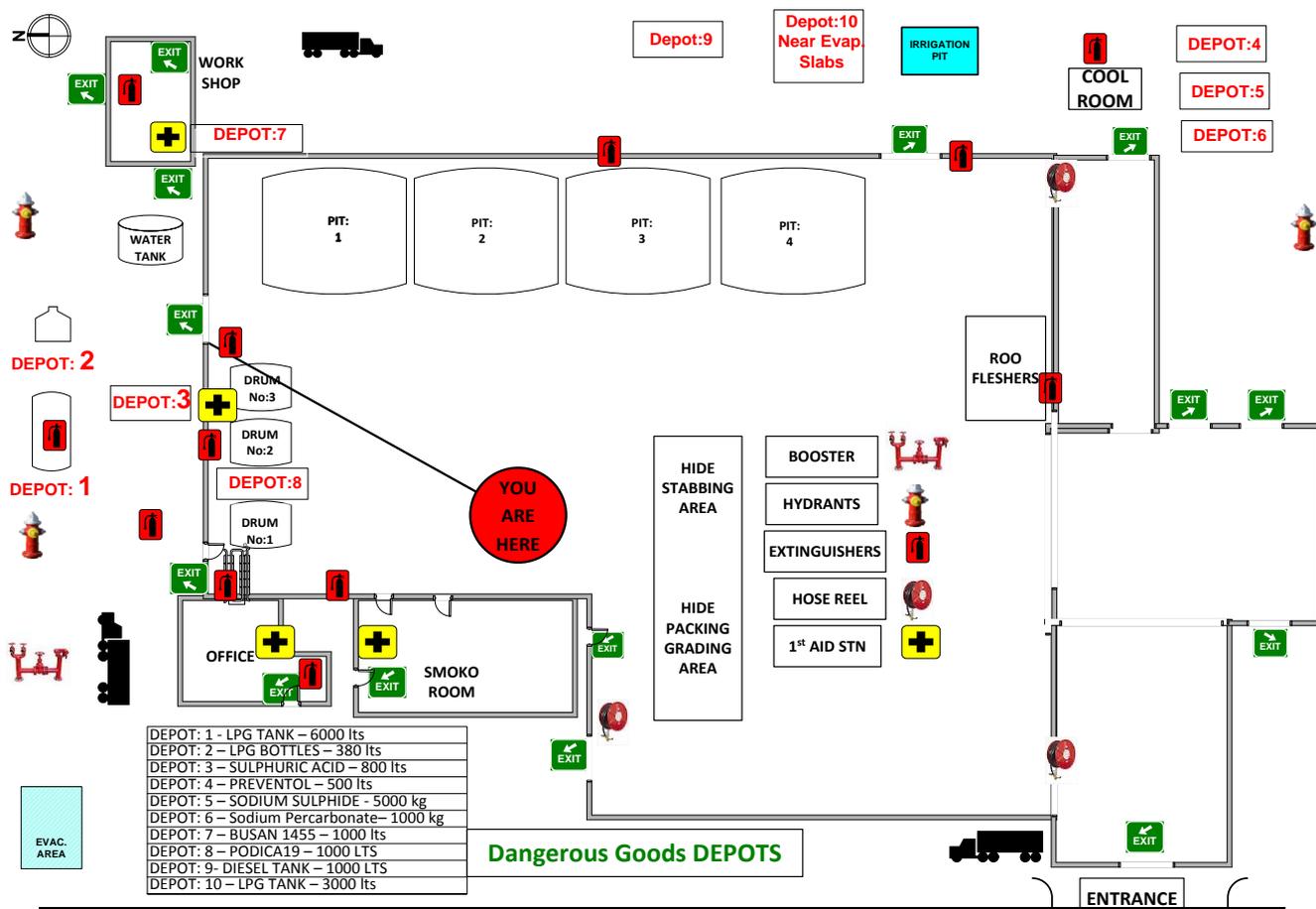


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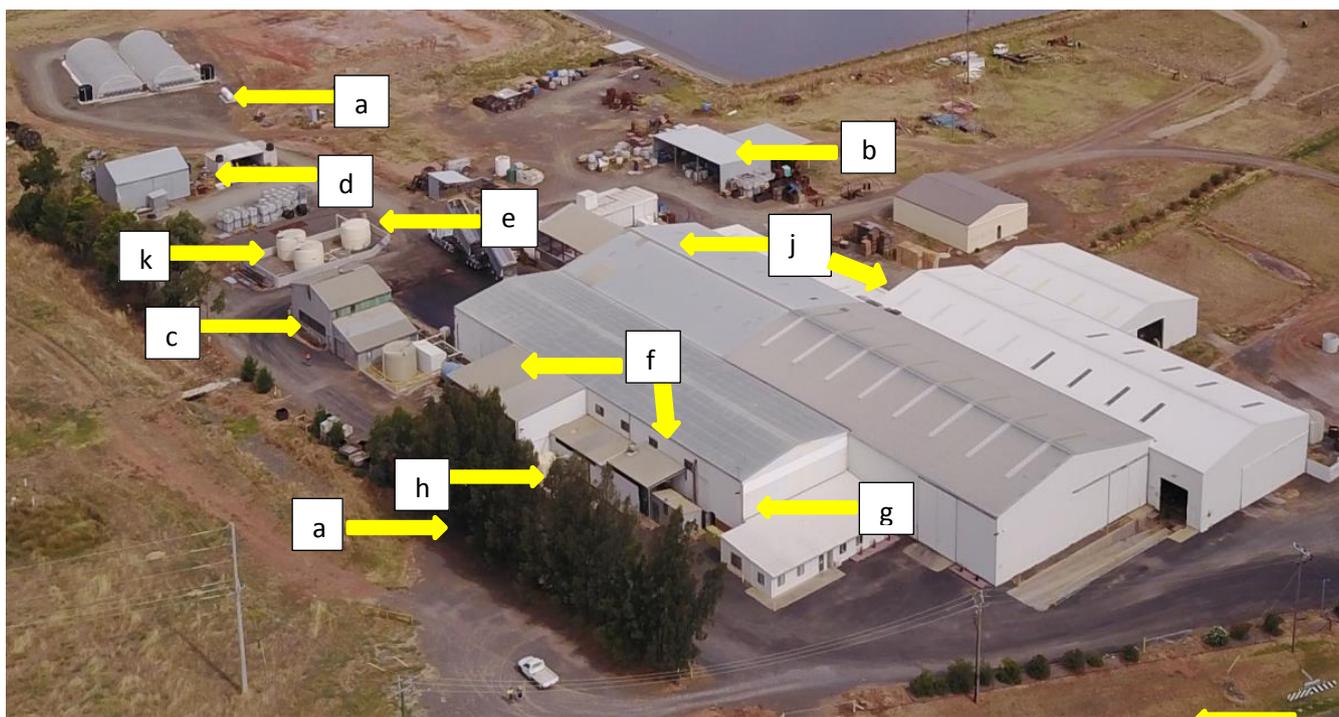
17.2 Site Evacuation Plan and location of fire extinguishers.



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17.3 Chemical Stores.



Key:

- a) LPG tanks & gas bottle stores
- b) Roofed store, production chemicals
- c) Mechanical workshop
- d) Agricultural chemical store
- e) Bulk diesel tank
- f) Mezzanine (inside & outside)
- g) Cleaners store
- h) Bunded acid store
- i) Flammable liquids
- j) Salt storage
- k) PTP bunded storage



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17.4 Emergency Contact Numbers

| SERVICE | DESCRIPTION | AREA | TELEPHONE NUMBER |
|------------------------|---|--------------------|---------------------------|
| ALL EMERGENCY SERVICES | First response | National | 000 |
| EPA | EPA Hotline | NSW | 131555 |
| FORBES COUNCIL | FSC incident follow up needs | Forbes | (02) 68502300 |
| FIRE & RESCUE | After an incident/ report pollution | NSW | 1300 729 579 |
| WORKCOVER NSW | Notification of workplace injuries | NSW | 131050 |
| MINISTRY OF HEALTH | PUBLIC HEALTH UNIT | NSW | 9391 9000 |
| SES | NSW State Emergency Service | NSW Forbes | 132 500 (02) 6850 2900 |
| POLICE | All Crimes | Forbes | (02) 6853 9999 |
| MEDICAL | Poisons Information Centre Forbes Hospital | National Forbes | 131 126 (02) 6850 2000 |
| ELECTRICITY ISOLATIONS | Power Company | ESSENTIAL ENERGY | 13 20 80 |
| SITE MANAGER | Ian Roussel (after hours contact) | Forbes | Mob 0427 458 582 |
| | | | |
| DEPARTMENT | POSITION | CONTACT PERSON | |
| PRODUCTION | Forklift Supervisor | Barry Read | |
| PRODUCTION | Brine Waste Operator | Brendan Besgrove | |
| MAINTENANCE | Maintenance Supervisor | Grant Rousell | |

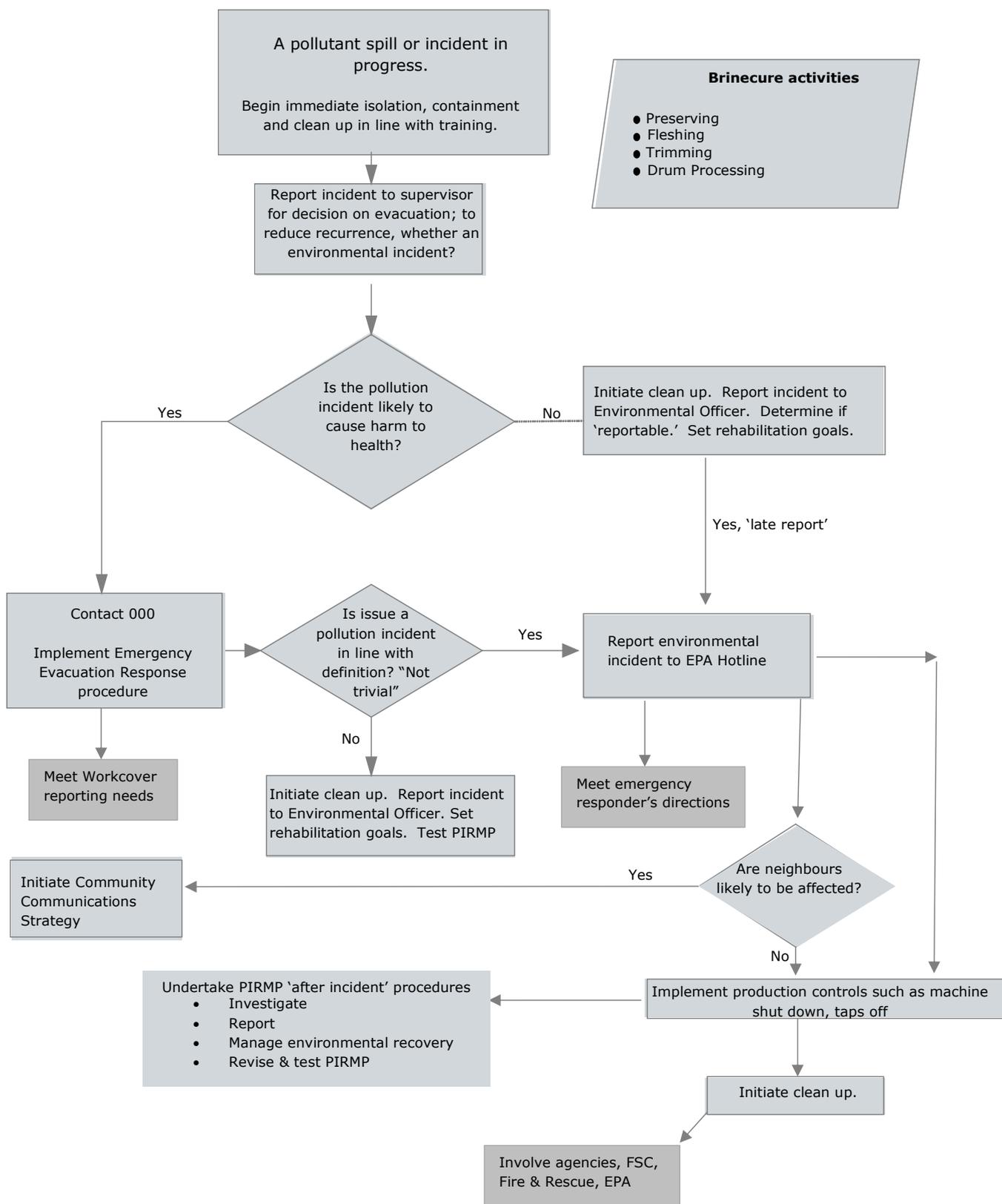


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17.5 Emergency Response to Pollution Incident Plan flow chart.



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REVISION: 0

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