

Pollution Incident Response Management Plan 2018-2019

Hunter Galvanizing Pty Ltd

7 January 2019









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1 Introduction

1.1 Hunter Galvanizing

Hunter Galvanizing Pty Ltd, herein referred to as Hunter Galvanizing, is located at Lot 25 DP 1131688 13 Old Punt Road Tomago NSW 2322, which is an industrial region north of Newcastle's city centre. Hunter Galvanizing own and operate a galvanizing processing facility at Tomago.

The facility operates 24 hours a day, 7 days a week. Hunter Galvanizing holds Environmental Protection Authority (EPA) Environmental Protection Licence (EPL) number 12014.

This Pollution Incident Response Management Plan (PIRMP) has been prepared by MJM Environmental Pty Ltd (MJM) for Hunter Galvanizing.

Hunter Galvanizing is required to prepare a PIRMP in accordance with the *Protection of the Environment Operations (POEO) (General) Amendment (Pollution Incident Response Management Plans) Regulation 2012*, Chapter 7 part 3A. The POEO Act states that a PIRMP may form part of another document that is required to be prepared under or in accordance with any other law, as long as the information required to be in the PIRMP is readily identifiable.

The objectives of the PIRMP for Hunter Galvanizing include, but are not excluded to:

- Identify the hazards to human health and environment onsite to which the EPL relates
- Consider and outline the likelihood of any such hazards occurring, and risks involved
- Detail pre-emptive actions to be taken to prevent or minimise risks
- Outline the possible pollutants onsite in an inventory, showing quantity and storage
- Outline safety equipment and devices used to control a pollution incident
- Contact details of each authority Hunter Galvanizing must contact following an incident
- Outline details of early warning mechanisms
- Measures to minimise the risk of harm to workers
- Maps indicating matters outlined in the EPL and surrounding areas and locations of potential pollutants
- Outline staff training programs
- Manner in which the plan is to be tested and maintained

1.2 PIRMP Availability Requirements

- A copy of the plan is kept onsite and made available on request to an authorised officer, and a version of the PIRMP plan is available to the public within 14 working days after the preparation of the plan on Hunter Galvanizing's publicly accessible website at <http://www.huntergalvanizing.com.au/environmental-monitoring-data>. A copy will be made available to any person who requests a copy, at no charge.
- As there are security issues related to making the whole plan publicly available, only certain parts of the plan need to be made publicly available in accordance with the POEO Act.
- The website version of the plan contains the following:
 - Procedures to notify and provide information to neighbours and relevant authorities in the event of an incident
 - Mechanisms used to provide early warnings and regular updates to the owners and occupiers of premises who may be affected by an incident

1.3 Definition of a Pollution Incident

A pollution incident is defined 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 any noise.'*

A pollution incident as per Section 147 of the POEO Act is required to be reported if there is a risk of 'material harm to the environment' defined as:

- "The incident involved 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 \$10,000.00 (or such other amounts as is prescribed by the regulations)”, and
- “Loss includes the reasonable costs and expenses that will be incurred in taking all reasonable and practicable measures to prevent, mitigate, or make good harm to the environment.”

The *Protection of the Environment Legislation Amendment Act 2014* commenced on 1 January 2015 and amends the Protection of the Environment Operations Act 1997.

The amendments are to provide that material harm pollution incidents involving only odour are required to be notified to the EPA in the same manner as other environmental incidents. The POEO Act describes offensive odour as:

offensive odour means an odour:

(a) that, by reason of its strength, nature, duration, character or quality, or the time at which it is emitted, or any other circumstances:

(i) is harmful to (or is likely to be harmful to) a person who is outside the premises from which it is emitted, or

(ii) interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted, or

(b) that is of a strength, nature, duration, character or quality prescribed by the regulations or that is emitted at a time, or in other circumstances, prescribed by the regulations.

When becoming aware that an odour emitted from activities conducted by Hunter Galvanizing has impacted human health, Hunter Galvanizing will immediately activate the PIRMP.

1.4 Other Relevant Documents

This PIRMP is to be used in conjunction with:

- Hunter Galvanizing’s EPL 12014
- Hunter Galvanizing’s *Emergency Evacuation Plan*
- Hunter Galvanizing’s *Environmental Management System (EMS)* procedures

1.5 Site Overview

Hunter Galvanizing owns and operates a galvanizing facility. The facility is located at Lot 25 DP 1131688 13 Old Punt Road Tomago NSW 2322. The facility operates 24 hours a day, 7 days a week with a workforce of approximately 76 people, and operates under EPL 12014.

The site currently consists of two warehouse buildings identified as Plant 1 and Plant 2 which contain the galvanizing process. Each warehouse contains one galvanizing plant process which includes zinc bath, acid baths and kettle. Administration offices and concrete hardstand car parking areas are also present. A stormwater detention system at the front of the site collects and contains stormwater runoff from the hardstand and roofs of the facility prior to discharge or reuse.

Raw materials (steel or stainless steel referred to as ‘black steel’) are received at the facility to undergo the galvanizing process. The galvanizing production process consists of the following unit operations:

- Degreasing;
- Pickling;
- Preheating;
- Zinc coating; and
- Passivation (quenching).

1.5.1 DEGREASING

Degreasing is the first step in preparing the raw material for galvanizing. Degreasing occurs in a sodium hydroxide (caustic) bath. The caustic bath operates at a temperature of approximately 80°C. A surfactant (Elite Galvaclean CBM) is added to the caustic tank to improve degreasing properties. The fumes emitted from the degreasing bath are not acidic or high in particulate concentration. The raw material and the degreasing tank are shown in the figures below. There are four (4) caustic tanks onsite at the time of writing. Sodium hydroxide is supplied to site in liquid form.



Figure 1-1: Raw material at the beginning of the production process



Figure 1-2: Degreasing tank

1.5.2 PICKLING

After degreasing, the raw material is placed in one of the pickling baths, as shown in Figure 1-3. Each of the baths are of the same dimensions and are dosed with hydrochloric acid. There are eleven (11) acid pickling tanks in Plant 1 and seven (7) tanks in Plant 2 at the time of writing. Hydrochloric acid is brought onto site in liquid form.

The acid concentration and therefore strength of each of these baths vary. Generally, during production two of the baths have a strong acid concentration of 12% in Plant 1 and 14% in Plant 2. During times of acid delivery, the acid concentration can be as high as 17%. The weak acid baths can have acid strengths from 6% to as low as 1%. The temperature of the pickling tanks is at ambient temperature.



Figure 1-3: Pickling tanks

1.5.3 DRYING BATH (PREHEATING)

Upon completion of pickling, the processed material is placed in a drying bath for preheating, as shown in Figure 1-4. The drying bath is heated with natural gas as fuel. Hydrochloric acid in its liquid phase is entrained in the processing material and is then heated between 65°C and 80°C, as measured at the plant. Any entrained hydrochloric acid in its liquid phase is then vaporised and emitted as an acid fume.



Figure 1-4: Drying bath

1.5.4 GALVANIZING BATH

When the processed material has been dried, it is then ready to be placed in the galvanizing bath. The galvanizing bath and kettle hood are shown in Figure 1-5.

The dimensions of the Plant 1 galvanizing bath are 10.2 metres in length, 1.5 metres in width and 2.4 metres in depth. During galvanizing the fume from the kettle is directed into the kettle hood. The kettle hood has the same length and width dimensions as the galvanizing bath, with a height of 8.1 metres.

The dimensions of the Plant 2 galvanizing bath are 7.4 metres length, 1.8 metres width and 3 metres depth. The galvanizing bath's hood has the same width and length dimensions and a height of 8.1 metres.

Known fumes produced from galvanizing bath are particulate matter, metals, ash, zinc fume and zinc compounds.

Additives to the galvanizing process are the following substances:

- EZDA, a zinc dye casting alloy made primarily from aluminium. It is added to the kettle as a product brightener. It is supplied to site in nine (9) kilogram blocks.
- Lead is added to the kettle, and is supplied to site as one (1) tonne blocks.

Large capacity fans are installed on both Plant 1 and Plant 2 to pull fume from the galvanizing bath hood through two separate biofilters. These fans also pull fume from the pickling process as both the heating tank and acid baths are in close proximity to the bath, and have no physical isolation.



Figure 1-5: Plant 1 galvanizing bath with enclosed kettle hood

1.5.5 PASSIVATION

After zinc coating in the galvanizing bath, the product is quenched (passivation) in a bath containing water and sodium dichromate at a concentration of 1,200 ppm. The passivation bath produces waste heat, which is not currently used in the production process. At time of writing, sodium dichromate is supplied to site in powder form.

Figure 1-6 on the following page illustrates the overall galvanizing production process for both Plant 1 and Plant 2.

Due to the temperature of the galvanized product, which is approximately 450°C, the operating passivation bath generally has an operating temperature close to boiling point (100°C). As each batch of galvanized product is quenched in the bath, evaporation occurs. No external source other than the product, which is approximately 450°C, heats the bath.

Upon completion of passivation, the processing rack is moved out of the passivation bath and on to product tables via overhead cranes. Components are removed from processing jigs and placed onto production tables. Larger structural items are placed on the ground. Items are dressed, and then moved to either the rear Despatch area for collection by customers, or the Loading Area for delivery.

1.5.6 CURRENT MEASURES TO CONTROL ACID FUME

Plants 1 and 2 currently have no measures to isolate the fugitive acid fume. Measures have been taken to control the extent of fugitive acid fume emissions through the use of an acid fume inhibitor, Elite HCl Acid Inhibitor, which is added to the bath by Hunter Galvanizing personnel. The ability of the inhibitor to suppress acid fume is based on plant observation and has not been empirically monitored. Hunter Galvanizing staff have communicated that the acid inhibitors have appeared to decrease acid fume emissions from the bath.

Plant 1 and Plant 2 have similar acid bath fume controls. To date, further controls have not been instigated due to the movement of roof cranes within the plants.

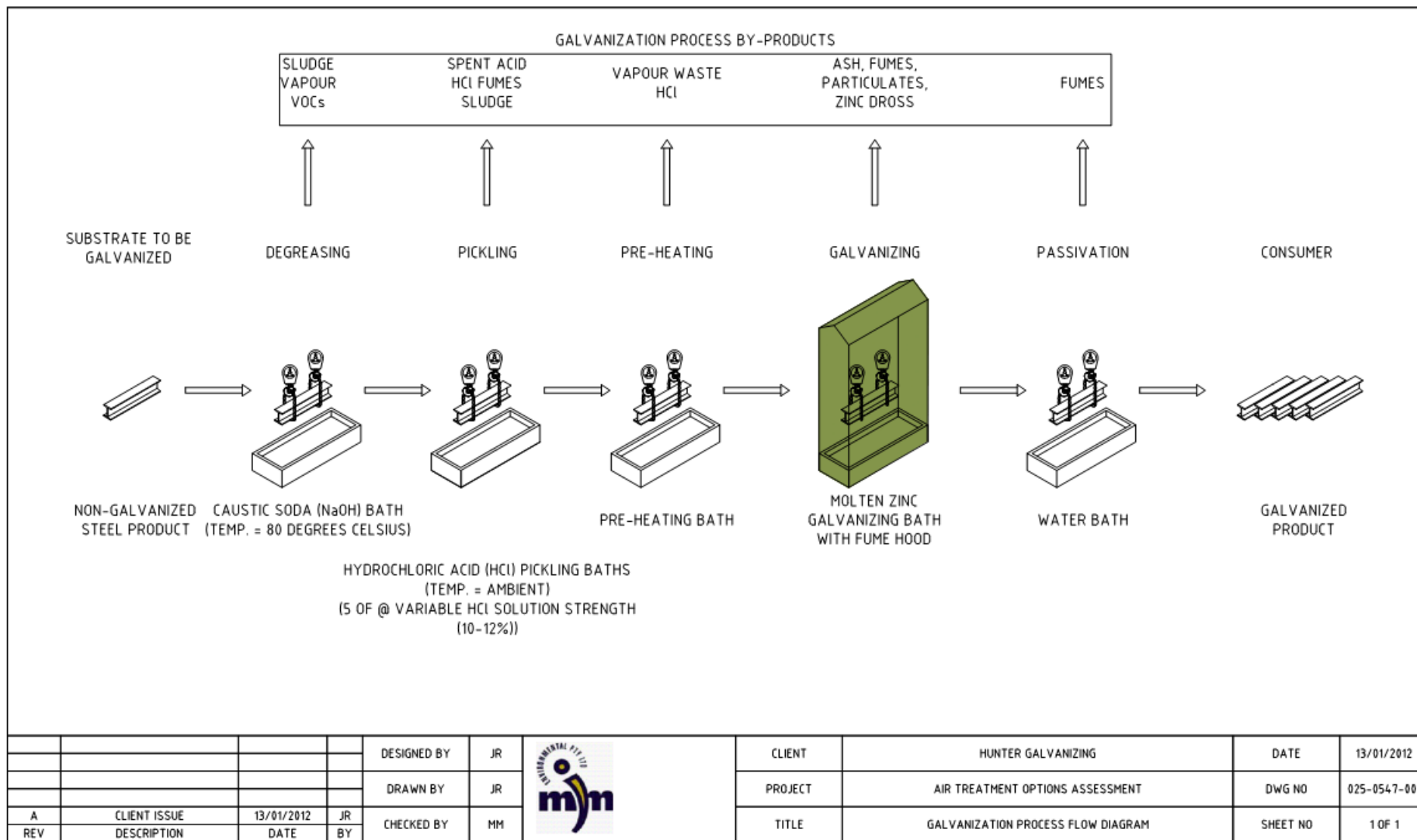


Figure 1-6: Galvanizing production process for Plant 1 and Plant 2

2 Maps of the Premises

Figure 2-1 Illustrates Hunter Galvanizing's site location and boundary. A detailed map showing the site layout including the location of potential pollutants is shown in Figure 2-2.

The areas likely to be affected by a pollution incident at Hunter Galvanizing include the air, soil, and groundwater onsite, and potentially the table drain located opposite the site entrance. Figure 2-3 and Figure 2-4 shows Hunter Galvanizing's site and infrastructure including the locations of stormwater drains, retention dams, discharge points and EPA monitoring points.



Figure 2-1: Hunter Galvanizing site map and boundary (Spatial Information Exchange [SIXMaps] 2016)

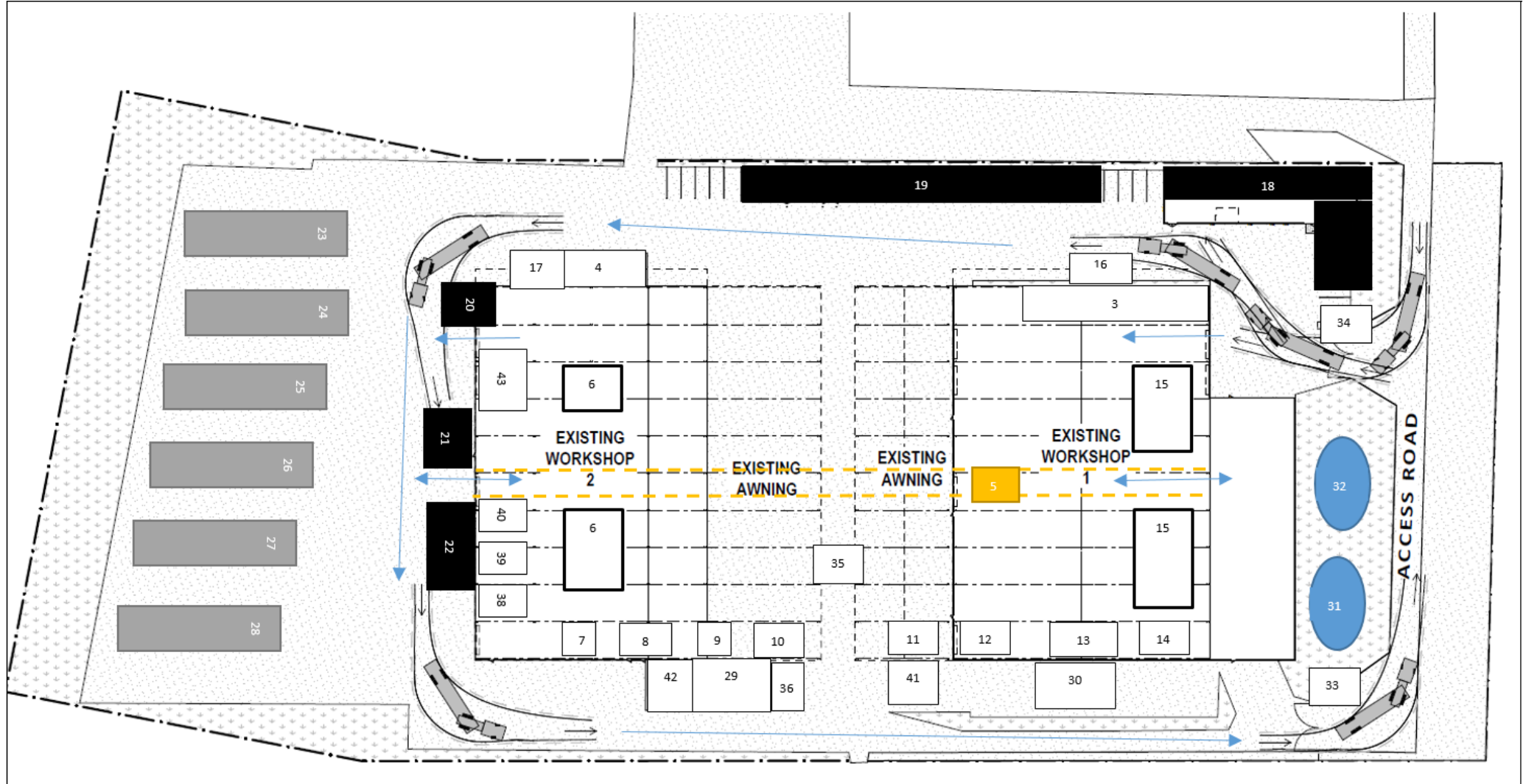


Figure 2-2: Hunter Galvanizing site map with infrastructure including locations of potential pollutants

Table 2.1 references the descriptions of each numbered items from Figure 2-2.

Table 2.1: Description of each item number from Figure 2-2

Item	Description	Item	Description	Item	Description
1	Plant 1	16	Car Port	31	Retention Dam
2	Plant 2	17	LPG cylinders (forklift gas)	32	Retention Dam
3	Main Office	18	Black Steel	33	Exit Gate
4	Plant Lunch Room	19	Black Steel	34	Entry Gate
5	Trolley Line	20	Black Steel	35	Weigh Station
6	Caustic Bath and Pickle Tanks	21	Black Steel	36	Oxyacetylene Tanks (mobile), acetylene and Supershield 52
7	Drying Bath	22	Black Steel	37	Oxyacetylene Tanks (mobile)
8	Zinc Galvanizing Bath	23	Galvanized Steel	38	Surfactant
9	Passivation Bath	24	Galvanized Steel	39	Caustic liquid (when stored onsite; used within 24 hours)
10	Passivation Bath	25	Galvanized Steel	40	Acid Inhibitor
11	Passivation Bath	26	Galvanized Steel	41	Maintenance Shed
12	Passivation Bath	27	Galvanized Steel	42	Maintenance Work Area
13	Zinc Galvanizing Bath	28	Galvanized Steel	43	Lockable storage area for zinc ingots, EZDA, lead ingots, dross ingots and ash
14	Drying Bath	29	Biofilter 2		
15	Caustic Bath and Pickle Tanks	30	Biofilter 1		



Figure 2-3: Hunter Galvanizing site map with stormwater drains, retention dams and discharge points

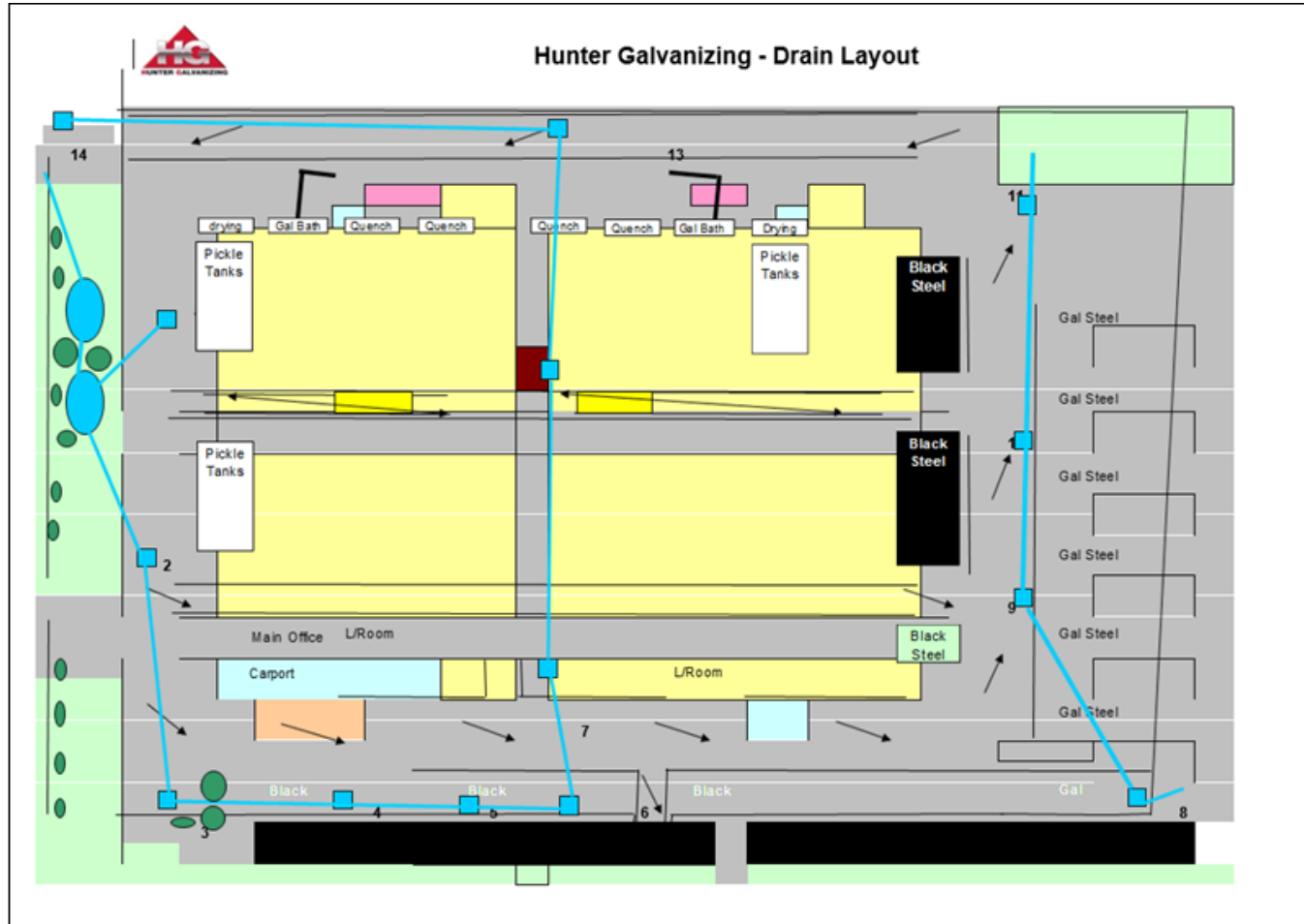


Figure 2-4: Hunter Galvanizing drainage diagram

Items awaiting dressing may be held on production tables in the hardstand area to the north of the facility, being Lot 32 DP 1052105 13 Old Punt Road, Tomago. Lot 32 has a large hardstand area and one processing shed. The hardstand area at Lot 32 is currently being used for storage of product upon completion of processing, and is referred to as the Dispatch Area. No part of the galvanizing production process occurs at the Dispatch Area apart from storage of completed product on the hardstand area prior to dispatch to customers. Figure 2-5 demonstrates the position of the Dispatch Area relative to Hunter Galvanizing’s boundary.

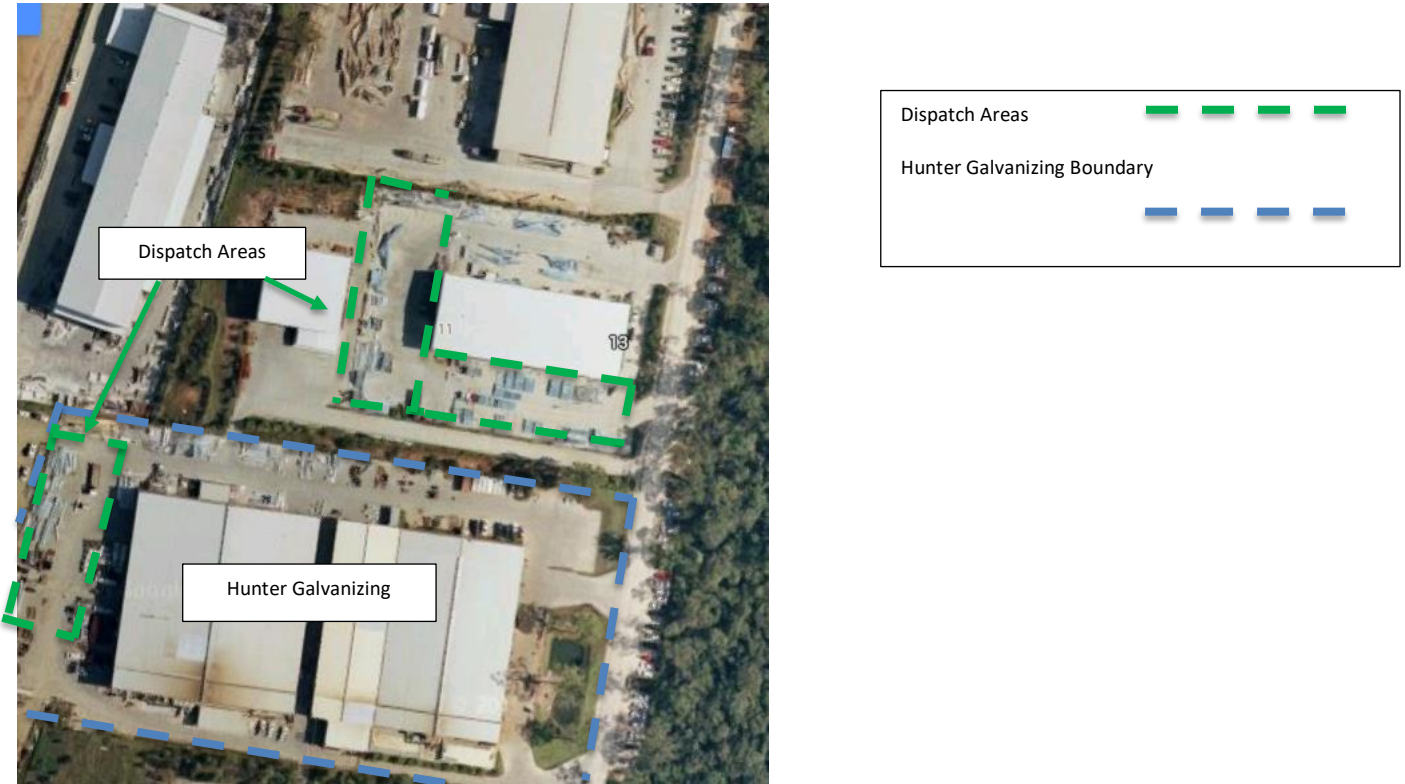


Figure 2-5: Position of Dispatch Area (Lot 32) relative to boundary of Hunter Galvanizing (Google Maps 2015)

3 Site Details and Contacts

3.1 EPA Scheduled Activities

As aforementioned, Hunter Galvanizing holds EPL number 12014. The Scheduled Activities in the EPL are the following:

- Metallurgical Activities

The Fee Based Activities are the following:

- Metal coating to a scaled of 100,000 tonnes per annum
- Metal waste generation to a scale of 100 tonnes generated or stored

3.2 Site Details and Contact Authorities

The following table outlines Hunter Galvanizing personnel responsible for activating the plan, notifying relevant authorities, and managing the response to a pollution incident.

Table 3-1: Hunter Galvanizing site details and contact authority

Item	Details
Person responsible for the PIRMP, address for site and a 24 hour contact phone number for that person	Hunter Galvanizing Pty Ltd 13 Old Punt Road, Tomago, NSW 2322 Kyle Hesketh – Plant Performance Controller Site: 02 4964 9555 Mobile: 0438 620 805
The name of a person who is authorised to act on behalf of the corporation in relation to the control of the PIRMP	Charel Vorster – Business Manager Site: 02 4964 9555 Mobile: 0401 802 562
Additional contact personnel and 24 hour contact phone number for those personnel	Danny Lozanovski – Process Controller Mobile: 0439 649 549
Street address of the storage site	13 Old Punt Road, Tomago, NSW 2322
Land title particulars of the land facility is situated	Lot 25 DP 1131688
Details of access to the site and details of any locks, gates and fences	Hunter Galvanizing site operates 24 hours per day, 7 days per week. Hunter Galvanizing’s plant and yard is completely fenced. Entry into and out of the plant is through the front gate on 13 Old Punt Road.
Early warning mechanisms and update protocols for site personnel and persons living and working in the vicinity of the facility	<p>Hydrochloric Acid Tanks – Early warning mechanisms for the hydrochloric tanks includes daily, weekly and monthly plant inspections and level indicators on tanks.</p> <p>Sodium Hydroxide – Daily, weekly and monthly plant inspections and level indicators on tanks.</p> <p>Sodium Dichromate – Daily, weekly and monthly plant inspections and level indicators on passivation tanks.</p> <p>Inhibitors – Daily, weekly and monthly plant inspections and level indicators on IBCs.</p> <p>Neighbours – Site personnel and persons working and living close by are informed and updated by phone and/or driving to the neighbouring facility. A community contact list of neighbouring industries is included in Appendix A.</p>

3.3 Authority Contact Details

If the emergency is an environmental incident which causes or threatens to cause material harm to the environment or human health, Hunter Galvanizing is to firstly call 000 if the incident presents an immediate threat. Fire and Rescue NSW (FRN), the NSW Police and the NSW Ambulance Service are the first contacts, as they are responsible for controlling and containing incidents.

If the incident does not require an initial combat agency, or after the 000 call has been made, Hunter Galvanizing is to notify the relevant authorities in the following order. The 24-hour hotline for each authority is given when available.

If the emergency is an environmental incident which causes or threatens to cause material harm to the environment or human health, the following authorities are to be informed **immediately**:

- Appropriate Regulatory Authority (ARA) is the EPA (131 555)
- The Ministry of Health (02 9391 9000)
- WorkCover NSW (13 10 50)
- Port Stephens Council (02 4980 0255)
- Fire and Rescue NSW (1300 729 579)

3.4 PIRMP Distribution

Copies of the PIRMP will be located in the following areas:

- Manager's Office
- Plant Performance Controller's Office
- Red Hazmat Box at front gate

4 Roles and Responsibilities

4.1 Roles and Responsibilities during an Environmental Incident

In the event of an Environmental Incident the following people have been allocated responsibilities to effectively co-ordinate the PIRMP.

4.1.1 MANAGER – INCIDENT RESPONSE LEADER

The Manager (or their designated relief in their absence as aforementioned) is to take overall command of the environmental incident, specifically with:

- Clean-up or containment of the incident as per the PIRMP
- Contact relevant authorities and emergency services
- Ensuring the safety of all personnel onsite
- Ensuring the correct procedures are carried out
- Direct admin personnel to the assembly area

The purpose of the PIRMP is to ensure the safety of site personnel and protection of the environment. Hunter Galvanizing employees and any onsite contractors must not perform any emergency services other than those covered in their job description and for which they have been appropriately trained and, if necessary, licensed. These may include fire-fighting, hazardous material spill clean-up, personnel rescue and any security related occurrences at the facility.

4.1.2 PLANT PERFORMANCE CONTROLLER/PROCESS CONTROLLER

The primary duties of the Plant Performance Controller and Process Controller are:

- To notify the Manager of the emergency.
- To notify all Shift Supervisors of the emergency.
- Ensure the safety of production and plant personnel.
- Ensure that Emergency Shutdown procedures have been initiated if required.
- Direct production and plant personnel not required to assist in incident response procedures to the assembly area.
- Activate emergency shutdown procedures if required.
- Assist where required with the readiness and use of the facilities fire equipment.

5 Potential Hazards, Risk Reduction Procedures and Likelihood of Event Occurring

Hunter Galvanizing completed an Aspects and Impacts Register for the site during August 2012.

The following tables outline the potential hazards, likelihood of occurrence, consequence and significance using a Qualitative Risk Matrix. The aspects that were represented by a high risk or significant risk have been included in Hunter Galvanizing's Aspects and Impacts summary in Table 5-4. The summary outlines the calculated risk, and the controls implemented by Hunter Galvanizing to control the risk.

Table 5-1: Qualitative measures of likelihood

	Level	Description
A	Almost certain	The event is expected to occur in most circumstances
B	Likely (1/year)	The event will probably occur in most circumstances
C	Moderate	The event should occur at some time
D	Unlikely (1/5 years)	The event could occur at some time
E	Rare	The event may only occur in exceptional circumstances

Table 5-2: Qualitative measures of significance/consequence of impact

	Level	Description
1	Insignificant	No injuries, low financial loss, no offsite effects
2	Minor	First aid treatment required, onsite release immediately contained, medium financial loss
3	Moderate	Medical treatment required, onsite release contained without outside assistance, huge financial loss
4	Major	Extensive injuries, loss of production capability, off-site release with no detrimental effects, major financial loss
5	Catastrophic	Death, toxic offsite release with detrimental effect, huge financial loss

Table 5-3: Qualitative risk analysis matrix

Likelihood	Significance/Consequences				
	1 – Insignificant	2 – Minor	3 – Moderate	4 – Major	5 – Catastrophic
A	S	S	H	H	H
B	M	S	S	H	H
C	L	M	S	H	H
D	L	L	M	S	H
E	L	L	M	S	S

Table 5-4: Hunter Galvanizing hazards summary of results – high or significant risks

AREA	ACTIVITY	ASPECT	IMPACTS	REGULATION COMPLIANCE	CONSEQ	PROB	RISK	CONTROL
EMS	Emergency Shutdown Procedure	Available	Inappropriate action during emergency, Licence non-compliance	POEO Act; EPL 12014	4	B	S-H	Emergency procedure updated with PIRMP, and Shut-Down and Start-Up procedures.
EMS	Hazardous Chemical Register	Completed	Work health and safety risks	WH&S Reg	4	C	S	Hazardous Chemical Register completed and updated.
Site	Acid IBCs	Storage with zinc	Explosion hazard	POEO Act; WH&S Act	5	D	S	Implement procedures to ensure zinc ingots and acid IBCs are not stored together.
Site	Hardstand Area	Damaged	Spill or leak to ground	POEO Act	3	B	S	Assess condition of hardstand area. Repair any damage with sufficient concrete to withstand trucks and traffic onsite. Keep up with housekeeping.
EPL	Soil, Groundwater, Wastewater, Air, Noise	Monitoring requirements	Noncompliance, fine, prosecution	EPL 12014	4	B	H	Site is kept up to date with monitoring, when required, for the EPL. External consultants remind with calendar, along with Hunter Galvanizing internal calendars. NATA accredited analysis of all analytes occurs as applicable.
EPL	Odour	Offensive odour at boundary	Complaints, noncompliance, fine, prosecution	EPL 12014	4	C	S	Biofilters are currently utilised to reduce odour emissions.
EMS	Retention Pond	Leak/ Spill	Contamination, prosecution	POEO Act	4	C	S	Controls include: <ul style="list-style-type: none"> • Minimum personnel in area and no chemicals stored in the area close to the Retention Pond • Hunter Galvanizing employees and subcontractors use appropriate PPE, and chemicals are not handled close to the Retention pond • Maintained Spill kits onsite
EMS	Legal and Licensing	Legal	Prosecution	POEO Act	4	B	S-H	POEO Act Amendments: <ul style="list-style-type: none"> • EPA web page reporting has been set up as per POEO Act 2011 and in use • PIRMP completed by September 2012 due date and reviewed annually Site is kept up to date with monitoring, when required, for the EPL. External consultants organise website reports, which are

AREA	ACTIVITY	ASPECT	IMPACTS	REGULATION COMPLIANCE	CONSEQ	PROB	RISK	CONTROL
								then forwarded to website admin. Monitoring completed as required for EPL.
EMS	Bulk Chemical Delivery	Storage/ Spill	Contamination, health and safety, prosecution	Environmentally Hazardous Chemicals Act 1985	4	B	S-H	Transportable bunded storage containers for IBC when onsite. Maintained Spill kits onsite. Chemical ordered such that it is delivered directly to the process when needed, and excess storage onsite is not needed.
Site	Project Construction	Spills, Falling equipment	Complaints, noncompliance, health and safety	Project Approval upcoming	4	B	S-H	Inductions completed for all contractors. Bunded areas, spill kits onsite.
Site	Bush Fire	Purlins burn, roof cave in, IBCs destroyed causing chemical spills, fibreglass melting	Injury, death, infrastructure damage, financial loss, plant shut down, contamination	EPL 12014; WH&S Reg	4	C	S	Inform fire brigade as soon as there is any sign of fire. Activate PIRMP and or Emergency Evacuation Plan if and when required.
Chemical storage	Sodium dichromate storage	Known carcinogen (hexavalent chromium)	Work health and safety and long term impacts on human and environmental health	WH&S Reg	4	C	H	Sodium dichromate is stored in a locked cabinet.

6 Pre-emptive Actions to Minimise Risk of Harm from an Environmental Incident

Hunter Galvanizing completes staff training, and monitoring and measurements on equipment to check and apply corrective actions if required. Hunter Galvanizing has safety equipment including alarm systems located throughout the plant to minimise the risks to human health and the environment.

Hunter Galvanizing have an Environmental Management System (EMS) for the site which includes documents which outline actions to minimise risk of harm and control a pollution incident including:

- Daily, weekly and monthly plant inspections
- Daily Operator Log Sheets and Process Inspections
- Environmental monitoring as per EPL
- Environmental induction and staff training
- Daily plant inspection procedure
- Monthly Caustic, Pickling and Quench tank monitoring procedure
- Quarterly tank pump-out and inspection
- Spill procedure
- Spill kit management procedure
- Liquid waste disposal procedure
- Chemical and container storage procedure
- Complaints procedures
- Induction and environmental training

6.1 Spills and Process Upsets

The following procedures are to be carried out in relation to spills and process upsets onsite. The procedures are designed to minimise the risk of harm to personnel and the environment arising from an environmental incident.

Concrete bunds are constructed around all chemical tanks such that the bund will hold the capacity of the largest tank it surrounds. A spill within the bund will be dealt with according to supervisors' instructions. Personnel are to stay away from the area.

Appropriate size removable plastic bunds are placed under all IBCs that will hold the full capacity of an IBC in the event of a leak or spill.

There is no storage of hydrochloric acid onsite. Hydrochloric acid is delivered in tankers and transferred directly to the pickling baths. Topping up of the baths is undertaken by ordering IBCs (1,000 litre containers). The IBCs are delivered to site and the hydrochloric acid is placed in the baths upon arrival. IBCs are ordered for use within a 24 to 48 hour period to avoid lengthy storage times onsite as much as is possible.

There is no storage of caustic onsite. Caustic is delivered in liquid form and transferred directly to the caustic baths as required. Topping up of the baths is undertaken by ordering IBCs (1,000 litre containers). The IBCs are delivered to site and the caustic is placed in the baths upon arrival. IBCs are ordered for use within a 24 hour period to avoid lengthy storage times onsite as much as is possible.

Spill kits are located in the Plant 1 and Plant 2 pickling areas. The Plant Performance Controller, Process Controller, Supervisors and operators based in the pre-treatment areas are required to undertake spill control training.

6.1.1 LIQUID CHEMICAL SPILL

The flow chart outlined in Figure 6-1 below is followed in the event of a liquid chemical spill.

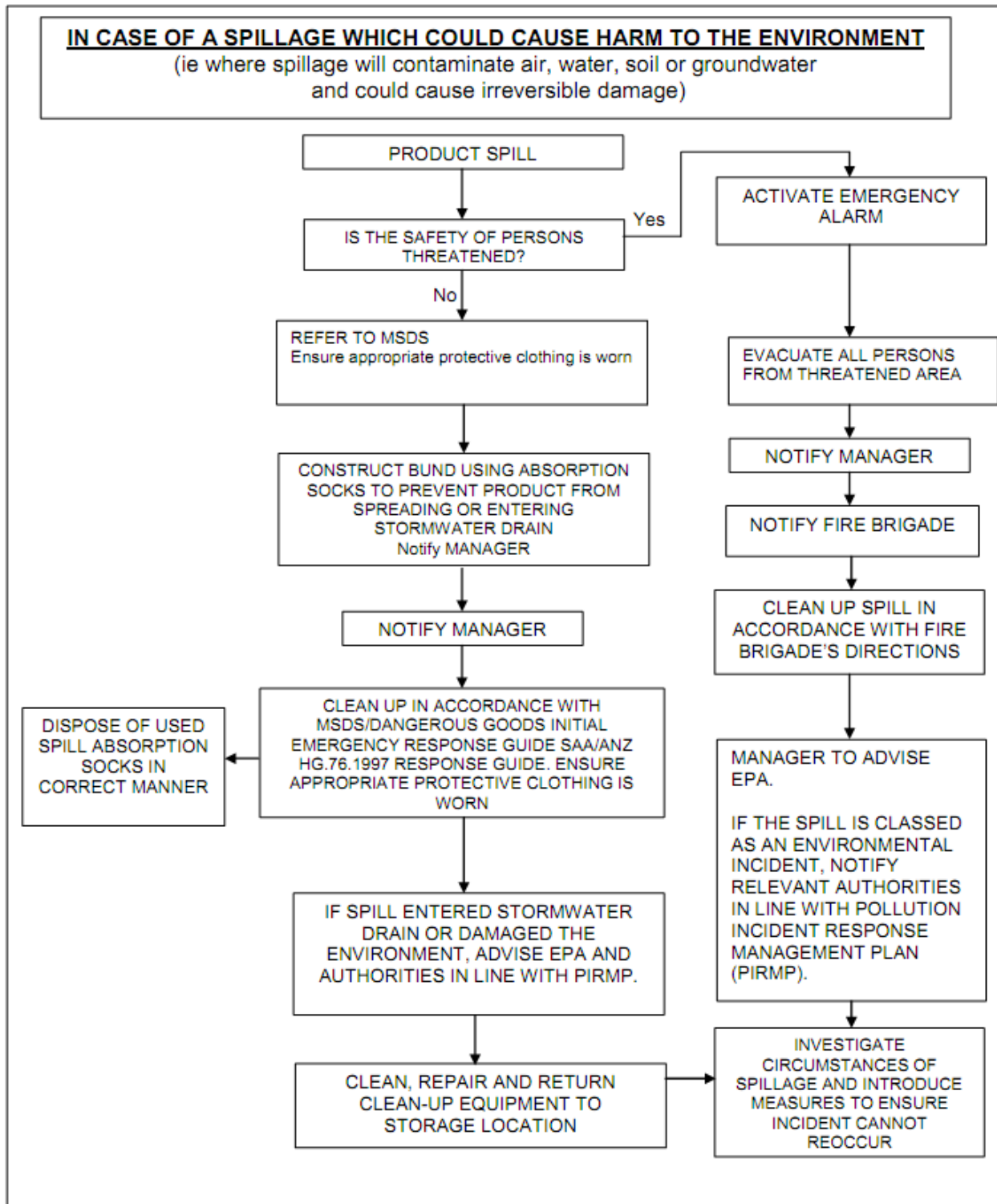


Figure 6-1: Hunter Galvanizing’s liquid chemical spill procedure flowchart

6.1.2 PROCESS UPSETS

An example of a major process upset would be a gas explosion in the kettle heating pipe, resulting in the kettle rupturing and molten zinc spill.

In the event of a major process upset where an evacuation is not required, shut the plant down (if critical safety devices have not already done so) and contact the Maintenance Supervisor or Plant Performance Controller . The Managers can help the operator to locate the problem and bring the process back under control. Once under control the plant will be inspected for possible damaged equipment, vessels, ducting or pipework. The plant will not be started until the Plant Performance Controller or appropriate Supervising Contractor has given the all clear.

If an evacuation is required, the entire plant will be shut down and evacuated in accordance with emergency procedures.

Resumption of work is permitted once the Plant Performance Controller or appropriate Supervising Contractor has declared the site safe and free from the emergency situation.

6.2 Site Monitoring and Management

6.2.1 STORMWATER MANAGEMENT

Hunter Galvanizing's site has a drainage system for the rooftops, roadways and hardstand areas. All stormwater from the site is directed to two retention ponds located near the entry and exit gates. The retention ponds reduce flooding and erosion during high rainfall events and improve the quality of water discharged from the site.

Daily environmental inspections are undertaken to identify any housekeeping issues. An industrial vacuum sweeper is used daily to remove dirt and waste which can contaminate stormwater.

6.2.2 DOMESTIC AND PROCESS WASTEWATER MANAGEMENT

The onsite sources of process wastewater are the galvanizing passivation tanks and biofilter recycle wastewater. Both biofilters are contained in concrete underground storage tanks and are sealed to prevent inflow of stormwater and spills. Both biofilters are pumped out biannually by waste contractors.

The four passivation baths are contained within concrete bunds which can hold the capacity of the tanks. Passivation liquid from the tanks are pumped out by a waste contractor and disposed offsite when required.

Spill kits are located at both Plant pickling areas in the case of a spill. All staff based in the pre-treatment area are required to undertake spill control training. A spare spill kit is also kept onsite.

Domestic wastewater from offices and amenities is directed to sewer.

6.2.3 DUST AND ODOUR MANAGEMENT

Hunter Galvanizing's site surface is comprised of concrete with no exposed soil surfaces. An industrial vacuum sweeper is used daily to remove dirt, waste and dust which may be emitted from the site.

Condition L4.2 of the EPL states that Hunter Galvanizing must not cause or permit the emission of offensive odour beyond the boundary of the premises. Two biofilters are operational to treat air from the galvanizing process. The odour contaminants from the galvanizing process are solubilised from the vapour phase into an aqueous phase on the surface of an organic medium. The biofilter recycle water is removed by waste contractors when required.

6.2.4 AIR EMISSIONS MANAGEMENT

Biofilters are operational at Plants 1 and 2 to treat a variety of biodegradable, water-soluble contaminants from the galvanizing process. Condition P1.1 of the EPL identifies the emission monitoring points in Table 6-1. External consultants conducted stationary source monitoring for a number of parameters relevant to the galvanizing process to record baseline data for the monitoring locations.

Table 6-1: Monitoring locations

EPA Point ID	Type of Discharge	Location Description
1	Discharge to air	Plant 1 Biofilter stack exhaust
2	Discharge to air	Plant 2 Biofilter stack exhaust

6.2.5 WASTE MANAGEMENT

Condition L2.1 of the EPL outline that Hunter Galvanizing shall not cause, permit or allow any waste generated by the Facility or from outside the site to be received at the site for storage, treatment, processing, reprocessing or disposal, except as permitted by the EPL.

All waste generated at the site is disposed of appropriately through municipal waste or licensed offsite disposal via waste contractors. Waste such as paper and cardboard are recycled when possible.

7 Notifications

7.1 General and media

In the event of an environmental incident it is the responsibility of the Manager to notify emergency services and people living or working in neighbouring areas.

No employee other than the Manager may communicate with external stakeholders (including the media).

7.2 NSW Fire Brigade

Hunter Galvanizing has provided firefighting equipment training sessions in conjunction with fire brigade services and or fire equipment service providers, to ensure prompt and safe responses from employees in an emergency situation.

7.3 Neighbouring Businesses and Residents

In the event of a spill or chemical release from Hunter Galvanizing or a neighbouring site, the nature of the spill will be identified and emergency services contacted. If in doubt as to the nature of the spill, clear the area of all personnel, and if required shut down the plant and evacuate the plant personnel to a safe area. Follow any instructions given by the emergency services.

Persons living and working in the vicinity are updated during an incident by phone and/or driving to the neighbouring facility. A complete community contact list including company name, site address and contact numbers is included in Appendix A.

Once this has been done, all emergency and evacuation procedures including the notification and evacuation of neighbours are the responsibility of the emergency services.

8 Inventory of Potential Pollutants

Material Safety Data Sheets for each hazardous substance are held in the following locations:

- Weigh Station
- Red Hazmat Box at Front Gate
- Plant Performance Controller's Office

Hunter Galvanizing's Chemical Inventory Register is available in Appendix B. The register details the chemical name, MSDS availability, first aid requirements, PPE required, disposal method and storage requirements.

Figure 2-2 shows the locations of each of the potential pollutants onsite. Maximum quantities of potential pollutants stored onsite include:

- Zinc ingots: Maximum 250 1-tonne blocks onsite. Stock commences depletion immediately with average stock onsite 97 tonnes in Plant 1 and 39 tonnes in Plant 2.
- Surfactant Elite Galvaclean CBM: Maximum 200 L upon delivery.
- Caustic (liquid form): 1 tonne maximum and used within 24 hours.
- Acid Inhibitor: Two (2) 440 litre drums maximum onsite after delivery. Average of one (1) drum onsite.
- Oxyacetylene Cylinders: Maximum 8 cylinders onsite.
- 4 Caustic Baths: Capacity approximately 42,000 L each of sodium hydroxide.
- 15 Acid Tanks: Capacity approximately 42,000 L each of hydrochloric acid.
- Passivation Baths: 4 baths of capacity approximately 42,000 L each.
- Zinc Galvanizing Bath/Kettle: 2 baths total. 1 bath in Plant 1 holding average of 260 tonnes molten zinc, and 1 bath in Plant 2 holding average of 280 tonnes molten zinc.
- Lead: Maximum four (4) 1-tonne packs of ingots onsite. Stock commences depletion immediately with average stock onsite 2 tonnes.
- Sodium dichromate: Supplied in powder form in 20 kg bags of average 1 bag in each plant (total of 2 bags onsite).
- EZDA: Maximum six (6) 1-tonne packs of ingots onsite. Stock commences depletion immediately with average stock onsite 2 tonnes.

9 Hunter Galvanizing's Safety Equipment

9.1 General

Hunter Galvanizing has safety equipment including alarm systems located throughout the plant to minimise the risks to human health and the environment. The Emergency Evacuation Plan is located in Appendix C. The plan identifies the locations of Hunter Galvanizing's safety equipment including fire hose reel, safety showers, fire extinguishers, and entry and exit doors.

9.2 First Aid Kits

First Aid Kits are located throughout the plant. They can be easily removed and carried to an individual to administer first aid. Locations are:

- First Aid Room in Plant 1
- First Aid Room (Mobile)
- Office
- Maintenance Shed

9.3 Emergency Safety Equipment

Major safety equipment is stored in the designated safety store room at the rear of the plant office building, which includes:

- 2 rolls Safety Tape
- 1 x Box Disposable industrial dust respirators
- 10 x filters for MSA respirators
- 2 x Safety Harness and rope
- 10 x Full body disposable overalls (chemical retardant)
- 10 x pairs long rubber gloves
- 20 x pairs general production gloves

9.4 Spill Kits

Two (2) spill kits are located in the following areas:

- Plant 1 pre-treatment area
- Plant 2 pre-treatment area

There is one (1) spare spill kit available.

Each of the spill kits contains the following:

- Long Gloves
- Disposable Bag
- Soak Pads
- Soak Socks
- Goggles
- Face Shield

9.5 Fire Extinguishers

Fire Extinguishers are located throughout the plant. The location of plant firefighting equipment is shown in Appendix C – Emergency Evacuation Plan.

Fires are classified into six classifications:

- Class A – Ordinary combustible materials; wood, cloth, paper, rubber, most plastic
- Class B – Flammable and combustible liquids
- Class C – Flammable gases
- Class D – Combustible metals

- Class E – Energized electrical equipment where the electrical non-conductivity of the extinguishing media is important
- Class F – Fire involving cooking oils and fats

Fire extinguishers are operated using the following steps:

- 1) Pull safety pin on extinguisher
- 2) Stand about 3 metres from fire
- 3) Aim fire extinguisher hose at the base of the fire
- 4) Sweep hose back and forth with short bursts until fire is extinguished

When an extinguisher has been discharged or its seal broken it is reported to the supervisor. Used extinguishers are recharged and replaced.

10 Minimise Risk of Harm – Personnel and Plant Evacuation

10.1 Plant Evacuation

A total Plant Evacuation may be required in the following circumstances:

- Major fire
- Earthquake
- Major threat from any local industry
- Bomb threat

In the event of a plant evacuation all employees, contractors and visitors must proceed if safe to the Evacuation Assembly Points. The Evacuation Assembly Points are located at the main entry gate on Old Punt Road and at the far right corner at the rear of the site. The Chief Warden will decide on which Evacuation Assembly Point staff are to assemble at based on the location of the incident and whether an assembly point is non-accessible or hazardous.

10.1.1 PROCEDURE TO ACCOUNT FOR ALL PERSONS ONSITE

In the event of a plant evacuation to ensure responsibility for all persons on site, we have the following responsibilities.

- 1) Process Controller and/or Plant Performance Controller activates the emergency alarm.
- 2) The Process Controller and/or Plant Performance Controller makes a radio announcement to all Shift Supervisors to assist with the evacuation of staff and contractors onsite to the assembly points.
- 3) Process Controller communicates to Plant Performance Controller regarding incident.
- 4) Office Supervisor to ensure all staff out of office, employee clockcards are collected, visitor logbook collected and contractor log book collected.
- 5) Yard Coordinator if safe, to alert and direct all truck driver's onsite to assembly point.
- 6) Plant 1 Manager to alert Plant 1 and Maintenance staff and direct them to assembly point.
- 7) Plant 2 Manager to alert Plant 2 staff and direct them to assembly point.
- 8) Contracting staff will be accounted for by reviewing the Contractor Log Book

10.2 Emergency Shutdown Procedure

Emergencies can come in many forms. They can include but are not excluded to:

- Earthquakes;
- Bomb threats;
- Bush fires;
- Major chemical spills;
- Major threat from any local industry; and
- Plant fires.

The person responsible for making a call on whether a scenario or situation is an emergency is the Manager. In the event that the Manager is not onsite, the second in command is either the Plant Performance Controller or Process Controller.

In the event of a Plant Evacuation or an Emergency the following procedure is to be followed by Hunter Galvanizing personnel.

- 1) To ensure responsibility to all persons on site in the event of a plant evacuation, the following is implemented:
 - Process Controller and/or Plant Performance Controller activates the emergency alarm.
 - The Process Controller and/or Plant Performance Controller makes a radio announcement to all Shift Supervisors to assist with the evacuation of staff and contractors onsite to the assembly points.
 - Process Controller communicates with Plant Performance Controller regarding the incident(s).
 - Office Manager to ensure all staff are out of the premises, employee time cards are collected, visitor log books are collected and contractor log books are collected;
 - Yard Coordinator, if safe, to alert and direct all truck drivers on site to the assembly point;
 - Process Controller to account for all staff in Plant 1;
 - Plant Performance Controller to account for all staff in Plant 2;
 - Plant Performance Controller to account for all maintenance and contracting staff;
 - Contracting staff and visitors will be accounted for by reviewing the contractor and visitor log books.
- 2) If safe to do so, the Plant Performance Controller or Process Controller will be asked by the Manager to shut down electricity and natural gas outside the plant at the main.
- 3) If safe to do so, the Plant Performance Controller will turn off oxyacetylene tanks at the bottle. Once everyone has been accounted for the Manager will then provide instructions to staff based on the circumstances of the emergency.
- 4) The Manager will call the Company Director, Allan Morton, to inform him that the emergency evacuation has occurred.
- 5) The Manager will be instigating the Pollution Incident Response Management Plan, if applicable. In the Manager's absence the Plant Performance Controller will instigate the PIRMP.
- 6) The situation will continue to be treated as an emergency by all staff until either the Director or the Manager make the call that the emergency has been downgraded.

10.3 Personnel Injury

If it is a personnel injury, this information must contain the following:

- Name of injured worker
- Job title
- Extent of injury
- Date and time of injury
- Circumstances surrounding injury
- Basic causes
- What initial steps have been taken to prevent future injuries

The flowchart below is followed for any personnel injury onsite.

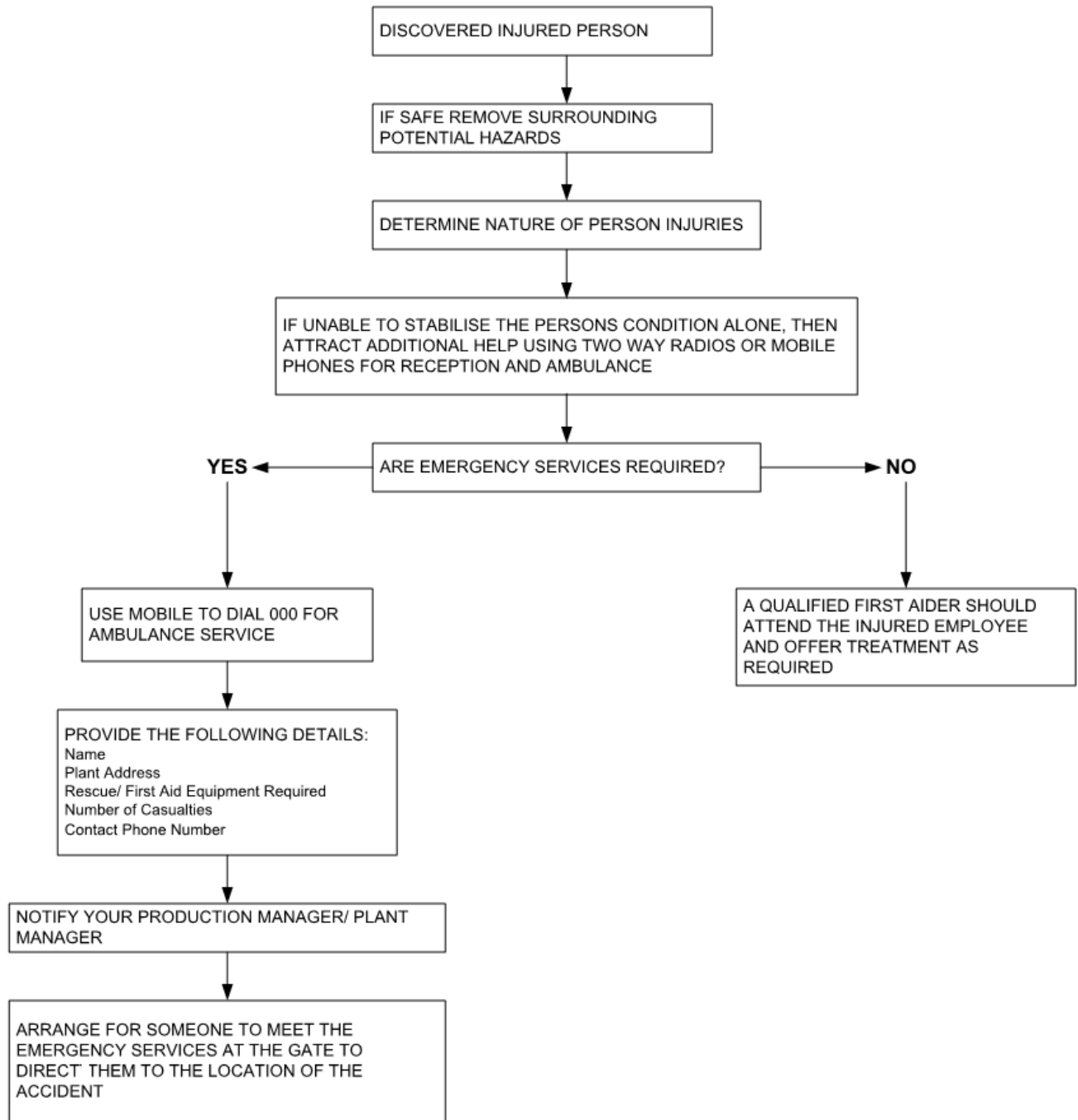


Figure 10-1: Personnel injury response flowchart

11 Procedure for Terminating an Emergency

It is the responsibility of the Manager or their designate to declare the site safe to return to normal operation.

- All work permits issued prior to the emergency are immediately cancelled, and require reviewing.
- The extent of damage to equipment, utilities and raw materials must be established and methods for rectification discussed with all relevant employees. A verbal 'ALL CLEAR' must be given by the Manager once they are satisfied that the emergency has been defused.
Critical Task Procedures for starting process equipment must be followed.

12 Emergency Communication

Effective communication is vital during an emergency situation. The communications equipment are listed below.

12.1 Telephone

The telephone system will be mobile, as the landline will not operate once the main power has been turned off.

12.2 Field Two-Way Radios

The two-way radios may be used in any area. Two-way radios and mobile phones must be carried at all times during an emergency whilst fighting fires, manning other equipment or searching for injured personnel on site.

13 Media and Public Relations Debriefing

No employee other than the Manager or his/her delegate may communicate with news media in the event of an environmental incident. Hunter Galvanizing will ensure that the spokesperson is competent and will not disclose any information which may destroy public confidence and exacerbate the incident.

14 Investigations

Hunter Galvanizing will co-operate with relevant government authorities, such as WorkCover and the EPA, should there be a statutory investigation required following an emergency situation at the site. Hunter Galvanizing will ensure no evidence is interfered with, moved or destroyed and that no repairs (other than those required to control the emergency) proceed without approval from the investigating authority.

15 Staff Training Program

Plans are to include details of the staff training program on implementing the plan, including frequency of training and how training records are kept. The PIRMP training could include toolbox talk/classroom/practical exercises.

The following table is an example of the training records format in which Hunter Galvanizing records employees that have undertaken training in the procedures of the site relevant to the PIRMP as noted, and the PIRMP itself.

Employee	Type of Training Completed	Duration of Training	Provider of Training	Date	Signature of Trainee
	Spill Response Procedure Waste Disposal Procedure Chemical Storage, Recycling or Disposal Procedure PIRMP activations procedures Emergency evacuation drill				

16 PIRMP Assessment and Updates – Testing and Review of PIRMP

16.1 Testing of PIRMP

Hunter Galvanizing will test and assess the effectiveness of the PIRMP prior to 1 September 2012 to ensure the information is up to date and the procedures are capable of being implemented. The annual tests will be carried out:

- annually on or before February; and
- within 1 month of any pollution incident to which Hunter Galvanizing's EPL relates.

The test date for the PIRMP will be on or before February annually.

16.2 Review of PIRMP

The PIRMP will be reviewed annually on or before February each year. The assessment will check all PIRMP procedures, safety equipment and alarms, and consider any new site processes. The outcomes of the assessment will be reviewed, and the plan updated and communicated to staff by the Manager. The review will be carried out:

- annually on or before February; and
- within 1 month of any pollution incident to which Hunter Galvanizing's EPL relates.

The PIRMP is a living document and updates will be completed by as necessary by the Manager, and changes recorded where date of reviewing is recorded.

Limitations

Scope of Services and Reliance of Data

This Pollution Incident Response Management Plan ('the report') has been prepared in accordance with the scope of work/services agreed, between MJM Environmental Pty Ltd (MJM) and the Client. In preparing the report, MJM has relied upon data and other information provided by the Client and other individuals and organisations. Except as otherwise stated in the report, MJM has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report ("conclusions/summary") are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. MJM will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to MJM.

Study for Benefit of Client

This report has been prepared for the exclusive benefit of the Client and no other party. MJM assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with in this report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in this report (including without limitation matters arising from any negligent act or omission of MJM or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in this report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own inquiries and obtain independent advice in relation to such matters.

Other Limitations

To the best of MJM's knowledge, the proposal presented and the facts and matters described in this report reasonably represent the Client's intentions at the time of printing of the report. However, the passage of time, the manifestation of latent conditions or the impact of future events (including a change in applicable law) may have resulted in a variation of the Proposal and of its possible environmental impact. MJM will not be liable to update or revise the report to take into account any events or emergent circumstances or facts occurring or becoming apparent after the date of the report.

Appendix A Community Contact List

Community Contact List

Company	Contact	Address	Contact No.
ATB Morton	Allan Morton, Brian Morton (Directors)	9 Old Punt Road, Tomago NSW 2322	02 4961 6822
ATB Mechanical Repairs		9 Old Punt Road, Tomago NSW 2322	02 4961 6822 0412 511 224
Ampcontrol	Paul Beletich (Manager)	21 Old Punt Road, Tomago NSW 2322	02 4961 9000
PKK Mining Equipment		13b Old Punt Road Tomago NSW 2322	02 4964 5400
Bis		13b Old Punt Road Tomago NSW 2322	02 4035 3466
Tomago Aluminium		638 Tomago Road Tomago NSW 2322	02 4966 9669
Rediserv	Bob Masson	11 Old Punt Road, Tomago NSW 2322	02 4961 6822
CIA Precast	Tony Robinson	3/21 Old Punt Road, Tomago NSW 2322	02 4964 9900

Appendix B Chemical Inventory Register



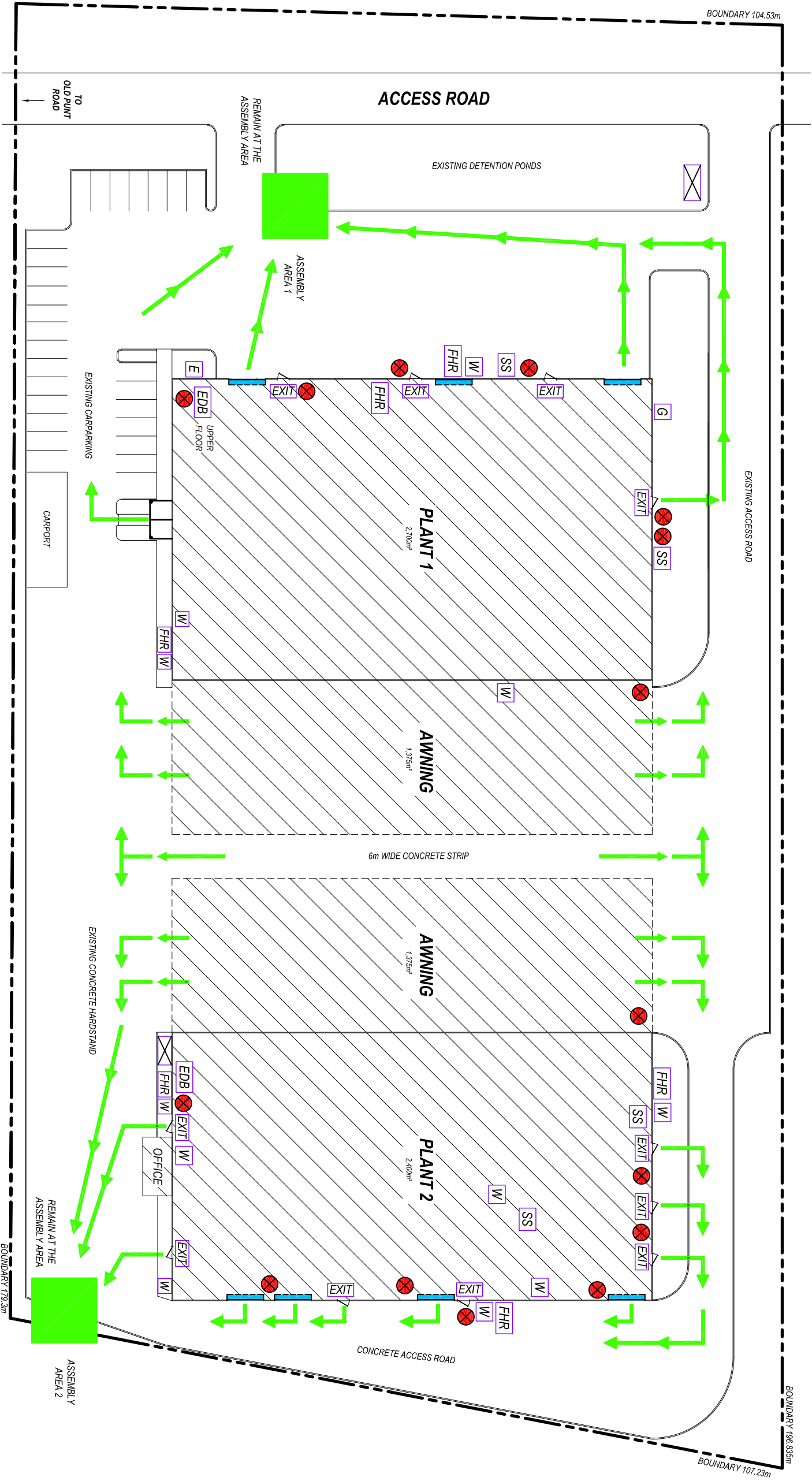
Hunter Galvanizing HAZARDOUS SUBSTANCE REGISTER

THE FOLLOWING DETAILS ARE FOR GUIDANCE ONLY - VERIFY INFORMATION BY VIEWING THE CURRENT MSDS

SUBSTANCE/PRODUCT	MSDS FILED YES/NO	FIRST AID REQUIREMENTS				PPE REQUIRED	Flammable	DISPOSAL (AS PER MSDS)	SPECIAL STORE/SIGN REQUIRED	RISK: HIGH, MED, LOW	USERS AWARE OF RISKS
		SWALLOW	EYES	SKIN	INHALED						
SPECIAL HIGH GRADE (SHG) ZINC	YES	M	N/A	C	I	4,1,6	Vi, V	Recycle	BB	LOW	YES
LEAD	YES	O	O	O	O	1,2,3,6	Vi, V	Return to Manufacturer	BB	LOW	YES
EZDA – ZINC ALLOY	YES	O	L	L,F,J	I	5,3,1,4,6	Vi, V	Recycle	BB	LOW	YES
HYDROCHLORIC ACID	YES	E	L,J	B,F,J	I	1,2,3,4,5,6,7	V, Vii	Waste Disposal	BB	HIGH	YES
SODIUM HYDROXIDE	YES	E	L,J	L,F,J	I	1,2,3,4,5,6,7	V, Vii	Waste Disposal	BB	HIGH	YES
HCl Acid Inhibitor	YES	M	L,J	C,F,J	I	1,2,3,4,6	V, Vii	Waste Disposal	BB	LOW	YES
Galvaclean CGM	YES	M, D	L,J	B,F,J	I,	1,2,3,4,6	Vi,Vii	Waste Disposal	BB	LOW	YES
Sodium Dichromate	YES	M	L,J	B,J	I,J,GF,H	1,2,3,4,5,7	Vii, V	Waste Disposal	BB	HIGH	YES

FIRST AID		PPE	FLAMMABILITY
A = Rinse Mouth	I = Breath fresh air	1 = Overalls	(i) = Flammable
B = Rinse with Water	J = Seek medical attention	2 = Safety Shoes	(ii) = Highly Flammable
C = Wash with Soap and Water	K = Bandage with sterile dressing	3 = Gloves	(iii) = Combustible
D = Induce Vomiting	L = Flood with water for at least 15 mins	4 = Safety Glasses helmet / shield	(iv) = Supports combustion of materials which DO NOT normally burn in air
E = Do NOT induce Vomiting	M = Give water to drink	5 = Respirator	(v) = Remove all possible ignition sources
F = Remove contaminated clothing	N = Do NOT give anything to drink	6 = Wash hands after use	(vi) = Non Flammable
G = Apply artificial respiration (If breathing has stopped)	O = Unlikely	7 = Well Ventilated area	(vii) = Keep area well ventilated
H = Remove from contaminated area		STORE/SIGN REQUIREMENTS: AA = Hazardous Substance Container BB = Shed/Compound	

Appendix C Emergency Evacuation Plan



	FIRE HOSE REEL		FIRE EXTINGUISHER
	WATER SERVICE		EXIT DOORS
	MAIN WATER VALVE		MAIN ENTRY / EXIT DOORS
	SAFETY SHOWER		ELECTRICAL DISTRIBUTION BOARD
	MAIN ELECTRICAL BOX		EXIT PATH
	GAS VALVE - MAIN - PLANT 1 & PLANT 2		

HUNTER GALVANIZING

13 OLD PUNT ROAD, TOMAGO

EMERGENCY EVACUATION PLAN

AUGUST 2007

