

PIRMP

POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN

Galserv Galvanising Coffs Harbour

Galserv[®]

Business Management System

POLLUTION, INCIDENT, RESPONSE MANAGEMENT PLAN GALSERV COFFS HARBOUR (PIRMP)

1. PURPOSE

The purpose of this procedure is to ensure that Galserv Galvanising Coffs Harbour comply with the requirements of the Protection of the Environment Legislation Amendment Act (2011) to prepare and implement an effective pollution incident response management plan.

2. SCOPE

This procedure relates only to Galserv Galvanising Coffs Harbour site located at 45-47 Wingara Drive Coffs Harbour 2450.

3. INTRODUCTION

Site Description

Table 1 describes the subject site. The site is located approximately 1.5km from Coffs Harbour Base Hospital.

Table 1 Site Details

Item	Details
Site Name	Galserv Galvanising Coffs Harbour
Site Owner	Nepean Building & Infrastructure
Site Address	45-47 Wingara Drive, Coffs harbour 2450
Local Government Authority	Coffs Harbour City Council
Site Elevation	3 metres

The location of the site in a regional context is shown in Figure 1, while that of a local context is shown in Figure 2. The local area surrounding the site is clearly seen in the subject site aerial photograph (Figure 3).

The site extends from Wingara drive down Fraser drive and is predominantly rectangular in shape, although it tapers in on the south west side. The main processing areas of the galvanising plant extend along the southern side of the factory, with steel storage areas located in the yard area of the site. The site is bordered by other businesses in the industrial area, which can be seen in Figures 2 & 3

Table 2 describes the neighbours in close proximity to the site, provided to assist in the effective communication of issues which may extend past the site boundary.

Neighbouring Land Uses

The site is located in an industrial area. The land uses surrounding the site include:

- To the North: Bunnings.
- To the South: Palliative Care
- To the South: Charter Transport
- To the South: A1 Engine Tuning
- To the East: PDF Foods
- To the West: Coffs Harbour Demolitio

Table 2 Details of Neighboring Properties

Community Contact List				
		Company	Address	Contact No.
1	North	Bunnings	14 Wingara Dr, Coffs Harbour, NSW 2450	Ph 02 6659 1111
2	South	Palliative Care	28 Wingara Dr, Coffs Harbour, NSW 2450	Ph 02 6650 0528
3	South	Mike Blewitt Ford Detailer	15 Wingara Dr, Coffs Harbour, NSW 2450	Ph 02 6651 1891
4	South	A1 Engine Tuning	1/13 Wingara Dr, Coffs Harbour, NSW 2450	Ph 0412 960 705
5	East	PFD Foods	12 Wingara Dr, Coffs Harbour, NSW 2450	Ph 02 6648 7718
6	West	Coffs Harbour Demolitions	Lot 52, 10 Fraser Dr, Coffs Harbour NSW 2450	Ph 02 6652 3123
7	North East	Barry Smith Engineering	21 Wingara Dr, Coffs Harbour NSW 2450	Ph 02 6652 2310
8	South	BISCO	20 Cook Drive, Coffs Harbour 2450	Ph 02 6652 6294

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Figure 1: Regional Context of Proposed Site
Source: Google Earth.

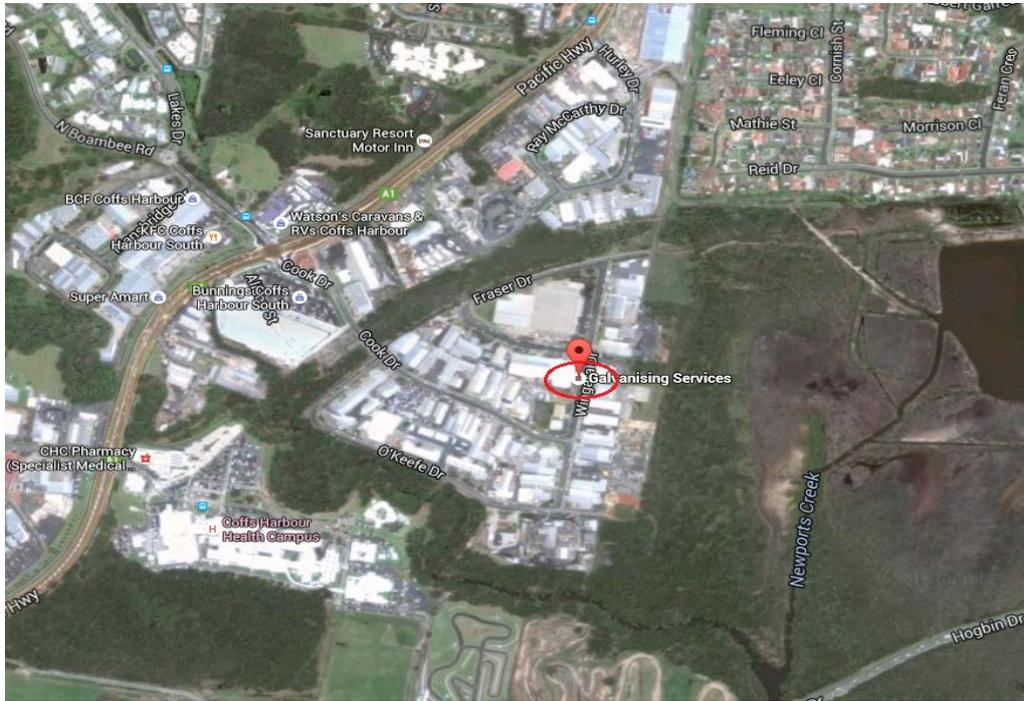


Figure 2: Local Context of Site Source: Google Earth



Figure 3: Aerial photo showing locations of neighbouring properties
Source: Google Earth



Proximity to Local Sensitive Receptors

A. Ecological receptors:

- The underlying groundwater;
- Newport Creek approximately 400 metres to the south

B. Human Receptors:

- Approximately 393 metres from the north east boundary residential area.
- Childcare Centre approximately 1.02 kilometres
- Coffs Harbour Base Hospital approximately 708.67 metres

Key Activities & Processes

HOT DIP GALVANISING

Hot dip galvanising is the process of coating iron, steel or ferrous materials with a layer of zinc, by passing the metal through a molten batch of zinc at a temperature of around 860°F (460°C), which further reacts with carbon dioxide (CO₂) to form zinc carbonate (ZnCO₃), a usually dull grey, fairly strong material that stops further corrosion in many circumstances and protects the steel from the elements. Galvanised steel is widely used in applications where rust resistance is needed, and can be identified by the crystallisation patterning on the surface, often called a spangle.

Hot dip galvanising protects steel and ferrous material from corrosion by providing a tough metallic zinc envelope, which completely covers the steel surface and seals it from the corrosive action of its environment. The galvanised coating provides outstanding abrasion resistance. Where there is damage or minor discontinuity in the sealing coat of zinc, protection of the steel is maintained by the cathodic action of the surrounding galvanised coating.

Metallic zinc is strongly resistant to the corrosive action of normal environments and hot dip galvanised coatings therefore provide long-term protection for steel. By contrast, most organic paint coatings used on steel need frequent renewal and when coatings are breached, corrosion begins at the exposed area of steel, spreading rapidly beneath the coating film.

Pre-treatment can include treatment of the metal with an alkaline degreasing solution, an acid pickling solution, water rinse, and a pre-flux solution. The pre-flux solution is usually comprised of zinc ammonium chloride (ZnCl₂·3NH₄Cl), and is used to promote the zinc-metal bond. After pre-treatment, the metal is immersed in molten zinc followed by a quench bath.

Figure 3-4 shows a basic galvanizing flow diagram and expected emission points.

GALVANISING PREPARATION

It is critical to ensure that any item to be hot dipped galvanised is completely clean in order for the molten zinc to form a sound and complete metallurgical bond with the item. To ensure the material surface is completely clean the material is passed through a pickling process prior to entering the galvanising kettle. In this process any scale, rust, oil, paint and other surface contaminants are carefully removed from the steel by suitable preliminary treatment and subsequent acid cleaning or pickling in sulphuric or hydrochloric acids, followed by rinsing. Rolled steel surfaces covered by heavy mill scale may require abrasive blast cleaning prior to acid cleaning.

FLUXING

The acid-cleaned steel article is immersed in a flux solution, usually 30% zinc ammonium chloride with wetting agents, maintained at about 65°C. The flux solution removes the oxide film which forms on the highly reactive steel surface after acid cleaning, and prevents further oxidation before galvanising. The work is then dried ready for galvanising.

GALVANISING

On immersion in the galvanising bath the steel surface is wetted by the molten zinc and reacts to form a series of zinc-iron alloy layers. To allow formation of the metallurgical bond the work remains in the bath until its temperature reaches that of the molten zinc, in the range 445°C to 465°C. The work is then withdrawn at a controlled rate and carries with it an outer layer of zinc which solidifies to form the relatively pure outer zinc coating.

The period of immersion in the galvanising bath varies from several minutes for relatively light articles, up to half an hour or longer for major structural members.

The resulting galvanised coating is tough and durable, comprising relatively pure zinc and zinc-iron alloy layers bonded metallurgically to the underlying steel, completely covering the article externally and internally, providing unmatched resistance to abrasion. The fact that hot dipped galvanising provides internal as well as external protection is a major advantage compared to normal paint only systems.

Chemical Storage and Handling

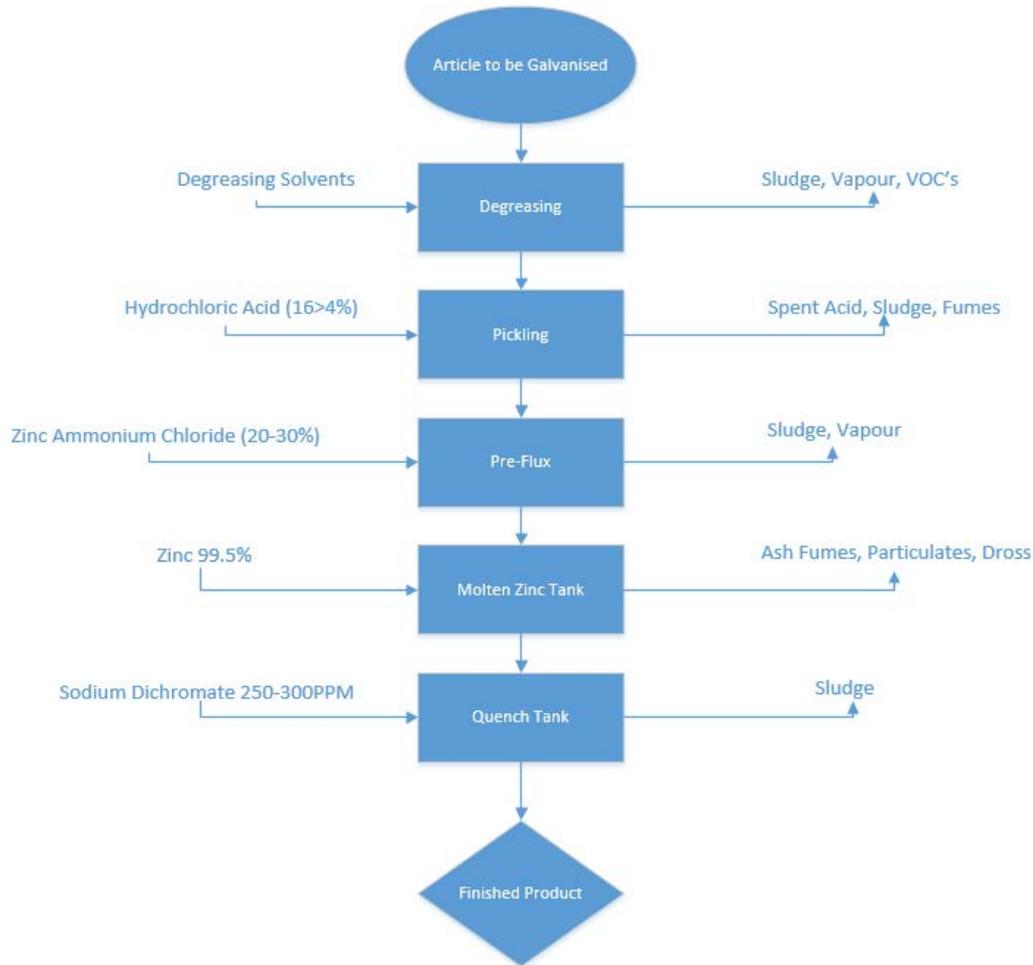
A number of chemicals are required for the galvanising process and these are stored and handled on site. Some of the chemicals required for the process do not require storage at the site and these chemicals are delivered, as required, to site by bulk tanker and transferred directly to the appropriate process chemical tank.

Typical Emissions

Galvanising generally produces emissions to air as well as waste. Hydrochloric acid fumes may be emitted from process tanks, while ammonia and ammonium chloride emissions to air can occur from the immersion of steel into the galvanizing bath.

Waste liquids may be generated from spent pre-treatment solutions and from quenching activities after galvanising. Waste liquids are controlled on site and transferred off-site via approved waste disposal contractors (i.e. no emissions are expected). The galvanising process also generates solid wastes. Solid wastes include a zinc oxide ash that is periodically removed from the surface of the galvanizing bath and zinc iron alloy dross removed from the bottom as well as solids in spent solutions and wastewater treatment sludge.

Figure 4: The basic galvanising process steps and likely emission points



4. HAZARD & RISK IDENTIFICATION

The following documents have been used to assist in the preparation of this PIRMP:

- EPA Guidelines – Preparation of Pollution Incident Response Management Plans
- Protection of the Environment Legislation Amendment Act 2011 (POELA Act)
- Emergency Control Procedure (Coffs Harbour Site)
- Dangerous Goods Manifest

Workers and others may be exposed to a range of hazards or risks in the course of their daily work activities, the risks from these work activities are identified and assessed and if assessed as unsafe must be eliminated or minimised so far reasonably practicable. A risk assessment is used in the identification and assessment of the hazards or risks to safety, health and environment in the workplace; and development of options implementing the best methods of controlling and eliminating these risks, the process is outlined as below.

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	Consequence				
People	Report Only - Injuries or ailments not requiring medical treatment.	Minor injury or First Aid Treatment Case.	Serious injury requiring hospitalisation or medical treatment.	Multiple serious injuries.	Death or multiple life threatening injuries.
Reputation	Internal Review	Scrutiny required by internal committees or internal audit to prevent escalation.	Scrutiny required by external committees or ACT Auditor General's Office, or inquest, etc.	Intense public, political and media scrutiny. E.g.: front page headlines, TV, etc.	Assembly inquiry or Commission of inquiry or adverse national media.
Environment	No lasting effect. Low level impacts on biological or physical environment. Limited damage to minimal area of low significance	Minor effects on biological or physical environment. Minor short-medium term damage to small area of limited significance	Moderate effects on biological or physical environment but not affecting the ecosystem function. Moderate short to medium term impacts.	Serious environmental effects with some impairment to the ecosystem With medium to long term impacts	Long term, widespread effects on the environment
Business Process & Systems	Minor errors in systems or processes requiring corrective action, or minor delay without impact on overall schedule.	Policy procedural rule occasionally not met or services do not fully meet needs.	One or more key accountability requirements not met. Inconvenient but not client welfare threatening.	Strategies not consistent with Nepean's agenda. Trends show service is degraded.	Critical system failure, bad policy advice or ongoing non-compliance. Business severely affected.
Legal	Low-level legal issue	Minor legal issues. Non-compliances and breaches of regulation.	Serious breach of regulation with prosecution and/or moderate fine possible	Major breach of regulation. Major litigation.	Significant prosecution and fines. Very serious litigation / class action
Financial	<\$2K	\$2,001 to \$25K	\$26K to \$100K	\$101K to 500K	\$500K
Manufacturing and Design	No Effect to the Operation of the Business (Typically Ex Stock Standard Products)	Impact Minimal with some bespoke fabrication (i.e. Standard Handrail Pre-Fab and Grating Fab)	Increase costs likely to comply with requirements (Can be catered for with vigilance)	Moderate Strain to the operations (Outside current capabilities or capacity)	Significant strain to the operations due to system failure
	Negligible	Minor	Moderate	Major	Extreme

Likelihood	Is expected to occur in most circumstances	5	Certain	M	H	H	E	E
	Will probably occur	4	Likely	M	M	H	H	E
	Might occur at some time in the future	3	Possible	L	M	M	H	E
	Could occur but doubtful	2	Unlikely	L	M	M	H	H
	May occur but only in exceptional circumstances	1	Rare	L	L	M	M	H

RISK CONTROL

Risk control is a method of managing the risk with the primary emphasis on controlling the hazards at source. For a risk that is assessed as "high", steps should be taken immediately to minimize risk of injury. The method of ensuring that risks are controlled effectively is by using the "hierarchy of controls". The Hierarchy of Controls are:

Order No.	Control	Example
Firstly	Eliminate	Removing the hazard, eg taking a hazardous piece of equipment out of service.
Secondly	Substitute	Replacing a hazardous substance or process with a less hazardous one, eg substituting a hazardous substance with a non-hazardous substance.
Thirdly	Isolation	Isolating the hazard from the person at risk, eg using a guard or barrier.
Fourthly	Engineering	Redesign a process or piece of equipment to make it less hazardous.
Fifthly	Administrative	Adopting safe work practices or providing appropriate training, instruction or information.
Sixthly	Personal Protective Equipment	The use of personal protective equipment could include using gloves, glasses, earmuffs, aprons, safety footwear, and dust masks. NOTE: This is a last resort control and should be for interim periods only, while higher level control is developed or implemented.

Hazard Identification

Gas Storage and Handling

LPG gas is used on site for the galvanising process and is stored in two 22250 litre tanks, the gas is also used and handled for the operation of site forklifts. There are additional minor storages of other

gases associated with maintenance type activities. The risk of gas leaks or explosions have been assessed as low to moderate.

Chemical Storage and Handling

For those chemicals that require storage on site, the chemical storage and processing areas comply with the relevant legal requirements and are maintained with the minimum storage quantities required to maintain operations.

Where bulk liquid chemicals are stored in the process tanks within the galvanising buildings, the tanks are located within banded areas so that any spills or drips from the tanks can be contained. Where drums and other packaged chemicals are stored, all liquid chemicals in drums are stored on spill control pallets.

Other measures implemented where chemicals are stored and handled include:

- Equipment for the clean-up of reasonably foreseeable spills or leaks of chemicals are kept on site and readily accessible;
- Placarding and signage for the site includes "HAZCHEM" outer warning placards and placards for all of the bulk processing tanks and packaged chemical storage areas.
- Safety Data Sheets (SDS) for all substances stored and handled on the site are obtained and maintained up to date.
- All personnel responsible for chemical storage and handling activities are trained in the safe storage and handling of chemicals.

Chemical Deliveries and Disposals

Chemical deliveries to the site take place in a couple of different ways. Some chemicals may be delivered to site in packages, i.e. drums, intermediate bulk containers (IBC's) or in solid form in the form of 25kg bags.

There are specific bulk deliveries of process chemicals that are carried out in a designated chemical transfer area where there is a provision for emergency spill containment.

The areas used for bulk chemical solution deliveries and disposals are a dedicated transfer area.

Waste Storage

The site generates solid process waste that may require interim storage on site. The solid waste in this instance is stored in undercover to prevent loss of the contents to the environment.

Emergency Response Equipment

The site maintains the following emergency response equipment and has the ability to engage external spill control assistance for example Transpacific Industries.

- Spill kits
- Fire extinguishers
- Fire hose reels
- Water pumps
- Fire Blankets

Inventory of Potential Pollutants – including maximum storage quantities

Table 3

Galvanising

PRODUCT NAME	CLASS	UN No	QUANTITY
SODIUM HYDROXIDE (CAUSTIC SODA)	8	1823	1X18,000L 1.5% 10 > 12% PER VOLUME
HYDROCHLORIC ACID	8	1789	5X18000L 16 > 4%
ZINC AMMONIUM CHLORIDE	8	1759	33,800L 26.5%
MOLTEN ZINC	N/A	N/A	190 TONNES
SODIUM DICHROMATE	6.1	3087	33,800L 250 >300 PPM
OXY	25	1072	5X8.9 SM3
ACETYLENE	2	1001	2X7.08 SM3
LPG	2	1075	1X18Kg

Manufacturing

PRODUCT NAME	CLASS	UN No	QUANTITY
OXY	2	1072	1X8.9 SM3
LPG	2	1075	4X45 Kg, 2X18Kg
LPG	2	1075	2X10.32Kg FORKLIFT
ARGO SHIELD	2	1956	1X227.2 SM3
DIESEL	3	1202	1X100L IN FORKLIFT

Yard

PRODUCT NAME	CLASS	UN No	QUANTITY
ARGO SHIELD	2.T	1956 1006	1X227.2 SM3 1X 16 PACK
ACETYLENE	2.5E	1001	2X7.08 SM3
OXY	2.5	1072	2x 16 PACK 7x G BOTTLES
CUT BACK	2.W	1999	200 LITRES
SODIUM HYDROXIDE SOLID	8	1823	1 TONNE
ZINC AMMONIUM CHLORIDE	8	1759	1 TONNE
AMMONIUM CHLORIDE	9.2	9085	1 TONNE
AMMONIUM AQUEOS	8	2672	800 LITRES

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Gas Yard

PRODUCT NAME	CLASS	UN No	QUANTITY
LPG PROPANE	2	1075	2X 22250L

5 Definitions

A person has a duty to notify when – while carrying out any activity – the person becomes aware that an event has happened that **causes or threatens to cause material environmental harm**.

Emergency incidents such as those involving:

- The release of contaminants in storm water
- Hazardous materials from fires
- Spillage of chemicals that require involvement of emergency response personnel are examples.

Material Environmental Harm includes ACTUAL OR POTENTIAL harm to the health or safety of human beings or to ecosystems –

- a) that is not trivial or negligible in nature, extent or context; or
- b) that causes actual or potential loss or damage to property of an amount of, or amounts totalling, more than \$10,000; or
- c) that results in costs of more than \$10,000 being incurred in taking appropriate action to
 - i. Prevent or minimize the harm; and
 - ii. Rehabilitate or restore the environment to its condition before the harm.

Notification Procedure – Neighbours

The nature and direction of the incident will determine the most appropriate neighbours to be notified. In the event of a pollution incident, the Office warden will be the person responsible for notifying any affected neighbours. In their absence, the responsibility will sit with the Site Foreman.

Notification of industrial neighbours will be conducted via telephone followed by door knocking if contact cannot be made via telephone. All affected residential neighbours will be contacted in person.

Immediate Incident Response Procedure

If evacuation warrants following a pollution incident, site emergency control organization will assume the responsibility for site evacuation.

Management Procedure

- The **GENERAL MANAGER** is responsible for notifying the authorities in order as listed below.
- If the General Manager is not available or immediately contactable, the **SITE SUPERVISOR** shall be the person to take the responsibility for notifying the authorities immediately.
- In the event that the GM or Site Supervisor are both not available and contactable, the **SITE OFFICE WARDEN** shall be the person to take the responsibility for notifying the authorities immediately.
- Upon receipt of information regarding any pollution related incident on site, the **OFFICE WARDEN** or **SITE SUPERVISOR** must notify the **GENERAL MANAGER IMMEDIATELY**.
- **Last resort**, the responsibility to call the relevant authorities will reside with the **MAINTENANCE LEADING HAND** in the event the GM, the Site Supervisor and the Site Office Warden have not been contactable.
- In the event of a major incident on site, **ONLY** the General Manager or his delegate, shall be authorised to make any statements to the media or public.

Table 4 Notification Template for Management Team

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SITE MANAGEMENT TEAM		AUTHORITIES TO NOTIFY OF POLLUTION INCIDENTS
General Manager	Phone: 0429 986 859	Environment Protection Authority (EPA) Tel: 131 555
SITE SUPERVISOR	Phone: 0409 952 192	Public Health Unit (Coffs Harbour Base Hospital) Tel: (02) 6656 7000
WHS COORDINATOR	Phone: 0447 477 107	WorkCover NSW Tel: 131 050
SITE FOREMAN	Phone: 0419 129 831	Coffs Harbour Council Tel: (02) 6648 4000
MAINTENANCE LEADING HAND	Phone: 0438 383 091	Fire and Rescue NSW Tel: 000

Table 5: Other Useful Agency Contact Detail

ORGANISATION	ROLE	EQUIPMENT	CONTACT PERSON	PHONE NO
Fire Brigade	First Response	Booms Hazmat Trailer Access to Data-Chem	Station Officer	Emergency- 000 Non-Emergency- Local Stations- Coffs Harbour 6651 6891 Sawtell 6653 1422
Environment Protection Authority (EPA)	Pollution Chemical Info	Laboratory Facilities Limited Staffing	Waste Unit	24 hour hotline 131 555 Coffs Harbour 6651 5946
Roads and Maritime Services	Protection of Ocean Waters	Responsibility Only		131 256

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NSW Office of Water	Protection of non- tidal waters	Nil		Coffs Harbour 6653 0100 Grafton 6640 2000 After Hours 66424073
Department of Primary Industries	Fish Kills Threats To habitats	Wollongbar Laboratory	Biologist Fisheries Inspector	1800 043 536
SES	Major Emergencies	Sand Bagging Related Operations	Hotline	1800 043 536
Coffs Council	First Response	Booms Pumps Sand Heavy Machinery Absorbents Laboratory	Security Manager Health Waste Services Coordinator Team Leader Environment Works Overseer	66484000
Ministry of Health	Public Health Advice	Laboratory Facilities Base Hospital		6588 2946 6656 7000
Poisons Information	Advice Concerning Human poisoning		Hotline	131 126
Coffs Harbour Environmental Laboratory			Laboratory Manager	6648 4460 6648 4463
Electricity Supplier- Essential Energy			Hotline	132 080

Employee Procedure

Table 6 Notification Template for Site Employees

Safety First	<p>Care for workers - Evacuate Area,</p> <ul style="list-style-type: none"> Care for the Environment – e.g. Contain spills, put out fires; ONLY if safe to do so 		
Treatment	Provide First Aid or Medical Treatment, if required		
	Dr: Gerard McAfee	Phone: 02 66485 222	Dr Address: 42-44 Gordon St, Coffs Harbour NSW 2450
	Ambulance:	000	
	Hospital: Coffs Harbour Base Hospital	Phone: 02 6656 7000	Hospital Address: 345 Pacific Highway, Coffs Harbour 2450
	<ul style="list-style-type: none"> Stop the source of the spill immediately if it is safe to do so 		

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Minor Spills	<ul style="list-style-type: none"> • Contain the spill (Spill Kits) and control its flow from the site • Report the spill to the General Manager or Site Supervisor if pollution has escaped the site or if the spill has potential to harm the environment • Be safe rather than sorry; Report any pollution incident no matter how small, to the Manager 		
Major Spills	<ul style="list-style-type: none"> • For large-scale hazardous spills call NSW Fire and Rescue immediately on 000 zero. • Control pollution flow from the site where possible • Report the spill to the General Manager or Site Supervisor if pollution has escaped the site or if the spill has potential to harm the environment • Call the Fire Brigade with details of spill so their emergency response crews can assist Coffs Harbour: 6651 6891 Sawtell: 6653 1422 • Call Key People listed below in order 		
Notify Key People	Key people to be notified – work down the list until contact is made verbally		
	Position	Name	Phone
	Maintenance Leading Hand	Stephen Mann	0438 383 091
	Site Supervisor	Kevin Elks	0409 952 192
	General Manager	Robert Watters	0429 986 859
	WHS Coordinator	Brendan Cooper	0447 477 107
	Site Foreman	Nathan Lyons	0419 129 831
Media Relations	In the event of any pollution related incident, ONLY the General Manager NSW or his delegate are authorised to make any statements to the media or public.		

6 TRAINING AND TESTING

Training Requirements

- All new employees are to receive a site induction that introduces the Environmental Policy, objectives and targets, environmental responsibilities and key environmental management rules and policies. The requirement for pollution incident notification will be communicated to all employees via induction.
- All personnel are to be re-inducted at regular intervals, including team leaders and supervisors.
- Key emergency response personnel are to be provided with spill control training at least once every two years, or more frequently if emergency team members change.
- Toolbox sessions shall cover Environmental matters covering a variety of relevant topics at regular intervals. Toolbox sessions should also cover any environmental incidents recorded and reported.

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- Environmental work instructions must be communicated to all employees so that employees have an understanding of relevant environmental management procedures relevant to their work areas.
- Key personnel will be assessed for their competency against this work instruction on an annual basis.

Plan testing, review and maintenance

- An exercise drill will be completed randomly at least on an annual interval.
- This PIRMP will be reviewed on an annual basis or following a significant pollution incident covering deficiencies identified in drills.
- A level of supervision to ensure ongoing compliance will be provided (audits, monthly inspections, hazard reporting etc.)

7. REVISION HISTORY

Revision history is controlled in the TOOLBOX document module