

1. PURPOSE

The purpose of this procedure is to ensure that Industrial Galvanizers Newcastle 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 the Industrial Galvanizers Newcastle site located at 312 Pacific Highway Hexham.

3. INTRODUCTION

3.1 Site Description

Table 3-1 describes the subject site. The site is located approximately 15km from Newcastle Harbour.

Table 3-1 Site Details

Item	Details
Site Name	Industrial Galvanizers (Newcastle)
Site Owner	Industrial Galvanizers Corporation Pty Ltd
Site Address	312 Pacific Highway Hexham
Local Government Authority	Newcastle City Council
Current Zoning	4(b) Port and Industry Zone
Site Area	2.9 ha
Site Elevation	< 10 mAHD

Notes: Elevation is approximate and relative to Australian Height Datum (AHD)

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

The site extends from Pacific Highway through to Old Maitland Road and is predominantly rectangular in shape, although it has a dogleg shape to the south east. The main processing areas of the galvanizing plant extend along the north boundary, with steel storage areas located on the southern ends of the site. To the north east, the site is bordered by residential properties, which can be seen in Figure 3-2.

Table 3-2 describes the neighbors in close proximity to the site, provided to assist in the effective communication of issues which may extend past the site boundary.

3.2 Neighboring Land Uses

The site is located in an area zoned as 4(b) Port and Industry Zone.

The land uses surrounding the site include:

- To the South: Forgacs and residential property in the south western part.
- To the West: The Pacific Highway and the railway across the road;
- To the North: Gilbert and Roach trucks across the boundary;
- To the East: Residential homes remain at the rear of the site in the north eastern area corner and on Old Maitland Rd in the south eastern direction and are non-complying uses in this industrial zone. The Hunter River is located across Old Maitland Road.

Table 3-2 Details of Neighboring Properties

No	Name	Address	Phone
1	Forgacs	304 Pacific Hwy Hexham 2322	02 4964 8245
2	Gilbert & Roach	320 Pacific Hwy, Hexham 2322	02 4964 8641
3	Newcastle Caravan City	8 Galleghan St, Hexham 2322	02 4964 8650
4	Kentan Machinery	338 Pacific Hwy, Hexham 2322	02 4964 8275
5	Truckline	348 Pacific Hwy, Hexham 2322	02 4964 9550
6	Cummins	21 Galleghan St, Hexham 2322	02 4964 8466
7	Bradstreet Parts	340 Maitland Rd, Hexham 2322	02 4904 6600
***	Hexham Bowling Club	290 Old Maitland Rd, Hexham 2322	02 4964 8079
***	Parravans Caravans	354 Pacific Hwy, Hexham 2322	02 4964 8888

POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN INDUSTRIAL GALVANIZERS (NEWCASTLE)

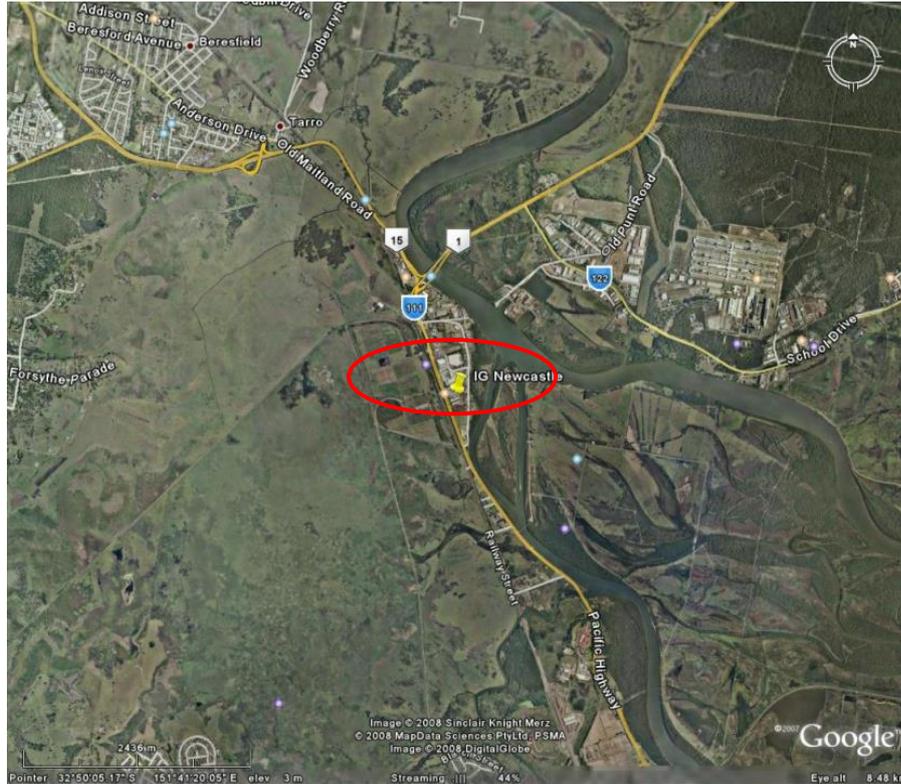


Figure 3-1: Regional Context of Proposed Site
Source: Google Earth.



Figure 3-2: Local Context of Site
Source: Google Earth



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

3.3 Proximity to Local Sensitive Receptors

A. Ecological receptors:

- The underlying groundwater;
- Hunter River approximately 100 metres to the east, and ultimately Newcastle Harbour;
- Hexham Swamp Nature Reserve approximately 800 metres to the west;
- Kooragang Nature Reserve approximately 3km to the south west;
- The catchment of the area.

B. Human Receptors:

- Adjacent residential areas.

3.4 Key Activities & Processes

3.4.1 Hot Dip Galvanizing

Galvanizing is a process undertaken to coat ferrous metals and metal products in a layer of zinc to prolong their life. The metal to be coated requires pre-treatment prior to being immersed into the zinc bath in order to remove rust, grease and other materials, and therefore to promote the galvanizing process.

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 ($ZnCl_2 \cdot 3NH_4Cl$), 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.

3.4.2 Chemical Storage and Handling

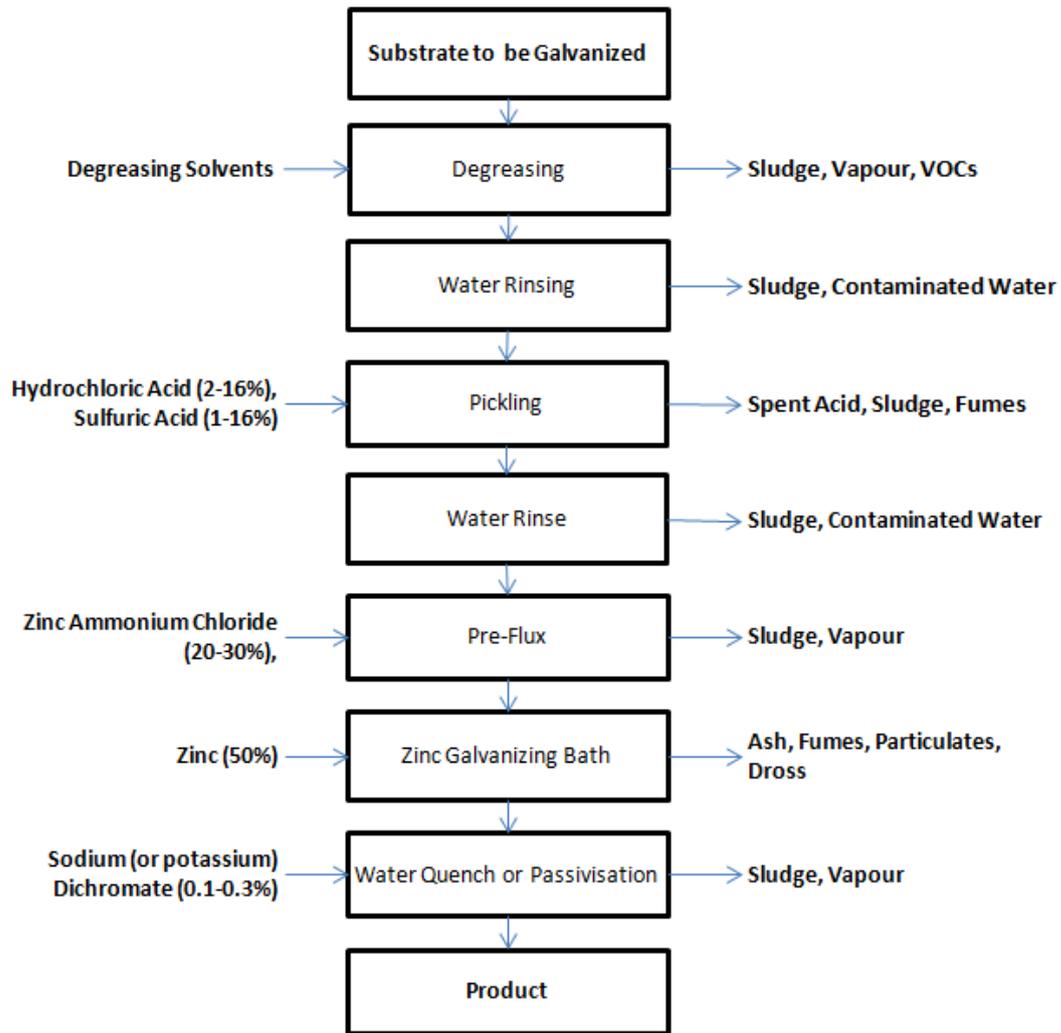
A number of chemicals are required for the galvanizing process and these are stored and handled on site. Some of the chemicals required for the process do not require storage at the site and these chemicals are delivered, as required, to site by bulk tanker and transferred directly to the appropriate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

3.4.3 Typical Emissions

Galvanizing 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 galvanizing. Waste liquids are controlled on site and transferred off-site under a trade waste agreement or via approved waste disposal contractors (i.e. no emissions are expected).

The galvanizing 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 of the galvanizing bath, as well as solids in spent solutions and wastewater treatment sludge.



Source: Queensland Department of Environment and Heritage, 1998.

Figure 3-4: The basic galvanizing process steps and likely emission points

4. 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 Response Plan (Hexham)
- Dangerous Goods Manifest

4.1 Risk Assessment Process

The environmental risk assessment identifies aspects that may cause a risk of harm to the environment and assesses the level of impact. Environmental risk assessments are used for determining the significance of impacts on the environment. The process of risk assessment is explained below.

1. How likely is an event to occur?

Consider the number of exposures, and the cumulative failures required to let the event occur.

Level	Descriptor	Description
5	Almost certain	The event is expected to occur in most circumstances
4	Likely	The event will probably occur in most circumstances
3	Moderate	The event should occur at some time
2	Unlikely	The event could occur at some time
1	Rare	The event may occur only in exceptional circumstances

2. If it does, what are the worst-case scenario consequences?

Perhaps better to work back from 5 to 1. If in doubt, select the higher option.

Level	Descriptor	Example detail description
1	Insignificant	Low financial loss, negligible environmental impact
2	Minor	On site release immediately contained, minor and reversible impact. Generation of waste. Normal resource consumption. Medium financial loss.
3	Moderate	On site release contained with outside assistance. Potential release to stormwater. Incident reported to authorities. Minor bur reversible. Generation of waste requiring disposal as controlled wastes. Significant consumption of resources e.g. gas, water, electricity, chemicals, zinc etc. High financial loss.
4	Major	Loss of production capability. Offsite release contained with outside assistance. Incident reported to authorities, major but reversible impact. Major financial loss.
5	Catastrophic	Toxic release off site with detrimental effect. Immediate involvement of authorities, major and irreversible impact, huge financial loss.

3. Add the levels above to find risk level

(I.e. Likelihood “3”, Consequence “3”, would equal “6” or High Risk

LEVEL OF RISK	Consequences				
	Insignificant	Minor	Moderate	Major	Catastrophic
Likelihood	1	2	3	4	5
5 (almost certain)	6	7	8	9	10
4 (likely)	5	6	7	8	9
3 (moderate)	4	5	6	7	8
2 (unlikely)	3	4	5	6	7
1 (rare)	2	3	4	5	6

Risk Prioritisation		
	RISK LEVEL	SUGGESTED ACTIONS
	Low Risk	Manage by routine procedures
	Moderate Risk	Responsibility and action dates must be specified
	High Risk	Reduce as soon as possible
	Extreme Risk	Immediate action to reduce Risk

4.2 Hazard Identification

Gas Storage and Handling

Natural gas is used on site for the galvanizing process and LPG is stored and handled on site for the operation of site forklifts. There are also 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 galvanizing buildings, the tanks are located within bunded 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 cleanup 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.
- Material Safety Data Sheets (MSDS) 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 suitable containers that are kept sealed to prevent loss of the contents to the environment.

4.3 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

4.4 Inventory of Potential Pollutants – including maximum storage quantities

Substance	Class	Sub Risk	UN No.	Pack Group	Hazchem Code	Maximum Storage Quantity
Sodium Hydroxide Solution (approx. 12%)	8	N/A	1824	II	2R	140kL
Hydrochloric Acid Solution	8	N/A	1789	II	2R	550kL
Corrosive Liquid, Acidic, Inorganic, N.O.S	8	N/A	3264	III	2X	120kL
Oxidising Liquid, Toxic, n.o.s	5.1	6.1	3099	II	2W	110kL
Ammonia Solution	8	NA	2672	III	2R	1kL
Oxidising Liquid, Toxic, n.o.s (50% solution)	5.1	6.1	3099	II	2W	1kL
Environmentally Hazardous Substance, Liquid, n.o.s	9	6.1	3082	II	3Z	1kL
LPG	2.1	N/A	1075	N/A	N/A	4kL
Zinc ammonium chloride	N/A	N/A	N/A	N/A	N/A	2000kg
Ammonium chloride	N/A	N/A	N/A	N/A	N/A	1000kg

5 INCIDENT RESPONSE PROCEDURE

5.1 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 totaling, 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.

5.2 Notification Procedure – Neighbors

The nature and direction of the incident will determine the most appropriate neighbors to be notified.

In the event of a pollution incident, the Operations Support Officer will be the person responsible for notifying any affected neighbors. In their absence, the responsibility will sit with the Site Foreman.

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

5.3 Immediate Incident Response Procedure

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

5.3.1 Management Procedure

- The **GENERAL MANAGER NSW (GM - NSW)** is responsible for notifying the authorities in order as listed below.
- If the General Manager is not available or immediately contactable, the **NSW OPERATIONS MANAGER** shall be the person to take the responsibility for notifying the authorities immediately.
- In the event that the GM or NSW OM are both not available or contactable, the **SITE OPERATIONS MANAGER** 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 NSW Operations Manager or Site Operations Manager must notify the **GENERAL MANAGER NSW IMMEDIATELY**.
- **Last resort**, the responsibility to call the relevant authorities will reside with the HSE Coordinator or the NSW Maintenance Manager in the event the GM NSW, the NSW Operations Manager and the Site Operations Manager have not been contactable.
- In the event of a major incident on site, **ONLY** the General Manager NSW or his delegate, shall be authorised to make any statements to the media or public.

Table 5-1 Notification Template for Management Team

SITE MANAGEMENT TEAM		AUTHORITIES TO NOTIFY OF POLLUTION INCIDENTS
NSW General Manager	Phone:	Environment Protection Authority (EPA) Tel: 131 555
NSW Operations Manager	Phone:	Public Health Unit (John Hunter Hospital) Tel: (02) 4924 6477
Operations Manager	Phone:	WorkCover NSW Tel: 131 050
NSW Maintenance Manager	Phone:	Newcastle Council Tel: (02) 4974 2999
OHSE Coordinator	Phone:	Fire and Rescue NSW Tel: 000

5.3.2 Employee Procedure

Table 5-2 Notification Template for Site Employees

Safety First	<ul style="list-style-type: none"> Care for workers - Evacuate Area, 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:	Phone:	Dr Address:
	Ambulance:	000	
	Hospital: JOHN HUNTER	Phone: 02 4921 3000	Hospital Address: LOOKOUT ROAD, NEW LAMBTON
Minor Spills	<ul style="list-style-type: none"> Stop the source of the spill immediately if it is safe to do so Contain the spill (Spill Kits) and control its flow from the site Report the spill to the NSW Operations Manager or SITE Operations Manager 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 NSW Operations Manager or SITE Operations Manager if pollution has escaped the site or if the spill has potential to harm the environment Call Transpacific Industries (TPI) with details of spill so their emergency response crews can assist. 1800 774 557 (24hr Emergency Response Hotline) Call Key People listed below in order 		
Notify Key People	Key people to be notified – work down the list until contact is made verbally		
	Operations Manager		Phone:
	NSW Operations Manager		Phone:
	General Manager NSW		Phone:
	NSW Maintenance Manager		Phone:
	OHSE Coordinator		Phone:
	Operations Support		Phone:
Media Relations	<p>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.</p>		

6 TRAINING AND TESTING

6.1 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.
- 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.

6.2 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. APPROVAL & HISTORY

Issue	Amended paragraphs/pages	Amendment Details	Date Issued
1	New WI Issue	New WI Issue	August 2012

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