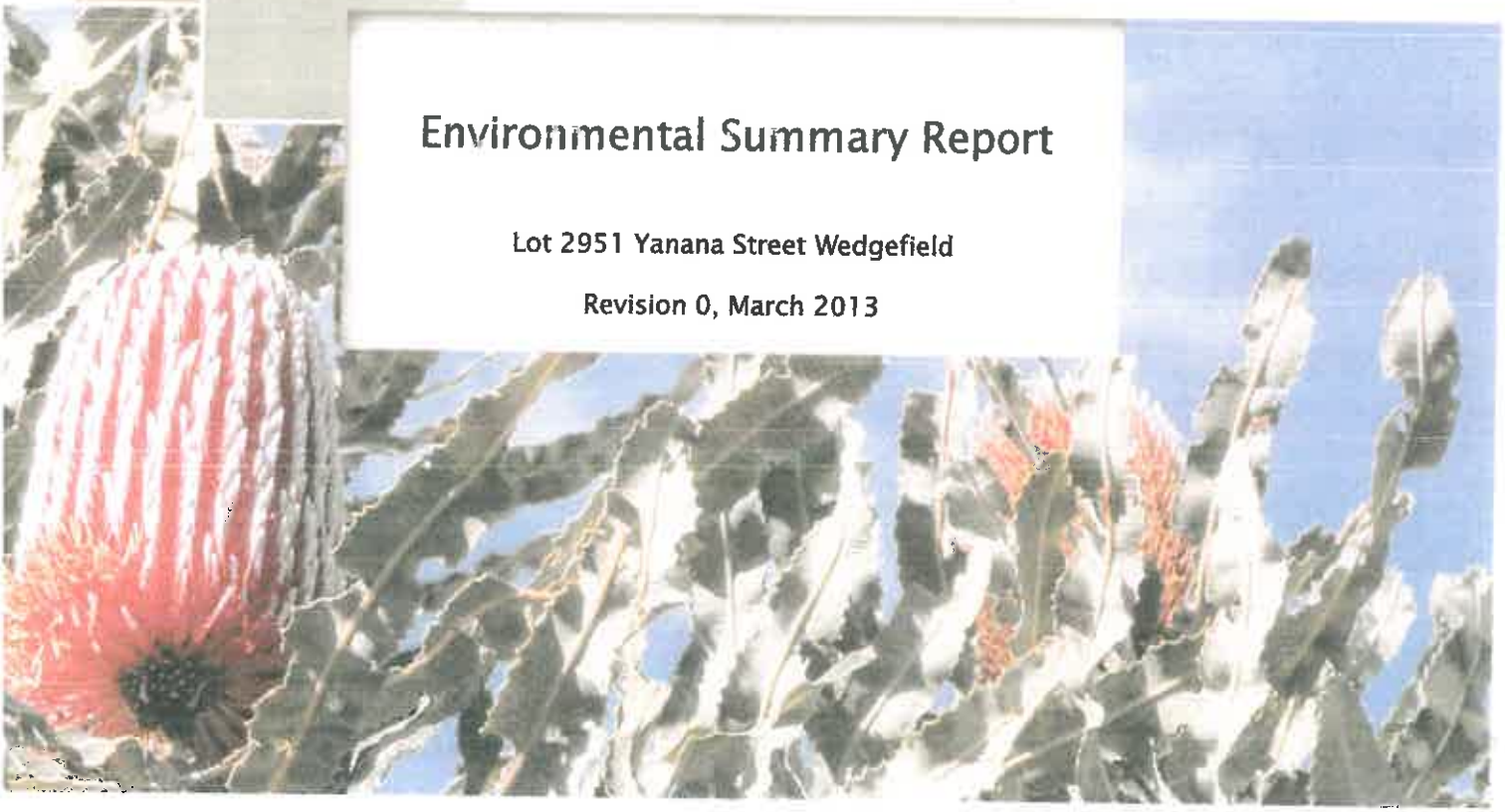
COTERRA ENVIRONMENT

Environmental Summary Report

Lot 2951 Yanana Street Wedgefield

Revision 0, March 2013



This report was prepared by:

Coterra Pty Ltd trading as CO ENVIRONMENT
ABN: 92 143 411 456

2/460 Roberts Road
Subiaco WA 6008

(08) 9381 5513
(08) 9381 5514
info@coterra.com.au

Our Ref: HPDUPC01
Author(s): Katrina Cooper
Report Version: Revision 0
Date: March 2013

This report was prepared for:

Ultimate Protective Coatings
Suite 4, 69 Hay Street
Subiaco WA 6008

TABLE OF CONTENTS

Page

TABLES (Compiled within the report)

Page

FIGURES (Compiled at the end of the report)

APPENDICES

1.0 INTRODUCTION

1.1 Overview

Ultimate Protective Coatings (UPC) (the proponent) proposes the relocate their existing blasting and industrial coating facility/operations at Lot 126 Great Northern Highway Port Hedland to a new location within Wedgefield, Port Hedland[1]. There is a Department of Environment and Conservation (DEC) Registration (No. 904) currently held for the operations at the current site, including Abrasive blasting, fibreglass reinforced plastic manufacturing and metal coating (Appendix A).

The proposed location is 12 (Lot 2951) Yanana Street Wedgefield (the site) which is approximately 0.57ha is located approximately 12km south of Port Hedland (Figure 1).

The site is within the 'Wedgefield Special Control Area'[2] which is identified under the Shire's Town Planning Scheme No. 5. Historical aerial photography available indicates that 'industrial' based activities have been undertaken at the site since 1995. The site was also acquired due to its location within Wedgefield i.e. not within the central Wedgefield area and surrounding established industries i.e. trucking company, cement batching plant, Earth Ex storage facility, waste treatment plant.

The proponent anticipates that the coating- industrial spray-painting operations at the proposed site will exceed 1,000L of paint or powder per year.

Under Schedule 1, of the *Environmental Protection Regulations 1987* a Metal coating premises on which metal products (excluding vehicles) are spray painted, powder coated or enamel which acquires 1,000L or more of paint or powder is classed as a prescribed premises (Category 81)[3]. Under Part V of the *Environmental Protection Act 1986* a prescribed premises is required to obtain a Works Approval (for construction) and a Licence or Registration (for operation).

The Environmental Protection Authority (EPA) (2006) has identified noise, dust and odour as possible impacts from Metal Coating- industrial; spray-painting operations. Due to the size of the proposed development, it can be anticipated that possible emissions associated with the operation can be effectively managed.

1.2 Planning Context

As presented in Section 1.1, the site is located within the 'Wedgefield Special Control Area' under the Shire's Town Planning Scheme No. 5. Within this area there is the LandCorp Wedgefield Industrial Estate Development. There are many light industries already established within Wedgefield some including (but not limited to):

---

[1] Due to council zoning issues at the current site (Lot 126 Great Northern Highway), the proponent has been requested to transfer operations to another site.

[2] This control area recognises the special relationship that is between caretaker's dwellings and industry within the area.

[3] Industries with the potential to pollute the environment.

- Fabric Coating Mills.
- Fabricated Structural Metal Manufacturing.
- Plate Work Manufacturing.
- General Automotive Repair.
- Scrap steel businesses.
- Cement Batching Plants.
- Waste Treatment Plant.
- Blasting and painting.

Under the Shire's TPS the council notes that when considering application for planning approval within the 'Wedgefield Special Control Area' the following will be taken into regard:

- the potential impacts of emission of light, noise, electrical interference, vibration, smell, fumes, smoke, vapour, steam, soot, ash dust and waste water on any existing or proposed caretaker's dwelling. (refer to Section 4.0)

- the potential for exposure to risks and hazards associated with the location of the caretaker's dwelling in proximity to any other development and in this regards may refer an application for planning approval to the Environmental Protection Authority for advice or assessment of risks and hazards (refer to Section 4.0).

There are currently no caretakers dwellings located on the site.

1.3 Proposed Facility

1.3.1 Operations/Activity

The proposed activities that will be undertaken on site include:

- Coating Inspection: Inspection of the integrity of coatings on commercial and industrial material/structures.

- Dry Abrasive Blasting: blasting during which no water is added to the abrasive material or the propellant.

- Metal Coating: the application of paint to coat material to form a substrate. Estimated production capacity of 4,000-5,000L of paint per annum.

These operations will be undertaken within the Dome structure (further discussed in Section 1.3.2). None of the identified operations are proposed to be completed in the outside environment.

1.3.2 Overview of Structure

There is currently a large iron shed, dongas, shipping containers and concrete slabs located on site (refer to Appendix B for the detailed survey of current structures on

site). It is proposed to retain the existing iron shed and install a Dome 'shed'. The dome will be fixed to sea containers (a total of approximately 9.8m high) and will have a retractable door at the front of the structure. Engineering requirements such as footing and fastenings will be designed by a structural engineering consultant to ensure stability of the proposed structure. Refer to Appendix B, for preliminary design, including dimensions. Flooring within the Dome area will be concreted.

A combined spray and blast booth is proposed to be installed within the Dome structure in accordance with AS/NZS 4114.1- Spray painting booths.

All paint and chemicals will be stored within a covered and lockable bunded area. The location of the storage/bunded area is to be confirmed.

For management procedures associated with proposed operations refer to Section 4.0.

1.3.3 Infrastructure and Services

The site is connected to mains water supply and deep sewerage. The site is also connected to the Western Power electricity grid.

2.0 KEY ENVIRONMENTAL REGULATIONS AND POLICES

2.1 Environmental Protection Act 1986

The *Environmental Protection Act 1986* ('the Act') is the pre-eminent environmental legislation in Western Australia. Development projects are regulated under Part IV and V of the Act.

Assessment opportunities under the Act occur under Part IV of the Act at the rezoning stage (region scheme and/or local scheme) under Section 48A and the subdivision / development stage under Section 38 of the Act.

As discussed in Section 1.1, Under Part V of the Act a prescribed premises is required to obtain a Works Approval (for construction) and a Licence or Registration (for operation). This application process will be undertaken in consultation with the Department of Environment and Protection (DEC).

There are a number of Environmental Regulations and Guidance Notes which provide guidance on environmental management. Relevant documents are discussed below.

2.1.1 Environmental Protection (Noise) Regulations 1997

Noise emissions which exceed the prescribe standard can be regarded as pollution and unreasonable noise under Section 3 of the Act. The regulations cover all noise passing from one premises to another, noise from public places as it affects adjacent premises and provides a basis for determining acceptable noise levels in relation to land use.

2.1.2 Environmental Protection (Abrasive Blasting) Regulations 1998

These regulations discuss the requirements associated with abrasive blasting (cleaning or abrading the surface of an object using an abrasive material propelled by compressed air, water or steam or by wheel), including the following:

- Prohibition on the use of certain materials;
- Blasting chambers;
- Abrasive blasting in the open;
- Abrasive Blasting in or near aquatic environments; and
- Waste disposal.

2.1.3 Environmental Protection (Metal Coating) Regulations 2001

The regulations apply to metal coating premises, characterised as a Prescribed Premises Category 81 and cover spray painting, booths, emission, storage of chemicals and disposal of liquid and solid wastes.

2.1.4 Environmental Protection (Controlled Waste) Regulations 2004

This regulation addresses that waste generators (i.e. Abrasive blasting) to retain receipts of waste removed from site to an approved waste facility/landfill.

2.1.5 Environmental Protection (Unauthorised Discharges) Regulations 2004

These regulations identify the discharge of certain materials prohibited i.e. paint and the penalties associated with unauthorised discharge to the environment.

2.1.6 EPA Guidance Statement No. 3 - Separation Distances between Industrial and Sensitive Land Uses

Environmental Protection Authority (EPA) Guidance Statement No. 3 (EPA, 2005) provides generic buffer (separation) distances for various range of industrial, commercial and rural activities and infrastructure associated with off-site emissions that may affect adversely the amenity of sensitive land uses.

For Prescribed Premises Category 81: Metal coating- industrial; spray-painting operations, the EPA has identified the possible off-site impacts associated with this operation are noise, dust and odour, with an approximate buffer distance to the nearest sensitive receptor being 200m.

Proposed management and control measures incorporated at the facility can reduce this generic buffer distance.

2.1.7 EPA Guidance Statement No. 33 – Environmental Guidance for Land Development

Environmental Protection Authority (EPA) Guidance Statement No. 33 (EPA, 2008b) outlines the environmental protection process and provides the EPA's advice on a range of environmental factors in order to assist in the protection, conservation and enhancement of the environment during the land planning and development process.

3.0 EXISTING ENVIRONMENT

3.1 Surrounding Landuses

The site is located within the Wedgefield Special Control area which is a mixture of commercial and industrial operations. Adjacent to the site is an existing company 'Orintide' which undertake sandblasting and painting within the premises. A waste treatment plant is located east of the site.

There are caretakers dwellings located within Wedgefield, however, there are no dwellings located within the site.

3.2 Topography, landforms and soil

The topography within Port Hedland is generally flat, with occasional rocky outcrops, rising to 200m AHD above the coastal plain (WAPC, 2003). Spot height data indicates that the topographic elevation near the site is approximately 7mAHD (Landgate, 2013a). Site survey undertaken for the site indicates that topography ranges from approximately 5.79mAHD in the south western corner to 4.93mAHD in the north eastern corner of the site (McMullenNolan, 2013- Appendix B).

The Port Hedland area contains five broad landform units, being the coastal dunes, coastal flats, floodplains, offshore islands, and the northern dissected plateau (the Pilbara Block). Port Hedland is found in the Abydos Plain. The Abydos Plain is mostly on Archaen granite, but the coastline is found on Quartnary alluvium. The coastal alluvial soils are characterised by red earthy sands (SKM, 2007).

Regional mapping indicates that most of the site consists of red-brown silty sand (Qps) with the north east section of the site containing Silty sand, red-brown, containing Anadara granosa (Qhs) (Geological Survey of WA) (Figure 2).

3.3 Surface Water and Groundwater

The ephemeral rivers in the Port Hedland region are dry for most of the year, flooding after heavy rains and often overflowing to inundate the coastal plains

The Port Hedland Coastal Basin is made up of six major rivers – the Maitland, Harding, George, Sherlock, Yule and Turner Rivers (SKM 2007). According to mapping provided in SKM (2004) Figure 2.1, indicates that the Saline coastal flats of this basin do not extend near or within the Wedgefield area.

There are no water bodies i.e. streams, wetlands within the site. There are four (tailing) ponds located east of the site within Lot 16 Schillaman Street Wedgefield which are associated with water, sewerage and drainage activities.

Modelling of groundwater flow in the Port Hedland area shows an overall movement of groundwater north towards the coast. There is limited groundwater level data for Wedgefield. Regional groundwater contours as depicted in Bennelongia Pty Ltd (2009) indicate that groundwater near the site is approximately 5mAHD. Therefore it is estimated that groundwater levels are approximately 1 to 2m below ground level at the site.

Seasonal fluctuations in groundwater level can be approximately 2 m during years of high rainfall (Bennelongia Pty Ltd, 2009).

3.4 Storm Surge and Flood Mapping

On average, two or three cyclones cross the northern coastline of Western Australia each year. During a cyclone, destructive winds of up to 200kmh are not uncommon. Heavy rainfall associated with some cyclones can result in widespread flooding and storm surges (WAPC, 2003).

In 1998, a Greater Port Hedland Storm Surge Study was completed, which combined the effects of storm surge and rainwater flooding in the area from the Turner River to 12 Mile Creek. This study provided a series of maps showing the likelihood of inundation for 50 and 100 year return periods. This study confirms that storm surge represents the major risk to Port Hedland town centre and some areas of Wedgefield which is partially flooded at 50 years and a little more extensively flooded at 100 years (WAPC, 2003).

The combined storm surge and flood mapping for the region, indicates that the 1:100 years event mapping boundary is adjacent to the eastern boundary of the site and does not extend into the site. Refer to Appendix C.

3.5 Historical Landuses

Historical aerial photography available indicates that the site has been cleared since 1995. From 2002, the site has remained cleared with a small building/shed in the south west section of the site. In 2009, a large shed was present on the northern boundary of the lot (Landgate, 2013b).

3.6 Vegetation

Vegetation in the Port Hedland area is sparse, and is mostly representative of semi-arid northern areas of WA. There is no remnant vegetation on site.

3.7 Contaminated Sites

The DEC's Contaminated Site Basic Summary of Records was searched for any reported known or suspected contaminated Site within the Wedgefield area. There are no known registered contaminated sites within or adjacent to the site.

There are two know sites within the Wedgefield, these being Lot 6179 on Plan 26719 Wedgefield for hydrocarbon and heavy metal present in the groundwater beneath the site and 6 Trig Street Wedgefield for heavy metals in groundwater beneath the site.

3.8 Acid Sulphate Soils

Regional Acid Sulphate Soil (ASS) data for the Pilbara Region indicates that there is no known risk for ASS occurring on site (Landgate, 2013c).

3.9 Aboriginal Heritage

The Department of Indigenous Affairs (2013) Aboriginal Heritage Inquiry System was search for registered sites or other heritage place. No registered placed are currently recorded within the site (DIA, 2013)

4.0 IMPACTS AND MANAGEMENT

4.1 Overview

The main impacts associated with Metal Coating- industrial; spray-painting and dry abrasive blasting operations are:

- Noise;
- Vibration;
- Dust;
- Odour; and
- Waste generation.

4.2 Environmental Risk Assessment

An Environmental Risk Analysis Matrix was used to develop an environmental aspects and impacts register which identifies the risk for the various activities associated with the operations proposed onsite. The matrix is provided in Appendix D.

With control procedures implemented on site, possible impacts can be effectively managed. Most impacts identified in the environmental aspects and impacts register have a low to medium risk. Identified impacts and management measures/control procedures are discussed further in the following section.

4.3 Management Measures and Operation Procedures

Operational procedures to limit offsite environmental impacts are presented in the Environmental Aspects and Impacts Register (Appendix D). UPC has Operation Procedures which incorporate legislative requirements into the standard work procedure for the site. Copies of these procedures are provided in Appendix E. These include (but are not limited to) the following:

- Spray Painting Operational Procedure (Document No. 1.8.13)
- Abrasive Blasting Operational Procedure (Document No. 1.8.8)
- Hazardous Substance and Dangerous Goods Management Operational Procedure (Document No. 1.4.2)

A summary of these management measures and operation procedures to mitigate possible impacts are provided in Table 1.

Table 1. Summary of impacts and associated management measures

Aspect/Impact	Management Measure/ Operational Procedure
Dust	▪ Blasting and painting to be conducted in a blasting chamber/spray booth/Dome 'Shed'. ▪ Blasting chamber will be completely sealed operating to ensure no visible dust escapes from the building chamber and/or off

Aspect/Impact	Management Measure/ Operational Procedure
	premises. ▪ Management Measures identified in the UPC (2012a) Abrasive Blasting Operation Procedure. Section 6.9- Environmental Controls. ▪ Management Measures identified in the UPC (2012b) Spray Painting Operation Procedure. Section 6.10- Environmental Controls.
Noise	▪ Blasting and painting to be conducted in a blasting chamber/spray booth/Dome 'Shed.' Compressors are insulated which will reduce noise emissions. ▪ Proponent to establish and maintain a complaints register, any complaints received will be logged including environmental conditions on that day (wind speed and direction). ▪ Activities within the facility will only be undertaken within approved operation hours. ▪ Equipment will be regularly serviced in accordance with manufactures instructions.
Odour	▪ Painting to be conducted in a spray booth/Dome 'Shed'. ▪ Proponent to establish and maintain a complaints register, any complaints received will be logged including environmental conditions on that day (wind speed and direction).
Vibration	▪ Compressor/vacuum located on rubber pads to limit the transfer of vibration. Equipment used within approved operating times.
Paint /Chemical Storage	▪ Paint /Chemical Storage area covered and bunded (no stormwater will be able to enter the bunded area). Area in which chemical used or kept, ensure that any area on premises in which a chemical that can cause pollution is used or kept is within a compound which has walls that are impervious to acid; has floor that is impervious to acid; and appropriate volume holding capacity. ▪ Management measures for storage, handling and disposal are identified in UPC (2012c) Hazardous Substance and Dangerous Goods Management Operational Procedure. Sections 6.9, 6.12 and 6.13. ▪ MSDS for each chemical to be stored in the Office.
Waste Products	▪ All waste material to be cleaned up at the conclusion of each operation, no waste material escapes from the premises at which blasting/painting is carried on and all waste material is disposed of at an appropriate landfill site or waste treatment facility. ▪ Management Measures identified in the UPC (2012a) Abrasive Blasting Operation Procedure. Section 6.10- Waste Disposal. ▪ Management Measure identified in UPC (2012b) Spray Painting Operational Procedure. Section 6.15- Waste Disposal. ▪ Proponent will retain receipts of waste removed from site for 3 years. ▪ There will be no discharge of prohibited material (i.e. paint) into the environment.

5.0 CONCLUSION

UPC proposes the relocate their existing blasting and industrial coating facility/operations to 12 (lot 2951) Yanana Street Wedgefield which located about within the 'Wedgefield Special Control Area'.

The proposed activities that will be undertaken on site include Coating Inspection, Dry Abrasive Blasting and Metal Coating. These operations will be completed within the Dome structure which will be built onsite. No operations are proposed to be completed outside this Dome structure.

The main possible impacts associated with these proposed activities include noise, dust, vibration, waste generation and odour.

Most impacts identified in the environmental aspects and impacts register have a low to medium risk. With control procedures implemented on site, possible impacts can be effectively managed. Due to the size of the proposed development, it can be anticipated that possible emissions associated with the operation can be effectively managed on site.

6.0 REFERENCES

Bennelongia Pty Ltd (2009) Outer Harbour Development and Goldsworthy Rail Duplication: Subterranean Fauna Risk Assessment. Report 2008/4. Prepared for SKM, September.

Environmental Protection Authority (2005) Guidance Statement No. 3: Separation Distances between Industrial and Sensitive Land Uses, June.

Department of Water (2012) Pilbara Groundwater Allocation Plan. For public comments. Government of Western Australia, October, Perth.

Department of Indigenous Affairs (2013) Aboriginal Heritage Inquiry System: Aboriginal Sites Database [Online] available at http://www.dia.wa.gov.au/AHIS/default.aspx (accessed 07/03/2013).

Geological Survey of WA, 1:50,000 Urban Geology Series.

Landgate (2013a) WA Atlas: Spot height data: 2007 [Online] available at https://www.landgate.wa.gov.au/bmvf/app/waatlas/#LGATE-014 (accessed 05/03/2013).

Landgate (2013b) Map Viewer: Aerial photography [online] available at https://www.landgate.wa.gov.au/bmvf/app/mapviewer/ (accessed 19/02/2013).

Landgate (2013a) WA Atlas: Acid Sulphate Soil data [Online] available at https://www2.landgate.wa.gov.au/bmvf/app/waatlas/#DEC-030 (accessed 19/02/2013).

SKM (2007) Port Hedland Cumulative Impact Study – A Report to The Task Force on Health, Environment and Industry Sustainability. Prepared for Department of Industry and Resources, Revision 3, December.

UPC (2013a) Abrasive Blasting Operational Procedure (Document No. 1.8.8).

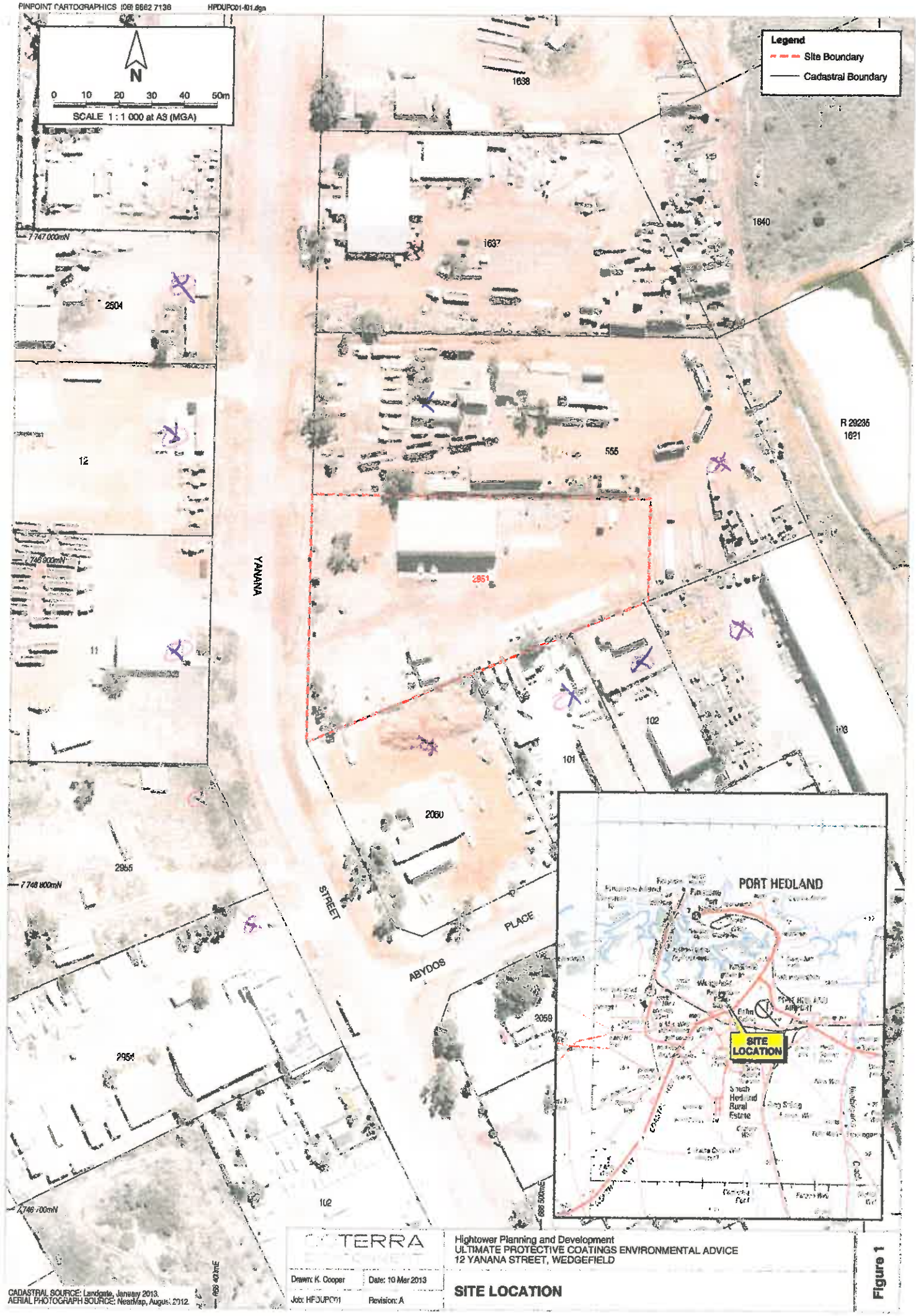
UPC (2013b) Spray Painting Operational Procedure (Document No. 1.8.13).

UPC (2013c) Hazardous Substance and Dangerous Goods Management Operational Procedure (Document No. 1.4.2).

WAPC (2003) Port Hedland Area Planning Study. State of Western Australia, Perth

FIGURES

PINPOINT CARTOGRAPHICS (08) 9662 7136 HFDUPC01-f01.dgn



CADASTRAL SOURCE: Landgate, January 2013.
AERIAL PHOTOGRAPH SOURCE: NearMap, August 2012.

TERRA

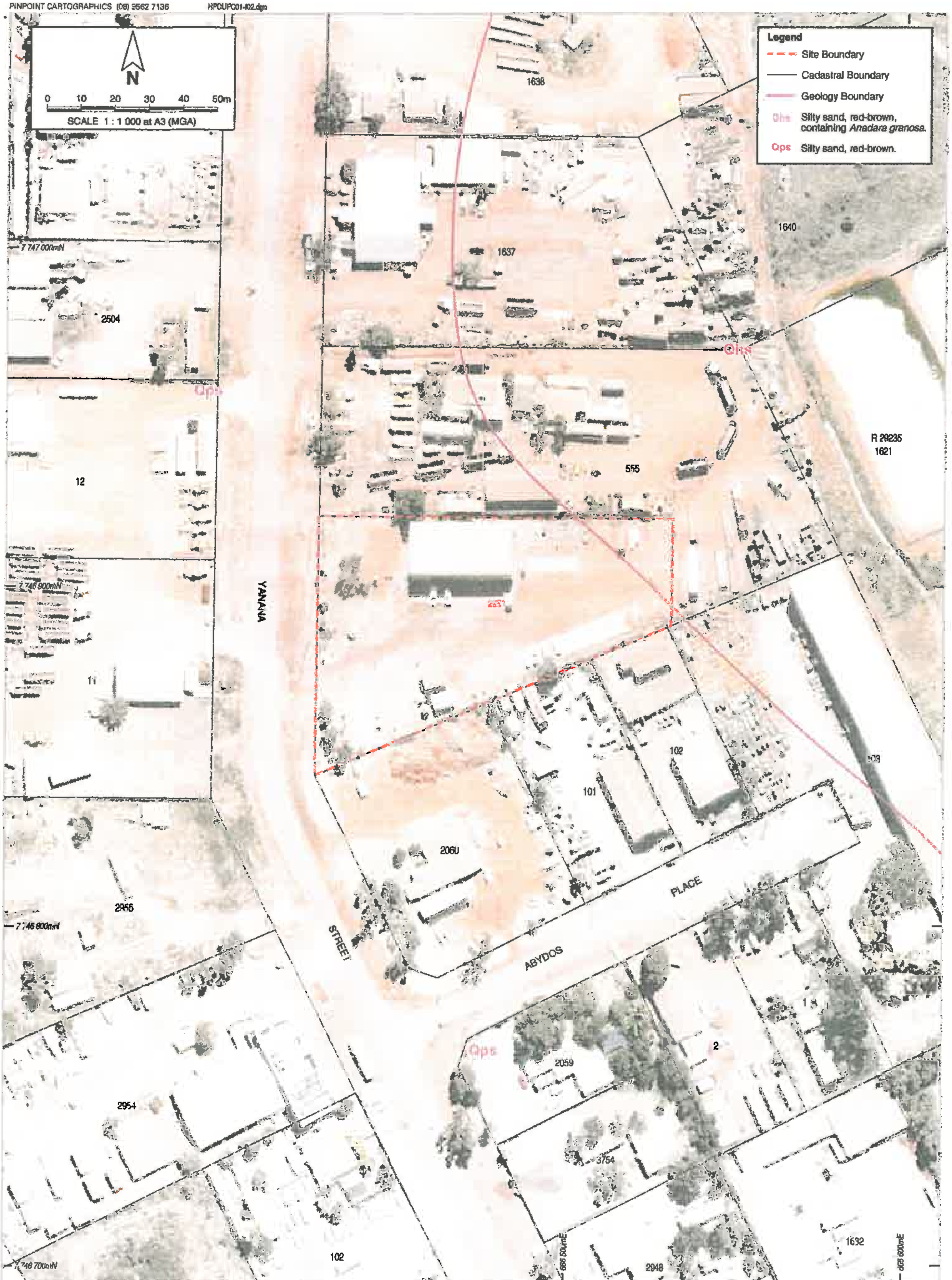
Hightower Planning and Development
ULTIMATE PROTECTIVE COATINGS ENVIRONMENTAL ADVICE
12 YANANA STREET, WEDGEFIELD

Drawn: K. Cooper | Date: 10 Mar 2013
Job: HFDUPC01 | Revision: A

SITE LOCATION

Figure 1

PINPOINT CARTOGRAPHICS (08) 9562 7136 HPDUPC01-f02.dgn



Hightower Planning and Development
ULTIMATE PROTECTIVE COATINGS ENVIRONMENTAL ADVICE
12 YANANA STREET, WEDGEFIELD

Drawn: K. Cooper Date: 19 Feb 2013
Job. HPDUPC01 Revision: A

ENVIRONMENTAL FACTORS

Figure 2

CADASTRAL SOURCE: Landgate, January 2013.
AERIAL PHOTOGRAPH SOURCE: NearMap, August 2012.
GEOLOGY SOURCE: Geological Survey of WA, 1:50,000 Urban Geology Series.

APPENDIX A – DEC REGISTRATION

Department of Environmental Protection

Head Office:
Westralia Square
141 St Georges Terrace
Perth, Western Australia 6000
Tel (08) 9222 7000 Fax (08) 9322 1598
http://www.environ.wa.gov.au

Postal Address:
PO Box K822
Perth, Western Australia 6842

The Manager
Blastworks Pty Ltd - Port Hedland
PO Box 844
Port Hedland WA 6721

Our Ref R00904

Dear Sir/Madam

ENVIRONMENTAL PROTECTION ACT 1986
REGISTRATION NUMBER 00904

Blastworks Pty Ltd
Forest Location 126
Port Hedland WA 6721

Please find enclosed your Registration, under the *Environmental Protection Regulations 1987 (as amended)* for the above premises.

Should any details of the Registration be incorrect, please advise the corrected details as soon as possible. You should also note that a person who becomes the new occupier of a registered premises must notify the Department of Environmental Protection of that fact within 30 days. Failure to do so is an offence under the Regulations.

Where a change of occupier occurs, an administration fee of 2 fee units (currently $25) is payable. Forms to transfer the Registration are available from the Department of Environmental Protection.

If you have any questions relating to your Registration or the above information, please contact Licensing Administration on 9222 7104 and an environmental officer will be assigned to handle your query.

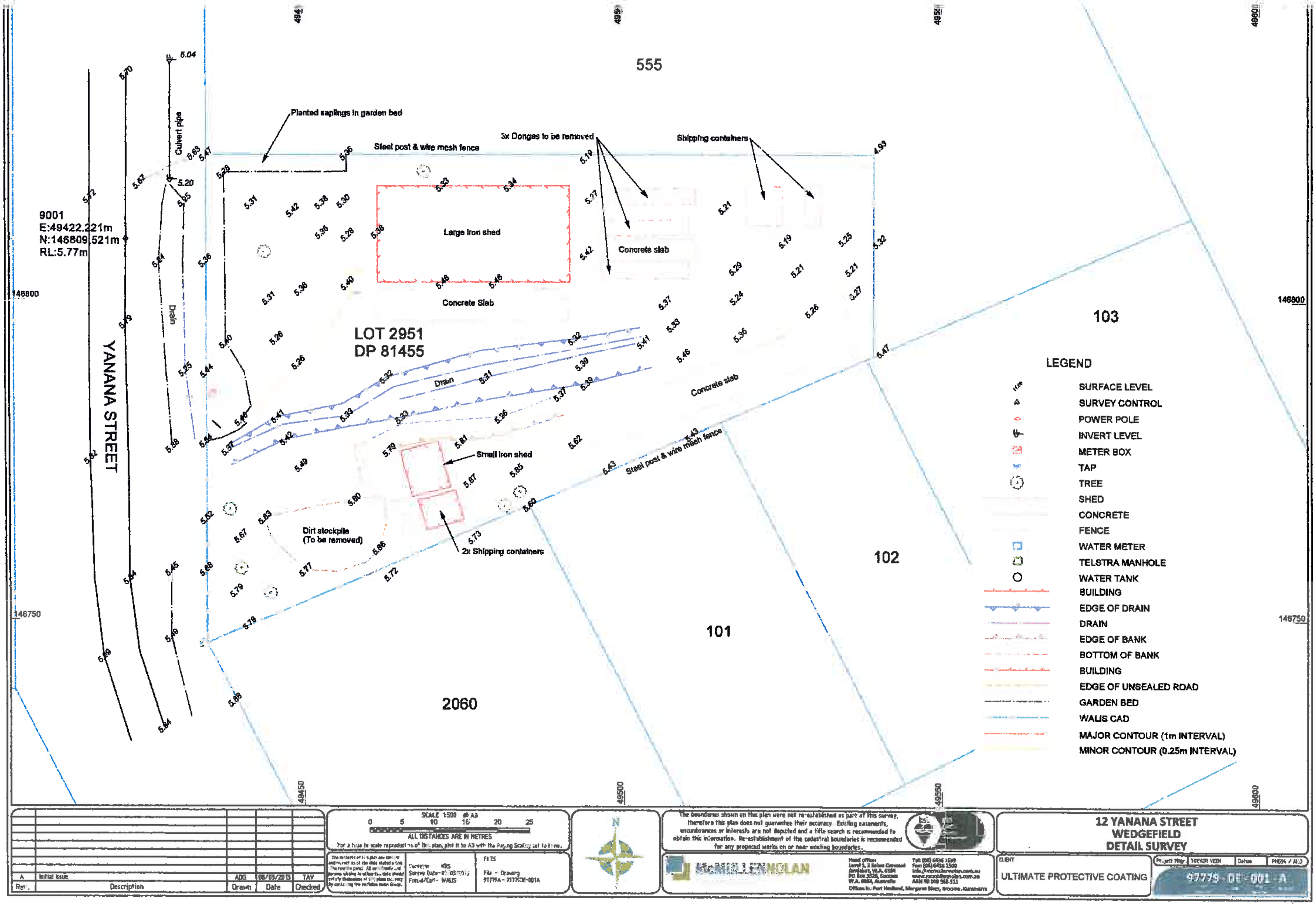
Yours faithfully

Andrew Baker
DIRECTOR
POLLUTION PREVENTION DIVISION

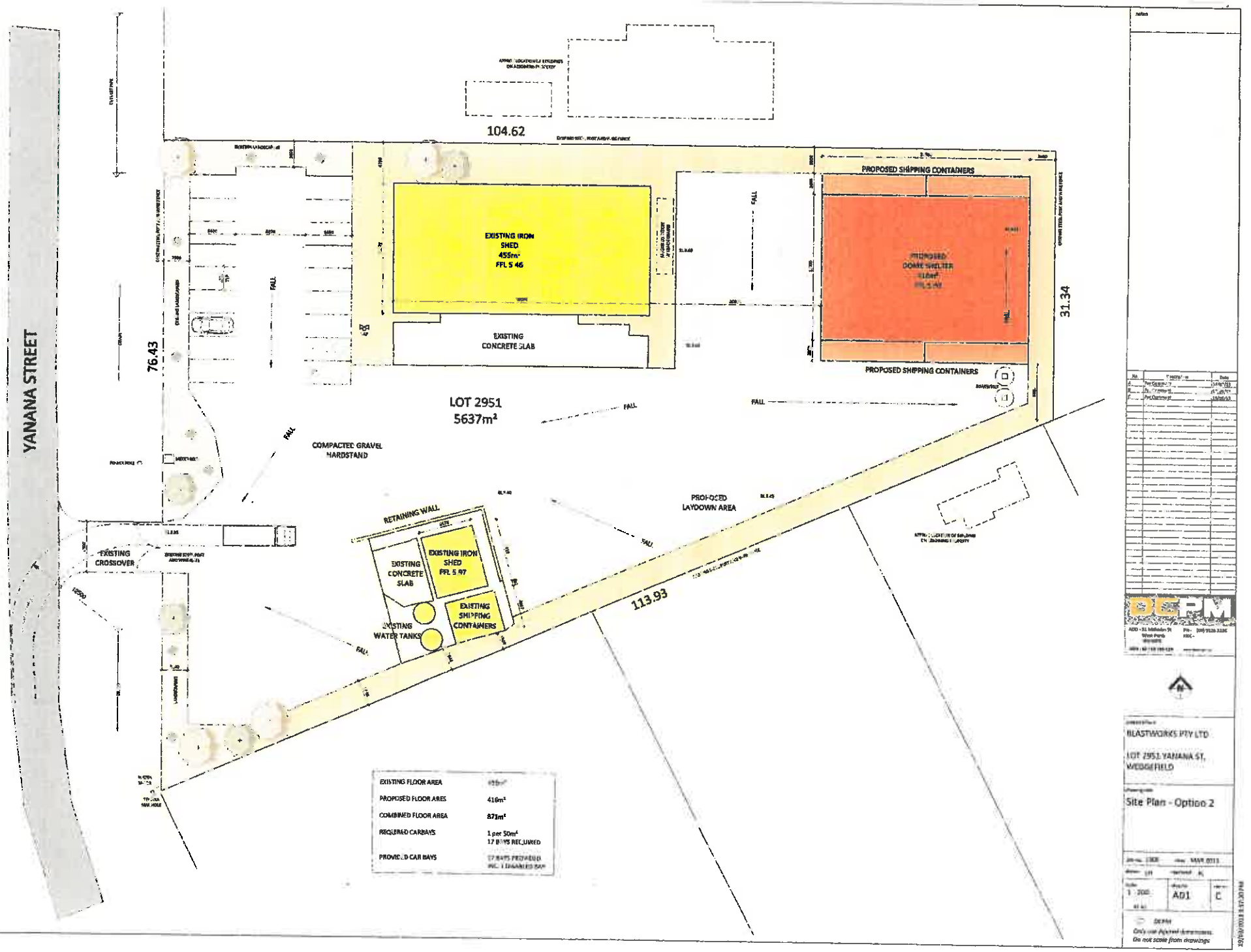
1 December 1997

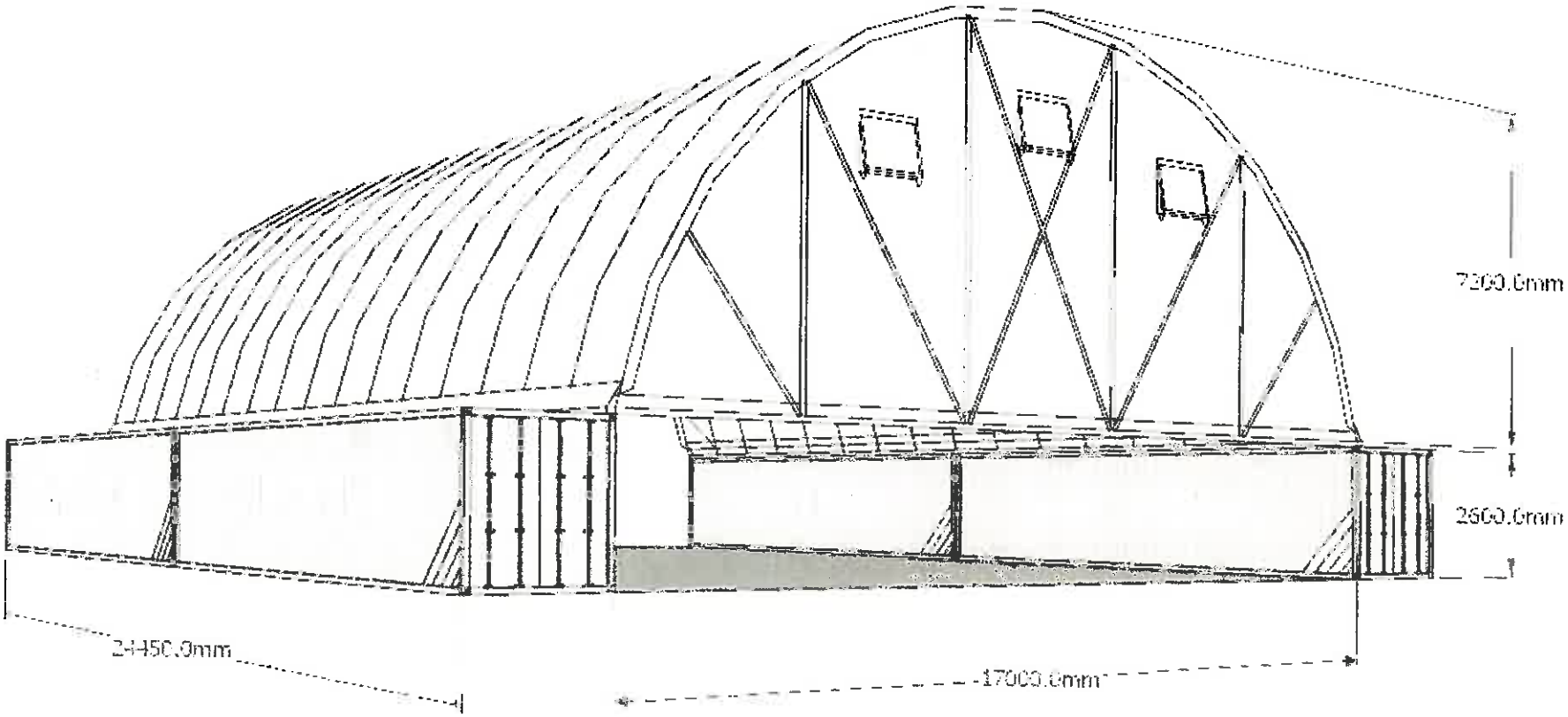
encl
copy to: Local Government Authority: Town of Port Hedland
DEP Karratha Office

APPENDIX B –EXISTING STRUCTURES ON SITE AND PROPOSED STRUCTURE DESIGN



555
103
102
101
2060
LOT 2951
DP 81455
YANANA STREET
9001
E:49422.221m
N:146809.521m
RL:5.77m
Culvert pipe
Drain
Planted saplings in garden bed
Steel post & wire mesh fence
3x Dongas to be removed
Shipping containers
Large iron shed
Concrete slab
Concrete Slab
Small iron shed
2x Shipping containers
Dirt stockpile
(To be removed)
Steel post & wire mesh fence
LEGEND
SURFACE LEVEL
SURVEY CONTROL
POWER POLE
INVERT LEVEL
METER BOX
TAP
TREE
SHED
CONCRETE
FENCE
WATER METER
TELSTRA MANHOLE
WATER TANK
BUILDING
EDGE OF DRAIN
DRAIN
EDGE OF BANK
BOTTOM OF BANK
BUILDING
EDGE OF UNSEALED ROAD
GARDEN BED
WALIS CAD
MAJOR CONTOUR (1m INTERVAL)
MINOR CONTOUR (0.25m INTERVAL)
SCALE 1:500 @ A3
0 5 10 15 20 25
ALL DISTANCES ARE IN METRES
The boundaries shown on this plan were not re-established as part of this survey. Therefore this plan does not guarantee their accuracy. Existing easements, encumbrances or interests are not depicted and a title search is recommended to obtain this information. Re-establishment of the cadastral boundaries is recommended for any proposed works on or near existing boundaries.
McMULLEN NOLAN
12 YANANA STREET
WEDGEFIELD
DETAIL SURVEY
CLIENT
ULTIMATE PROTECTIVE COATING
Project Mngr TREVOR VEEN
Datum PHD94 / AHD
97779-DE-001-A
A Initial Issue ADG 08/03/2013 TAV
Rev. Description Drawn Date Checked

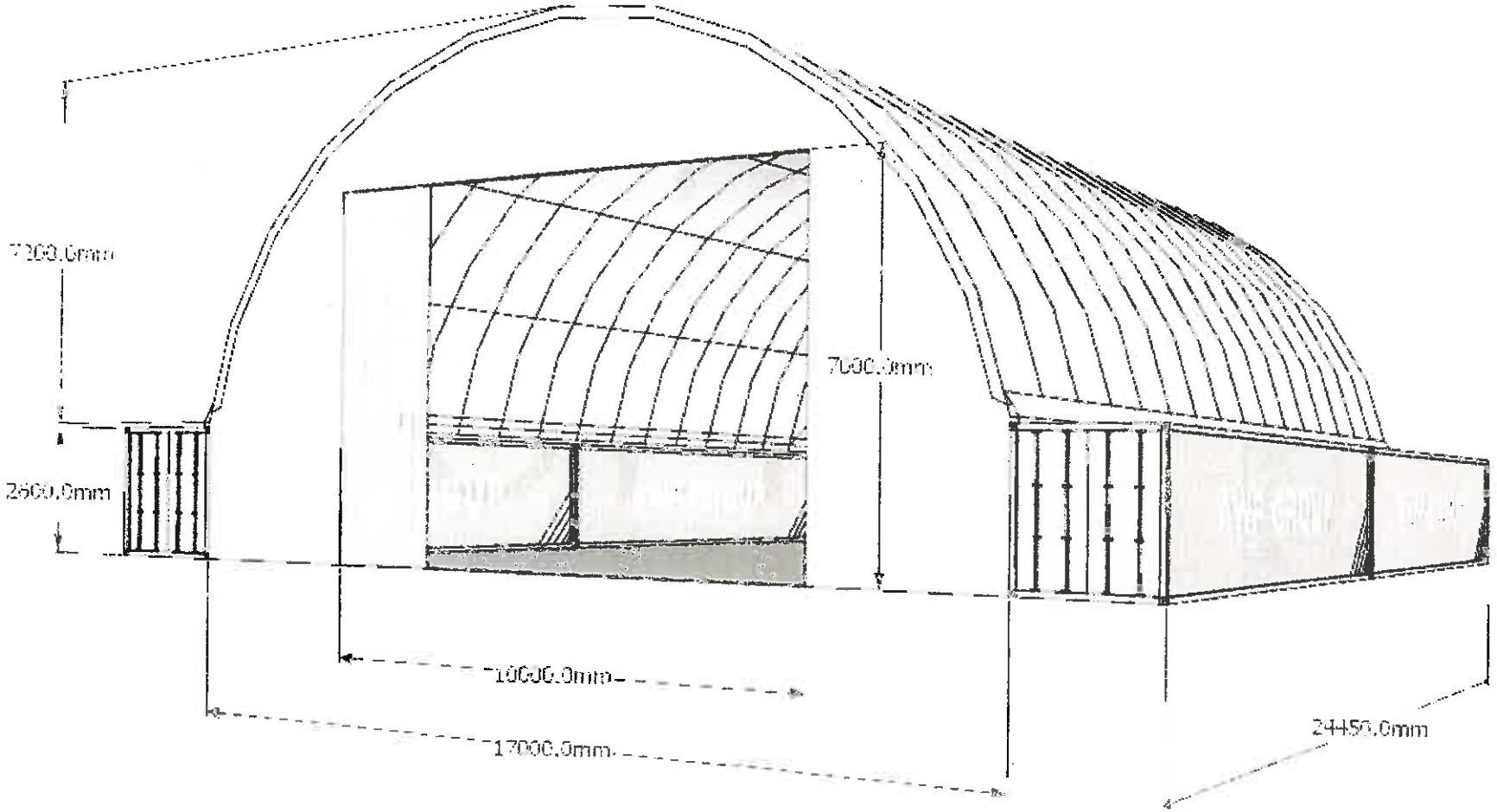

YANANA STREET
104.62
EXISTING IRON SHED 455m² FFL 5.46
PROPOSED SHIPPING CONTAINERS
PROPOSED DOME SHELTER 416m² FFL 5.46
EXISTING CONCRETE SLAB
PROPOSED SHIPPING CONTAINERS
76.43
31.34
LOT 2951
5637m²
FALL
COMPACTED GRAVEL HARDSTAND
PROPOSED LAYDOWN AREA
RETAINING WALL
EXISTING CROSSOVER
EXISTING CONCRETE SLAB
EXISTING IRON SHED FFL 5.47
EXISTING SHIPPING CONTAINERS
EXISTING WATER TANKS
113.93
EXISTING FLOOR AREA 455m²
PROPOSED FLOOR ARES 416m²
COMBINED FLOOR AREA 871m²
REQUIRED CARBAYS 1 per 50m² 17 BAYS REQUIRED
PROVIDED CAR BAYS 17 BAYS PROVIDED INCL. 1 DISABLED BAY
BLASTWORKS PTY LTD
LOT 2951 YANANA ST, WEDGEFIELD
Site Plan - Option 2
MAR 2013
1 : 200
A01
C
DKPM
Only use figured dimensions. Do not scale from drawings.



DomeShelter™

Picture is for illustrative purposes only, NOT FOR CONSTRUCTION. Design may vary with final draft

MODEL	ADITIONAL ITEM(S)
17W SuperRise x 24.4L	Framed Partial end wall

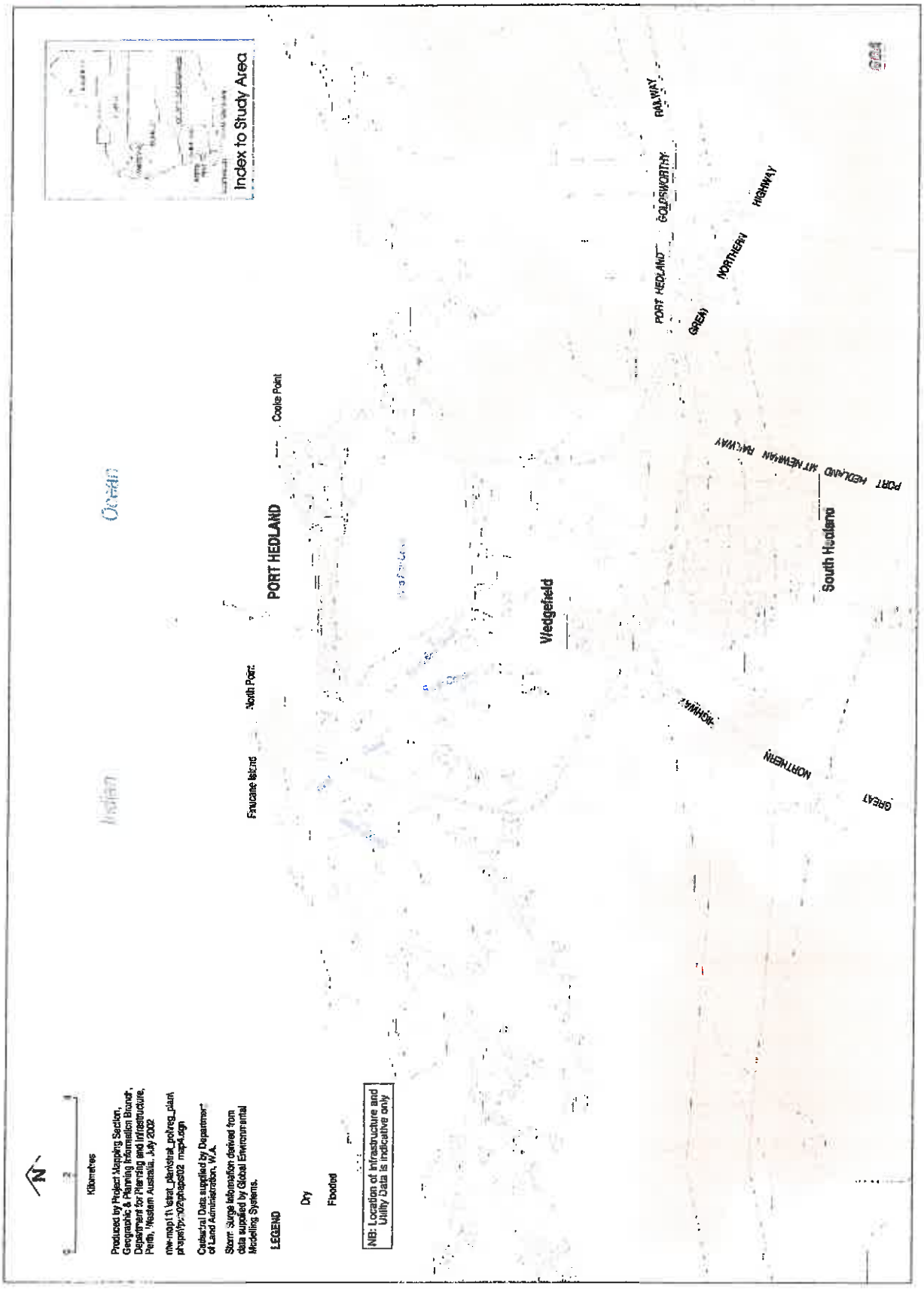


DomeShelter™

Picture is for illustrative purposes only, NOT FOR CONSTRUCTION. Design may vary with final draft

MODEL	ADITIONAL ITEM(S)
17W SuperRise x 24.4L	Full end wall with curtain door

Map 4: Combined Storm Surge and Flood Map (1 in 100 year return period)



APPENDIX D – ENVIRONMENTAL RISK ANALYSIS MATRIX AND ASPECTS AND IMPACTS REGISTER

Environmental Risk Analysis Matrix

	Severity	Minor (1)	Moderate (2)	Major (4)	Severe (8)
Frequency					
Common	5	Medium (5)	Medium (10)	High (20)	High (40)
Often	4	Low(4)	Medium (8)	Medium (16)	High (32)
Occasional	3	Low (3)	Medium (6)	Medium (12)	High (24)
Unlikely	2	Low (2)	Low (4)	Medium (8)	Medium (16)
Rare	1	Low (1)	Low (2)	Low (4)	Medium (8)

Definition

Frequency	**Likelihood of an environmental impact**
Common	Happens all the time (on every day or each time the activity occurs)
Often	Happens Often (almost every day or almost each time the activity occurs)
Occasional	Happens Occasionally (occurs on a number of occasions- 1 to 4 times a year)
Unlikely	Occurs only occasionally (once every 3 to 5 years)
Rare	Remotely possible (occurs in exceptional circumstances only)
Severity	**consequences of an environmental impact**
Minor	Could affect the environmental or the public but no impacts apparent
	Does not affect the legal compliance of relevant Acts and Regulation
	Public unaware, minor financial cost
Moderate	May contravene to the Environmental Protection Act/Regulations or other Act/Regulations
	No Public complaints or damage, Limited financial cost
	Environment known to be affected, probably in the short term
	No significant damage to animals and plants
Major	Contravenes the Environmental Protection Act or other Acts and Regulations
	Environment impacted badly, possible long-term impact
	Limited damage to animals and plants
Severe	Damage or death to animals and plants. Long term damage to the environment
	Contravenes the Environmental Protect Act and Regulations or other Acts and Regulations
	Many Public complaints and serious damage for company reputation
	Substantial financial cost to company

Environmental Aspects and Impacts Register

Operation/Activity	Aspect	Impact	Control Procedure	Risk				Relevant Code of Practice/Legislation/Regulations
				Frequency	Severity	Total Score	Risk	
Dry Abrasive Blasting								
	Inside blasting material	Dust generation	Blasting to be conducted in a blasting chamber/Dome 'Shed'	5	1	5	M	EP (Abrasive Blasting) Regs 1998. r.5 Blasting chamber will be completely sealed operating to ensure no visible dust escapes from the building chamber. EP (Metal Coating) Regulations 2001 r.9 No dust or powder escapes from the premises. Management Measures identified in the UPC (2012) Abrasive Blasting Operation Procedure.
	Inside blasting material	Noise generation	Blasting to be conducted in a blasting chamber/Dome 'Shed'	5	2	10	M	Proponent to establish and maintain a complaints register, any complaints received will be logged including environmental conditions on that day(wind speed and direction). Activities within the facility will only undertaken within approved operation hours. Equipment will be regularly serviced in accordance with manufactures instructions.
	Use of compressor/vacuum	Vibration	Compressor/vacuum located on rubber pads to limit the transfer of vibration. Equipment used within approved operating times.	5	1	5	L	
	Dry Bi- product waste	Soil contamination	Blasting waste to be cleaned up at the conclusion of each abrasive blasting operation and stored in appropriate containers. All waste material disposed of at an approved landfill or waste treatment facility. Proponent will retain receipts of waste removed from site for 3 years. There will be no discharge of prohibited material (i.e. paint) into the environment.	3	2	6	M	EP (Abrasive Blasting) Regs 1998. r 8 Waste Disposal, all waste material to be cleaned up at the conclusion of each operation, no waste material escapes from the premises at which blasting is carried on and all waste material is disposed of at an appropriate landfill site or waste treatment facility. EP (Controlled Waste) Regs 2004- retention of waste removed from site. EP (Unauthorised Discharge) Regs 2004. UPC (2012) Abrasive Blasting Operational Procedure.
Specialised Protective Coatings								
Paint storage	chemical/paint spillage	soil/groundwater contamination	Paint /Chemical Storage area covered and bunded (no stormwater will be able to enter the bunded area). MSDS for each chemical to be stored in the Office.	2	1	2	L	EP (Metal Coating) Reg 2001 r. 10 Area in which chemical used or kept, ensure that any area on premises in which a chemical that can cause pollution is used or kept is within a compound which has walls that are impervious to acid; has floor that is impervious to acid; and capable of holding 110% volume of the largest metal coating treatment tank/ not less then 25% of the total volume of the tanks within the compound. Also that stormwater does not enter the area on the premises where metal coating treatment tanks are located and not capable of overflowing or discharging from the area. Management measures for storage, handling and disposal are identified in UPC (2012) Hazardous Substance and Dangerous Goods Management Operational Procedure.
Spray painting	Use of spray equipment	Noise generation	Painting to be conducted in a spray booth/Dome 'Shed'	5	1	5	M	Proponent to establish and maintain a complaints register, any complaints received will be logged including environmental conditions on that day(wind speed and direction). Activities within the facility will only undertaken within approved operation hours.
	Use of spray equipment	Dust/Overspray Generation	Painting to be conducted in a spray booth/Dome 'Shed'	5	1	5	M	EP (Abrasive Blasting) Regs 1998. r.5 Blasting chamber will be completely sealed operating to ensure no visible dust escapes from the building chamber. EP (Metal Coating) Regulations 2001 r.9 No dust or powder escapes from the premises. Management Measures identified in the UPC (2012) Spray Painting Operational Procedure.
	Use of Paint	Odour	Painting to be conducted in a spray booth/Dome 'Shed'	5	2	10	M	Proponent to establish and maintain a complaints register, any complaints received will be logged including environmental conditions on that day(wind speed and direction).
	Waste products	Soil Contamination	Paint waste to be cleaned up at the conclusion of each spray painting operation and stored in appropriate containers. All waste material disposed of at an approved landfill or waste treatment facility. Proponent will retain receipts of waste removed from site for 3 years. There will be no discharge of prohibited material (i.e. paint) into the environment.	3	1	3	L	EP (Abrasive Blasting) Regs 1998. r.8 Waste Disposal, all waste material to be cleaned up at the conclusion of each operation, no waste material escapes from the premises at which painting is carried on and all waste material is disposed of at an appropriate landfill site or waste treatment facility. EP (Controlled Waste) Regs 2004- retention of waste removed from site. EP (Unauthorised Discharge) Regs 2004. UPC (2012) Spray Painting Operational Procedure.

Definitions (EP Abrasive Blasting)

Abrasive Blasting: Cleaning or abrading the surface of an object using an abrasive material propelled by compressed air, water or steam, or by a wheel

APPENDIX E – UPC OPERATIONAL PROCEDURES

ultimate protective coatings

HAZARDOUS SUBSTANCE & DANGEROUS GOODS MANAGEMENT OPERATIONAL PROCEDURE

Document Name:	Hazardous Substance & Dangerous Goods Management – Operational Procedure	**Document Number:**	1.4.2
Date Approved:	30th November 2012	**Authorised by:**	Ray Armstrong Operations Manager
Next Revision Date	30th November 2012	**Signed:**	

CONTENTS

1.0 PURPOSE

The purpose of this procedure is to provide guidelines and information to effectively manage hazardous substances and dangerous goods within UPC.

2.0 SCOPE

This procedure applies to all employees of UPC and contractors.

3.0 REFERENCES

- Federal and State Health and Safety Acts & Regulations, Mining Acts and Regulations Codes of Practice, and associated amendments and standards
- UPC's Safety Management Plan
- National Code of Practice for the Control of Hazardous Substances
- WA Dangerous Goods Safety Act
- WA Dangerous Goods Safety Regulations
- Various Australian Standards (Refer to Attachment A)

4.0 DEFINITIONS

Chemical means any of the following:

1. any hazardous substance;
2. any dangerous goods;
3. agricultural and veterinary chemical including any plant growth regulatory material and any pest destroyer other than a lure. The term includes fertilisers, pesticides and chemicals;
4. any substance contained in a schedule of the Standard for Uniform Scheduling of Drugs and Poisons (SUSDP).

Designated Hazard Substance means a substance known as hazardous if listed in the National Occupational Health and Safety Commission's (NOHSC) publication, List of Designated Hazardous Substances.

Hazardous Substances means a designated hazardous substance for which its supplier must give an employer a current MSDS.

Specified Dangerous Goods means a substance or item specifically listed in the ADG Code.

AGD Code means the document known as the Australian Dangerous Goods Code.

Container means a thing (other than a bulk container or tank) in which a hazardous substance is, or has been, completely or partly cased, contained, covered, enclosed or packed, but does not include an enclosed system.

Control measures means the way of preventing or minimising a person's exposure to a substance.

Exposure means the contact between a person and a chemical. The chemical may be in the form of a gas, vapour, fume, liquid or solid.

Exposure Standard means an acceptable exposure level of an airborne concentration for a particular substance in a workers' breathing zone, which should not cause adverse health affects.

Health Surveillance means the monitoring of a person to identify changes in a person's health because of expose to a hazardous substance.

Material Safety Data Sheet (MSDS) is a document that gives important information about a hazardous substance. This information includes the chemical and physical properties of the substance; health hazards; precautions for safe use and handling; and the manufacturer or importer's contact details.

Use includes handling, production, storage, movement, decanting and disposal of the substance, but does not include the carriage of a substance.

5.0 RESPONSIBILITIES

It is all staff's responsibility to ensure correct hazardous substance management. Specific responsibilities for monitoring hazardous substances rest with Managers and Supervisors.

6.0 PROCEDURE

6.1 HAZARDOUS SUBSTANCES

The National Code of Practice for the Control of Hazardous Substances should be referred to in conjunction with the use of this procedure.

Risk Assessment

1. Prior to purchasing hazardous substances or dangerous good, the Supervisor is to conduct a risk assessment for each new hazardous substance;
2. Use the specific Hazardous Substance & Dangerous Goods Risk Assessment Instructions and Form found in the relevant Australian Standard;
3. Always conduct a risk assessment before any controls are implemented and a risk assessment after the controls are implemented to ensure the risk has been reduced;
4. UPC will assess the risk to the health of employees from any hazardous substance and dangerous good that is used, or is to be used at a workplace;
5. The risk assessment must be done:
   (a) As soon as practicable after it is used;
   (b) Within 5 years of the last assessment; and
   (c) Where any of the following happen at the workplace:
      (i) a work practice involving a substance is significantly changed;
      (ii) new information about the substance's hazards id available;
      (iii) health surveillance shows control measures need to be reviewed; and
      (iv) new control measures are implemented.
6. The risk assessment must include a review of the MSDS resulting in all the boxes being ticked on the relevant Hazardous Substance & Dangerous Good Risk Assessment form;
7. As part of the risk assessment, the Supervisor is to:
   (a) Assess the risk to health from a hazardous substance that is used, or is to be used at the workplace using the 'Hazardous Substance & Dangerous Good Risk Assessment Guide' (refer to the process on Attachment B);
   (b) Suggest control options and document this assessment on the 'Hazardous Substance & Dangerous Good Risk Assessment Form';
   (c) Consider the types of control measures required for handling, storage, use and disposal of the substance or goods;
   (d) Re-assess all elements examined in the assessment, if an incident occurs at the workplace;
   (e) Review the risk assessments conducted, within 5 years following the last assessment;
   (f) Keep the risk assessment record for 5 years if the risk assessment shows a hazardous substance's or dangerous good use does not cause a significant degree of risk to health; and
   (g) keep the risk assessment record, monitoring result and health surveillance report for 30 years if the risk assessment shows a hazardous substance's or dangerous good use causes a significant degree of risk to health.

6.2 PURCHASING OF HAZARDOUS SUBSTANCE & DANGEROUS GOODS

Refer to Admin Procedure 1.1.11 - Purchasing for full detail.

6.3 HAZARDOUS SUBSTANCE REGISTER

1. When compiling a hazardous substance register a survey should be conducted on all substances in the workplace. Refer to Attachment G for the Hazardous Substance Register;
2. Once all substances are identified, the MSDS's are to be obtained;
3. The hazardous substance register should contain:
   - The survey sheet identifying the substances for that workplace;
   - A copy of all MSDS's at that workplace;
   - The associated risk assessments for the MSDS, if generic risk assessments; and
   - An index or inventory list of the content of the folder.
4. The register is to be made available to all staff.

6.4 DANGEROUS GOODS MANIFEST

1. The manifest is designed to inform Emergency Services personnel of the types, quantities and locations of all dangerous goods at the workplace;
2. The manifest is to include:
   - The name of the occupier of the Large Dangerous Goods location;
   - The address;
   - The date the manifest was prepared pr last revised;
   - Contact details of at least 2 persons in the event of an incident;
   - The survey sheet identifying the dangerous goods for that workplace;
   - A copy of all MSDS's at that workplace;
   - The associated risk assessments for the MSDS, if generic risk assessments; and
   - An index or inventory list of the content of the folder.
   - A site plan of all stored dangerous goods;
   - The identification name, number, type and capacity of the storage tanks; and
   - Emergency plans and procedures.
3. The manifest is to be kept in a red weatherproof container inside, an as close as practicable to the main entry; and
4. The cabinet is to be adequately signed for easy identification.

6.5 IDENTIFYING AND NOTIFYING OF DANGEROUS GOODS LOCATIONS

1. A survey must be conducted to ascertain the class of dangerous goods location the workplace will be classified under; and
2. The Chief Executive (Emergency Services or like position) must be notified on the approved form of the workplace is classified as a large dangerous goods location refer to Dangerous Goods Location Identification Chart on Attachment 5.

6.6 LABELLING

1. In the event of decanting a substance or good into smaller container, the supervisor is to ensure a label is affixed to a hazardous substance or dangerous goods container. For an example of a hazardous substance label / sticker that is to be used, refer to Attachment 3 or from CHEMWATCH;

2. The label is to be in English and state the substance's product name, risk and safety phrases (e.g. 'Keep away from heat');
3. If a hazardous substance or dangerous good is transferred from one container into a second container, the container must be labelled stating:
    - the substance's or good's product name;
    - substance's or good's risk and safety phrases; and
    - relevant warning signs/ information

6.7 UNLABELLED SUBSTANCES

1. All substances and goods must be labelled. If containers are not labelled and the contents are not known mark the container - "Caution do not use: unknown substance". Store the container away from other substances or goods and if not identified, contact the local Waste Management Branch of the Department of Environment for appropriate disposal procedures.

6.8 WARNING PLACARDS (SIGNAGE)

1. Correct signage must be displayed where hazardous substances and dangerous goods are stored (discuss with the supplier of the substances or goods);
2. HAZCHEM and the warning placards must be clearly visible by any person approaching the entrance of the workplace; and
3. Check signs regularly to ensure they have not faded.

6.9 STORAGE

1. The Supervisor is to ensure that the storage of a hazardous substance and dangerous goods is in accordance with the MSDS. If appropriate storage facilities are not available, the substances or goods should not be purchased unless the material can be stored at an alternative approved storage site;
2. The Supervisor must ensure that hazardous substances, dangerous good or combustible liquids that are not compatible with other substances, goods or liquids are stored separately (refer to Attachment G);
3. Correct signage should also be displayed where hazardous substances and dangerous goods are stored.

6.10 TRAINING

1. Management must give the employees who may be exposed to a hazardous substance at a workplace, induction and on-going training about the substance;
2. Employees are to be trained in relation to the following:
    - the introduction of new substances or goods to the workplace;
    - the identification of risks associated with the hazardous substance or dangerous good at the workplace;
    - the assessment of risks associated with substances or goods and the control measures to be implemented;
    - advice to any workers with potential exposure to a particular hazardous substance or dangerous good;
    - on the use of MSDS;
    - equipment used with hazardous substances and dangerous goods;

- employee's obligations;
- the appropriate PPE is to be used whilst using a hazardous substance or dangerous good and personal safety; and
- emergency procedures for chemical spills and identification of first aid personnel.

6.11 TRAINING RECORDS

1. The training records must contain the date the training was conducted, the topics dealt with, the name of the person who conducted the training and the names of the employees who attended the training;
2. The Training Officer and/or Supervisor is to ensure a record is kept of training including induction for **5 years**;
3. Staff are to be advised of the hazardous substance requirements through conducting a toolbox talk;
4. Health surveillance report should be kept for 30 years where, the risk assessment shows a hazardous substance's use can cause a significant degree of risk to health.

6.12 HANDLING, USE AND DECANTING SUBSTANCES OR GOODS

Supervisors are to ensure that:

1. The requirements set out in the MSDS are followed;
2. A copy of the MSDS is to be kept as close enough to the substance or good being used to allow the worker to refer to it easily;
3. A copy of the MSDSs for all chemicals carried on vehicles will be compiled in a folder and placed in the vehicle;
4. Decanting is to be conducted using the method identified in the appropriate MSDS;
5. Substances are not to be de-canted into food or drink containers;
6. Personal protective equipment, is provided where it is not practicable to prevent or reduce exposure by other ways;
7. Other control measures such as ventilation equipment that is implemented, is maintained as required;
8. Regular monitoring is conducted where the risk assessment identifies it is required; and
9. Prohibited substances are not used in the workplace.

6.13 DISPOSAL

1. Surveys/inspections should be conducted at all workplaces to identify the hazardous substances and dangerous goods used and stored at the workplace, and to identify the products no longer required which should be disposed of;
2. The relevant MSDS of each substance or good identified for disposal should be reviewed to establish the appropriate disposal method;
3. Containers of hazardous substances and dangerous goods should not be washed out in areas where there is a possibility of waste solution entering a storm water drain or natural water–course; and
4. All personal protective equipment precautions should be taken into consideration when disposing of a hazardous substance or dangerous good.

6.14 TRANSPORTING HAZARDOUS SUBSTANCES

1. Supervisors are to ensure that hazardous substances and dangerous goods are transported correctly when they are required within workplace according to the MSDS.

6.15 EMERGENCY PROCEDURES

1. Emergency plans and procedures are to be developed for large dangerous goods locations that include:
   - the actions in the case of a leak, spill or uncontrolled release of hazardous substance(s);
   - The effect it could have on the surrounding community.

6.16 SMALL SPILLS

1. All personnel not directly involved with the spill are to be removed from the leak or spill area;
2. The person using the substance or goods to inform the Supervisor of the leak or spill;
3. The person is to refer to the relevant MSDS and follow instructions relating to the leaks or spills;
4. First Aid is to administrated if substance or good has injured or made ill any personnel;
5. Spill kits are to be used to clean up spills and these kits are to be placed at convenient locations around the workplaces;
6. The appropriate P.P.E. is to be used when cleaning up the spilt substance/s or good; and
7. The contaminated substance and material should be disposed of according to the instructions given in the MSDS.

6.17 LARGE SPILLS

1. Contact the Manager / Supervisor immediately and inform them of the situation;
2. Close off the area to all personnel and the general public;
3. Personnel using the substance or goods are to inform the Supervisor what substance has leaked, spilled or become uncontrollable; and the location of the leak or spill;
4. The Supervisor is to read the appropriate MSDS and follow the instructions relating to the particular substance or good;
5. Control the spill where possible (whilst not putting any personnel at harm);
6. Emergency Services or relevant officials should be contacted;
7. Monitor the effected personnel and worksite after the incident has occurred to ensure no further hazards are presents; and
8. Report incident on the incident Report form to ensure there are no further occurrences.

6.18 GAS LEAK

1. The Manager / Supervisor of the workplace is to be contracted immediately and informed of the situation; and
2. Start emergency evacuation arrangements, refer to the Emergency Procedure

6.19 HEALTH SURVEILLANCE

1. *UPC* must arrange for health surveillance of the employees who a risk assessment who has been exposed to a hazardous substance if:
   - the substance is listed in legislation and the degree of risk is significant (refer to Attachment D); or
   - an identifiable adverse health effect may be related to the exposure.

2. Consideration should be given to maintaining worker's health and records should be made of the results, this will depend on the exposure to substances;
3. Risk assessment records, monitoring results and health surveillance report should be kept for 30 years where, the risk assessment shows a hazardous substance's use can cause a significant degree of risk to health.

7.0 RELATED DOCUMENTS

- Admin Procedure 3.5 - Purchasing
- Refer to Hazardous Substance Risk Assessment Form Relevant Australian Standards for Hazardous Substance & Dangerous Goods (Attachment A)
- Overview of the process for the assessment of health risk arising from the use of hazardous substances at a workplace – Flowchart (Attachment B)
- Hazardous Substance Label (Attachment C)
- Hazardous Substances for which Health Surveillance must be Supplied (Attachment D)
- Dangerous Goods Location Identification Chart (Attachment E)
- Hazardous Substance Management Register (Attachment F)
- Guide for Storage Chart (Attachment G)

8.0 RECORDS CONTROL

This procedure is to be reviewed every 12 months and amended as required in accordance with the Document Control Procedure.

9.0 APPENDICES

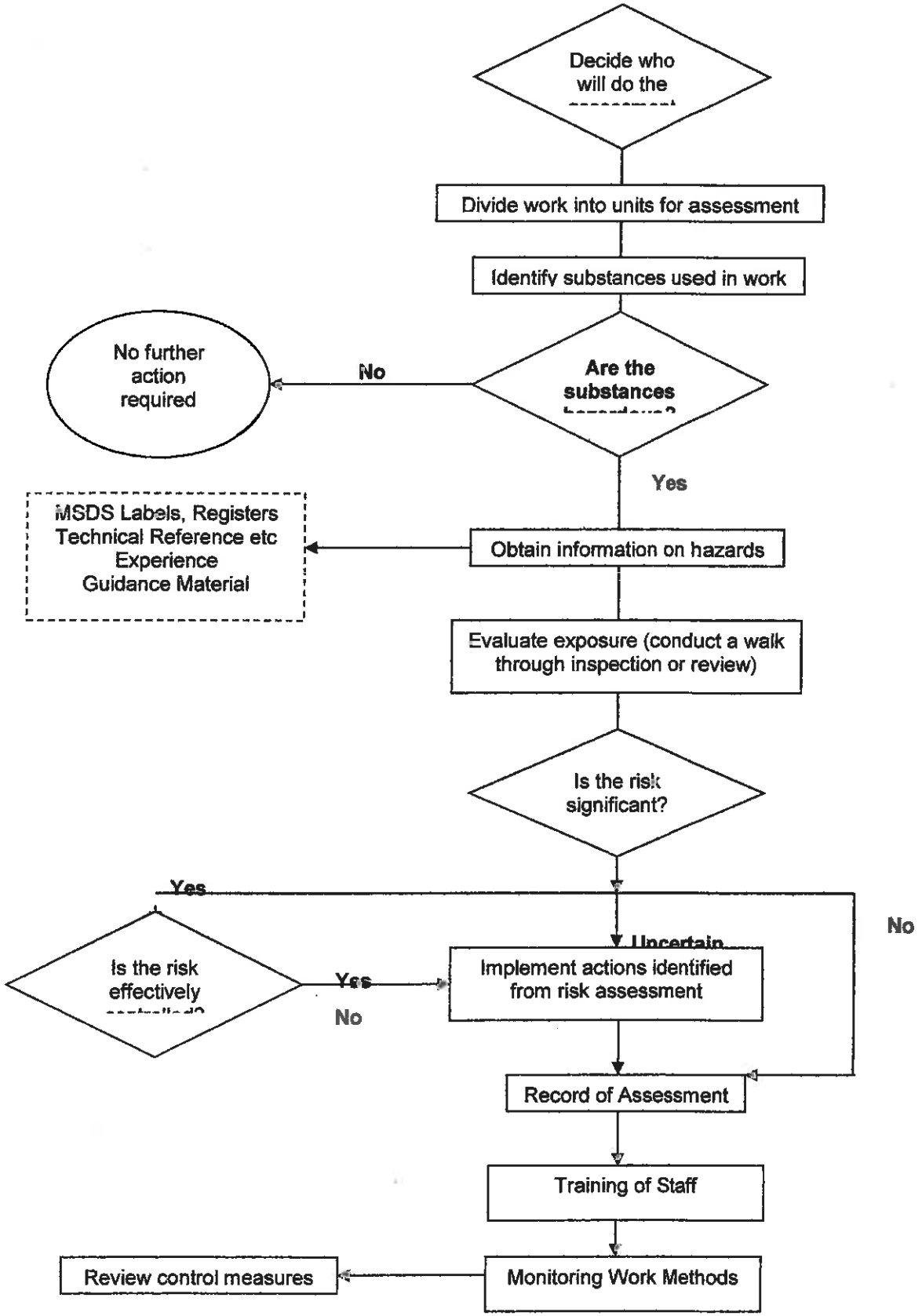
9.1 APPENDIX 1 - AUSTRALIAN STANDARDS

The Following Australian Standards may be accessed to assist with hazardous substances and dangerous goods management.

AS 1596	2002	The storage and handling of LP Gas
AS 4332	2004	The storage and handling of gases in cylinders
AS 1984	1997	The storage and handling of non-flammable cryogenic and refrigerated liquids
AS 2022	2003	Anhydrous ammonia – storage and handling
AS 2927	2001	The storage and handling of liquefied chlorine gas
AS 1940	2004	The storage and handling of flammable and combustible Liquid
AS 4326	1995	The storage and handling of oxidizing agents
AS 2714	1993	The storage and handling of hazardous chemical materials - Class 5.2 substances (organic peroxides)
AS/NZS 4452	1997	The storage and handling of toxic substances
AS 3780	1994	The storage and handling of corrosive substances
AS/NZS 4681	2000	The storage and handling of Class 9 (miscellaneous dangerous goods and articles)
AS 2507	1998	The storage and handling of agricultural and veterinary chemicals
AS/NZS 3883	1998	The storage and handling of mixed classes of dangerous goods on packages and intermediate bulk containers
AS 2430.3.1	1997	Classification of hazardous areas - General
AS 2430.3.3	1997	Classification of hazardous areas - Flammable Liquids
AS 2430.3.4	1997	Classification of hazardous areas - Flammable Gases
AS 2057	1984	The storage and handling of Pesticides

9.2 APPENDIX 2 - ASSESSMENT OF HEALTH RISKS

OVERVIEW OF THE PROCESS FOR THE ASSESSMENT OF HEALTH RISKS ARISING FROM THE USE OF HAZARDOUS SUBSTANCES AT A WORKPLACE



9.3 APPENDIX 3 - HAZARDOUS SUBSTANCES LABELS

Hazardous Substances Label (Instructions on 'How to use this label' is to be placed on the sticker's back cover) – SAMPLE ONLY

UPC

Hazardous Substances & Dangerous Goods

Product Name:_____

Chemical Name:_____

Class Type: _____

CLASS

PPE Required (Please Tick)	YES	NO
Respirator	☐	☐
Eye Protection	☐	☐
Face Shield	☐	☐
Gloves	☐	☐
Overalls	☐	☐
Apron	☐	☐
Footwear	☐	☐

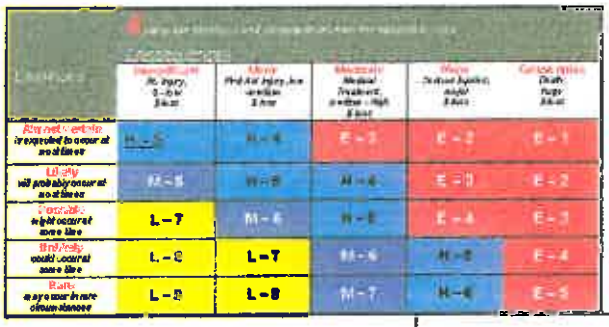
Emergency Contact Number:

Poisons Information Centre

13 11 26

Please refer to Material Safety Data Sheet for use, First Aid, Storage and Disposal details before any use of this product

RISK ASSESSMENT CALCULATOR



Control Measures / safety information:_____

_____

Risk Management
Identify
Assess
Control
Review

HOW TO USE THIS LABEL

Refer to the MSDS for following steps:

CLAS S

Step 1: Write down the name of the product (e.g. Caustic Soda) and Chemical name if available.

Step 2: Write down the Class Number in the class diamond.

Step 3: Write down the Class Type (e.g. Corrosive).

Step 4: Read the MSDS for use, first aid, storage and disposal instructions.

Step 5: Conduct a Risk Assessment and Identify the Control Measure for use / safety information.

Step 6: Identify the correct P.P.E. for use with this product.

Step 7: Affix label to container.

9.4 APPENDIX 4 - HEALTH SURVEILLANCE

Hazardous Substances for which Health Surveillance must be supplied

Hazardous Substance	Hazardous Substance
Acrylonnitrile	Inorganic Mercury
Asbestos	Isocyanates
Benzene	Organophosphate Pesticides
Cadmium	Pentachlorophenol (PCP)
Creosote	Polycyclic Aromatic Hydrocarbons (PAH)
Crystalline Silica	Thallium
Inorganic Arsenic	Vinyl Chloride
Inorganic Chromium	

Prohibited Substances

Hazardous Substance	Prohibited Purpose
Amosite, Crocidolite, Fibrous Anthophyllite, Tremolitr or Actinolite	All uses, other than sampling, analysis, maintenance, removal, disposal, encapsulation or enclosure
Chrysotile	Spraying

9.5 APPENDIX 5 - DANGEROUS GOODS LOCATIONS

Dangerous Goods Location Identification Chart (from Schedule 1 of the DGSM Regulation)

Item	Column 1	Column 2	Column 3	Column 4
Item	*Dangerous Goods or Combustible Liquids*	*Packing Group*	*Quantity for Dangerous Goods Location*	*Quantity for a Large Dangerous Goods Location*
1.	Class 2			
	- Class 2.1	Not Applicable	500 L	5,000 L
	- Class 2.2			
	- Subsidiary risk 5.1	Not Applicable	2,000 L	10,000 L
	- Class 2.2 - other	Not Applicable	5,000 L	10,000 L
	- Class 2.3	Not Applicable	50 L	500 L
	- Aerosols	Not Applicable	5,000 L	10,000 L
	- Cryogenic Fluids	Not Applicable	1,000 L	10,000 L
2.	Any one of Class 3,4.1, 4.2, 4.3, 5.1, 5.2, 6.1 or 8	I	50 Kg or L	500 Kg or L
		II	250 Kg or L	2500 Kg or L
		III	1,000 Kg or L	10,000 Kg or L
		Mixed Packing Groups in a single Class with a quantity of each Packing Groups below the quantity specified for the Packing Group	1,000 Kg or L	1,000 Kg or L
3.	Class 9	II	1,000 Kg or L	10,000 Kg or L
		III	5,000 Kg or L	10,000 Kg or L
		Mixed Packing Groups in Class 9 with the quantity of each Packing Group below the quantity specified for the Packing Group	5,000 Kg or L	10,000 Kg or L
4 (a).	Mixed Classes of stated dangerous goods where none of the Classes, types, or Packing Groups (if any) present, exceed the quantities specified in Items 1, 2 and 3 of this Table.	Not Applicable	2,000 Kg or L Where the quantity specified in this Schedule for each of the Classes is 2,000 Kg or less.	10,000 Kg or L
4 (b).	Mixed Classes of stated dangerous goods where none of the Classes, types, or Packing Groups (if any) present, exceed the quantities specified in Items 1, 2 and 3 of this Table.	Not Applicable	5,000 Kg or L Where the quantity specified in this Schedule for one or more of the Classes is 5.000 Kg and the Placarding is not required for Item 1, 2,3 and 4(a).	10,000 Kg or L
5.	Goods too Dangerous to be Transported	Not Applicable	5 Kg or L	50 Kg or L
6.	Combustible liquids with fir risk dangerous goods.	Not Applicable	1,000 Kg or L Includes both C1 and C2	10,000 Kg or L Includes both C1 and C2
7.	C1 Combustible liquids	Not Applicable	10,000 Kg or L In a tank – 50,000 L In packages – 50,000 L In tanks and Packages combined provided the quantity of C1 in tanks does not exceed 10,000L	100,000 Kg or L In tanks or packages

How to Calculate quantities of stated dangerous goods (DG) or combustible liquids in packages:

1. For non-liquid stated DG (other than class 2) calculated by net mass in Kg.
2. For liquid DG (other than class 2) or combustible liquids calculated by the net capacity.
3. For class 2 stated DG calculated by the total capacity.

9.6 APPENDIX 6 - SUBSTANCE MANAGEMENT REGISTER

Location _____ **Signature**_____
Date___/___/_____

Substance – Common or Chemical Name	ID No.	Class	Quantity Held	Container (Size/Type)	Purpose/ Use	Risk Assessment completed (Date & Name)	Hazardous Yes / No	MSDS Yes / No	PPE Yes / No

NB: This form can also be used as a survey for identifying substances at the workplace

9.7 APPENDIX 7 - GUIDE FOR STORAGE CHART

(This is a guide only further information must be sought for specific storage arrangement)

Class	Description	Example	1	2.1	2.2	2.3	3	4.1	4.2	4.3	5.1	5.2	6	7	8	9
1	Explosives	Detonators	◆	X	X	X	X	X	X	X	X	X	X	X	X	X
2.1	Flammable Gas	LP Gas	X				□	X	X	X	X	X		X		
2.2	Non-Flammable Gas	Oxygen	X						X			X				
2.3	Poisonous Gas	Chlorine Gas	X				X		X		X	X				
3	Flammable Liquid	Petrol	X	□		X			X		X	X	⊖	X		
4.1	Flammable Solid	Sulphur	X	X					X		X	X		X		
4.2	Spontaneously Combustible	White Phosphorous	X	X	X	X	X	X			X	X		X		
4.3	Dangerous when Wet	Calcium Carbide	X	X							X	X		X	X	
5.1	Oxidising Agent	Calcium Hypochlorite	X	X		X	X	X	X	X	X	X	⊖	X	X	⊖
5.2	Organic Peroxide	Ethyl Ketone Methyl Peroxide	X	X	X	X	X	X	X	X	X		⊖	X	X	⊖
6	Poisons & Harmful Substances	Potassium Cyanide	X			⊖					⊖	⊖			⊖	
7	Radioactive Substances	Isotopes	X	X			X	X	X	X	X	X			X	
8	Corrosives	Sulphuric Acid	X							X	X	X	⊖	X		
9	Miscellaneous Dangerous Goods	Dry Ice	X								⊖	⊖				

Notes: X Must not be stored together

◆ Refers to special requirements for explosives

⊖ Some combinations must not be stored together – further information needs to be sought

□ Bulk storage requirement apply *(referenced The Div WH&S Pamphlet ' Storage of Dangerous Goods')*

ultimate protective coatings

ABRASIVE BLASTING OPERATIONAL PROCEDURE

Document Name:	Abrasive Blasting – Operational Procedure	**Document Number:**	1.8.8
Date Approved:	30th November 2012	**Authorised by:**	Ray Armstrong Operations Manager
Next Revision Date	30th November 2013	**Signed:**	

CONTENTS

1.0 PURPOSE

This procedure details the specific requirements of abrasive blasting.

2.0 SCOPE

This procedure applies to:

- Client site where abrasive blasting is being carried out;
- All UPC personnel who may be exposed to hazards arising from abrasive blasting in workplaces;
- UPC workplaces where:
    - abrasive blasting products are used;
    - processes associated with abrasive blasting are undertaken; and
    - abrasive blasting products and equipment are stored

3.0 REFERENCES

- The Occupational Safety and Health Act 1984
- Occupational Safety and Health Regulations 1996
- The Environmental Protection Act 1986
- Code of Practice – Abrasive Blasting June 2000
- Environmental Protection (Abrasive Blasting) Regulations 1998
- UPC Safety Management Plan
- UPC Environmental Management Plan
- UPC Risk Register

4.0 DEFINITIONS

Abrasive blasting is used for cleaning surfaces such as steel, bricks, cement and concrete usually to remove scale, rust, old paint or other matter before applying a protective coating. Abrasive blasting involves using a stream of abrasive material, propelled at high speed by compressed air, water, steam, centrifugal wheels or paddles against a surface, to clean, abrade, etch or otherwise change the original appearance or condition of the surface. It includes high pressure water and steam blasting incorporating abrasive material.

5.0 RESPONSIBILITIES

- It will be the responsibility of UPC to ensure that the conditions are met to ensure that no visible dust escapes lease boundaries as per the Environmental Protection (Abrasive Blasting) Regulations 1998
- The Supervisor overseeing the work performed is responsible for ensuring all safety and environmental requirements are implemented.
- Experienced and Trained Blaster will undertake blasting and painting activities.
- Trained Assistants will operate the compressor and blasting equipment, controlling start up and shut down when advised to by the Blaster.

6.0 PROCEDURE

6.1 HAZARD IDENTIFICATION

The abrasive blasting process itself is a hazardous operation. As the operator or blaster is directing a stream of abrasive material by a nozzle on the end of a long length of heavy, reinforced flexible hose, there is a danger that the operator may accidentally direct the shot at themselves, thereby causing an injury. As well as the danger from the abrasive material, there are other hazards such as static electricity, working in a confined space and manual handling that need to be eliminated or controlled.

While some of the hazards associated with abrasive blasting are widely known and recognised, the Occupational Safety and Health Regulations 1996 outline three steps to be followed in workplaces:

- Hazard identification – identifying situations where employees and visitors may be exposed to injury or harm;
- Risk assessment – working out which parts of the process or activity are more likely to cause injury or harm, and how serious the injuries or harm might be; and
- Risk reduction – taking action to prevent the injury or harm.

The responsibility for completing the three steps rests with the person who is the employer, main contractor, a self-employed person or the person with control over the workplace or access to it. Known hazards include hazardous substances, dusts and hazards associated with plant and equipment.

6.2 SUBSTANCES

1. Substances that **can** be used for abrasive blasting:
    a. Copper slag;
    b. Aluminium oxide;
    c. Copper slag ;
    d. Metal abrasive;
    e. Aluminium oxide;
    f. Plastic beads;
    g. Zinc slag;
    h. Sodium bicarbonate;
    i. Metal shot;
    j. Nickel slag; and
    k. Garnet.

2. Substances that **are prohibited** (Regulation 3.107, 5.14 and Schedule 5.2 of the Occupational Safety and Health Regulations 1996) for use for abrasive blasting:
    a. Any substance that consists of or contains 2% or more dry weight of crystalline silicon dioxide as a contaminant. This includes:
        1. river sand;
        2. beach sand or any white sand;
        3. pool filter material (diatomaceous earth); and
        4. dust from quartz rock.

    b. Any substance that contains more than:
        1. – 0.1% antimony;
        2. – 0.1% arsenic;
        3. – 0.1% beryllium;
        4. – 0.1% cadmium;
        5. – 0.5% chromium;
        6. – 0.5% cobalt;
        7. – 0.1% lead;

8. – 0.5% nickel; or
9. – 1.0% tin.

c. Any substance containing a radioactive substance.

d. Any substance used in wet abrasive blasting containing:
   1. – chromate;
   2. – nitrate; or
   3. – nitrite

e. Any recycled material that has not been treated to remove irrespirable dust.

f. Any substance capable of causing harm to the upper respiratory tract of a person.

6.3 PLANT AND EQUIPMENT

6.3.1 PLANT UNDER PRESSURE

Abrasive blasting requires certain plant to be operated under pressure. Primarily these are air receivers and blasting hoppers. The responsibilities of the employer in relation to this type of plant include:

a) Ensuring any air receiver or blasting hopper used at the workplace is of a design registered under Part 4 of the Occupational Safety and Health Regulations 1996;
b) In-service inspections are carried out in accordance with the manufacturers' specifications or AS/NZ 3788 Pressure equipment – In-service inspection;
c) Pressure vessels are operated only by persons trained in their use;
d) All fittings are of equivalent rating to the pressure vessel and are correctly attached;
e) Blow-down procedures are developed and implemented;
f) Where air supply is from a local air compressor an electrical cut-off control is fitted and regularly checked; and
g) A safety relief valve is fitted and regularly checked.

6.3.2 BLAST NOZZLE

The equipment used for abrasive blasting should be designed so that the person operating the nozzle can control the flow of abrasive material through the nozzle. Procedures or a mechanism should be in place to stop the flow of abrasive material in an emergency. (Dead man switch)

Three person operations are to be used during all UPC abrasive blasting operations performed on piles under wharf.

The blast nozzle is a key piece of equipment in abrasive blasting. It must be fitted with an automatic cut-off device or electronic toggle switch. This is particularly important if the operator accidentally drops or loses control of the blast nozzle. An automatic cut-off device, sometimes known as a dead man control, should be used and maintained in accordance with the manufacturer's instructions. Where the controls are not directly attached to the blast hose, a designated "dead man spotter" must be in place as per section 6.12. The controls must not be disabled or removed to allow continuous function. This is especially important where abrasive blasting is being conducted:

a) In a confined space;

b) Where the persons performing the work are working above ground level and there is risk of falling.

6.3.2 HOSES

All hoses used for abrasive blasting are to be specifically designed for the purpose of abrasive blasting. The abrasive blasting hoses that UPC uses are to be:

a) Made of impregnated carbon to prevent electric shock or fitted with an earth wire or similar earthing system if they are made of any other material;
b) Fitted with hose whip checks or hose coupling safety locks or both;
c) Kept as straight as possible. Long gradual curves should be used where hoses have to negotiate objects or equipment. Sharp curves may cause rapid wear on the hose resulting in damage and possibly malfunction;
d) Positioned in locations where they are not subjected to damage, fouling or restrictions such as from vehicles, buildings or fences.
e) Floatation devices to be fitted to all hoses while working under wharf area.

6.4 TOOLS AND EQUIPMENT

6.4.1 GENERAL TOOLS:

a. Assorted spanners, small and large;
b. Phillips head screwdrivers, small and large;
c. Flat nose screwdriver, small and large;
d. Stilsons (pipe wrenches), small and large;
e. Vice/multi grips;
f. Retracting safety knife;
g. Ball peen hammer;
h. Wire brush (gun cleaning); and
i. Paint Scrapers.

6.4.2 BLASTING EQUIPMENT:

a. Compressor;
b. Blast hopper;
c. Garnet;
d. Blast lines;
e. Whip checks, 'D' shackles and clips;
f. Blast nozzle;
g. Breathing Air Filter;
h. Breathing lines;
i. Helmet Cooler;
j. Blast Helmet;
k. Blast Helmet visor spares;

6.4.3 PPE:

a. Safety Glasses;
b. Life jackets:
c. Overalls and high visibility clothing
d. Gloves (leather – rigger);
e. Hearing protection and spares;

f. Hard hat visor plus spares;
g. Respirators (P2) –plus spares;
h. Radios if required;
i. Mobile phones (backup);
j. Bunting (exclusive control tape);
k. Blasting and Painting Warning' signage;
l. Green Access tags; and
m. Cool water and esky.

6.4.4 MOBILE PLANT:

a. Tray top truck with mounted compressor and abrasive blasting equipment;
b. Utility shuttle vehicle; and
c. Stand by boat;
d. All pre-start checks to be carried out daily prior to the use of any equipment.

6.5 BLASTING SAFETY

6.5.1 GENERAL

a. Only authorised personnel shall be permitted to enter the work area whilst abrasive blasting is in progress. Correct protocols to be used when authorised personnel are accessing or passing the abrasive blasting operation;
b. If required to approach the abrasive blasting or painting, remain at a safe distance and do not proceed until eye contact has been made with the operator or dead man operator and the nozzle and spray gun has been laid down;
c. Wear gloves at all times whilst working;
d. If lighting is poor, do not proceed until adequate lighting is installed ;
e. If any injury occurs it must be reported immediately to a supervisor or first aid officer. All injuries must be recorded in the injury register;
f. Anyone in the area of blasting must wear Class 5 hearing protection; and
g. A JHA and Take 5 assessment is to be completed prior to blasting.

6.5.2 NOISE

a. Hearing loss is a major risk when abrasive blasting. Excessive noise can affect the ear's ability to hear. Effects may range from temporary loss of hearing, deafness from prolonged exposure and tinnitus (ringing in the ear).
b. Workers may be exposed to high noise levels that originate from the:

    1. Abrasive discharge nozzle;
    2. Impact of abrasive on the substrate;
    3. Dust exhaust systems;
    4. Air inlet of the breathing helmet;
    5. Air compressor; or
    6. Air in the helmet.

c. Hearing protection is to be worn to reduce the risk of noise exposure to workers (This includes TA's and spotters who also require Class 5 hearing protection); and
d. Areas with high noise exposure levels should be identified by signs and entry restricted to persons wearing adequate hearing protection.

6.5.3 MANUAL HANDLING

a. Limit amount of tools or equipment lifted down onto scaffold;
b. Where possible use mechanical device for lifting;
c. Seek assistance to lift heavy or awkward items;
d. When handling heavy equipment and tools use correct manual handling techniques, bent knees, straight back; and
e. Position feet correctly, do not twist body.

6.5.4 STRAINS AND SLIPS

a. Make sure all lines are clear of walkways or areas of thoroughfare; and
b. Never carry more than you can safely handle if you must carry equipment or hoses to another level.

6.5.5 FALLS

a. Ensure that work platform when used suit the work task and are placed in an ideal location and are stable; and
b. Always maintain 3 points of contact when climbing ladders or using stairs.

6.5.6 HEAT

a. Cotton garments worn underneath may help in the reduction of heat build-up;
b. Cooling devices fitted to the air supply of blast helmets;
c. Scheduling work aimed at countering the build-up of heat inside personal protective equipment. This should include:
    1. Job rotation (where alternative tasks in cool areas are available);
    2. Appropriate breaks being provided to limit the time an operator works continuously,
    3. Allowing the body to cool down; and
    4. Scheduling work in hours when ambient temperatures are cooler; and
d. Cool drinking water being readily available.

7. SPECIFIC BLASTING SAFETY

a. Make sure you have all the information about the materials or chemicals which may be present. Review the Material Safety Data Sheet (MSDS) prior to commencing work;
b. Carry out pre-start check on compressor, abrasive blaster and painting equipment, as per manufacturer's instructions, including power leads, hoses, nozzle and pressure gauge;
c. Ensure all flammable liquids stored away from ignition sources, adequately signed and fire extinguisher/fire hose nearby;
d. All hoses must be checked for damage or wear;
e. All hoses must be arranged so they do not cause a slip, trip hazard;

f. Hoses should be supported to prevent excessive sway or vibration and flotation devices fitted;

g. All fittings should be cleaned before connection;

h. Check nozzles are open and clear – there are no blockages or damage;

i. Check blasting nozzle for damage;

j. If equipment or hoses need to be used at height, use rope or mechanical aid to pull equipment or hoses to that level;

k. Ensure activating device (ie "dead man" control) is working correctly;

l. Dead man controls must not be tampered with or modified;

m. Never operate blasting equipment alone;

n. Do not adjust any nuts, hose connections or fittings if the system is under pressure/live;

o. Operating pressures must not be adjusted without notifying the operator first;

p. Never grab a hose or use it as a means of support when system is operating or idle; and

q. Faulty equipment is to be tagged out and replaced.

6.6 PRE-START EQUIPMENT CHECKS

- Check lube oil level at compressor;
- Check compressor is certified for breathable air usage;
- Dewater compressor air-receiver;
- Check radiator, battery level and connections; and
- Check fuel levels.

6.7 MOBILISATION TO WORK AREA – LOADING EQUIPMENT

- Determine all tools, equipment etc required for the job;
- Check tools, equipment is in good condition and not damaged;
- Ensure electrical equipment is tagged correctly (correct colour tag is attached);
- Ensure equipment is stacked neatly and secured correctly on vehicle;
- Make sure a vehicle pre-start has been done on the vehicle to be used; and
- Drive to work area. Ensure site road rules are complied with at all times.

6.8 PRE START

- Make sure Take 5, JHA and Pre-start check lists are completed prior to task commencement;
- Supervisors are required to review and sign;
- Determine appropriate Hazard control measures including relevant PPE prior to commencing job; and

6.12 CONDUCTING ABRASIVE BLASTING

- Utilise the appropriate PPE required for the job; footwear, eye protection, blast gloves, blast helmet, hearing protection, respirators, life jackets. Make sure all MSDS's have been read in order to understand the Safety/PPE requirements;
- A spotter is to be employed at all times on the 'dead man' switch in visual contact with the blaster when blasting. The spotter must wear appropriate PPE for abrasive blasting area which includes footwear, eyewear, blast gloves, hearing protection and respirators if required;
- The abrasive blast unit must not be engaged until the operator gives a signal (either verbal or hand signal);
- If any leaks are observed or any pressure relief valve does not work properly, lifts or fails the compressor must be shutdown and work cease until equipment repaired or replaced; and
- Monitor dust emissions regularly during blasting and where excessive, utilise shrouding as required to encapsulate.

6.13 COMPLETION

- Ensure no pressure remains in the line of abrasive blaster after shutdown;
- Ensure hoses are packed away correctly and secured;
- Clean up all rubbish, containers, packers, used ear plugs, plastic and paper wrappers. Place into correct bins and remove from work area;
- Ensure equipment is stacked neatly and secured correctly on vehicle;
- Inform supervisor or designated representative of completion of work;
- Remove barricades and signage;
- Ensure all isolations are removed (ie remove and destroy all PERSONAL DANGER TAGS);
- Ensure the relevant area operations people are aware the job is complete;
- Ensure area is left in a clean and tidy state;
- Drive back to yard. Ensure site road rules are complied with at all times; and
- Permits, JHA's and associated paperwork are to be handed on to company Safety Officer for archiving.

7.0 RELATED DOCUMENTS

- UPC Risk Register
- Working at Height Procedure (4.9)
- Abrasive Blasting and Painting Operational Procedures

8.0 RECORDS CONTROL

This procedure is to be reviewed every 12 months and amended as required in accordance with the Document Control Procedure.

ultimate protective coatings

SPRAY PAINTING OPERATIONAL PROCEDURE

Document Name:	Spray Painting – Operational Procedure	**Document Number:**	1.8.13
Date Approved:	30th November 2012	**Authorised by:**	Ray Armstrong Operations Manager
Next Revision Date	30th November 2013	**Signed:**	

CONTENTS

1.0 PURPOSE

This procedure details safe painting requirements by UPC.

2.0 SCOPE

This procedure applies to:

- All workplaces where painting is being carried out;
- All UPC personnel who may be exposed to hazards arising from painting in workplaces;
- Where:
  - Paints and associated products are used;
  - Processes associated with painting are undertaken; and
  - Paints and associated products and equipment are stored.

3.0 REFERENCES

- The Occupational Safety and Health Act 1984
- Occupational Safety and Health Regulations 1996
- The Environmental Protection Act 1986
- Code of Practice – Spray Painting June 2009
- Code of Practice for Personal Protective Equipment
- Commission Code of Practice for Workplace Amenities
- UPC Safety Management Plan
- UPC Risk Register

4.0 DEFINITIONS

Spray painting is a process by which air is driven across the mouth of a small outlet under such pressure as to draw the paint out and produce an air-paint mist from the jet of the spray-gun. In addition, the paint may be fed under pressure to the gun.

Spray painting may be carried out by hand or automatically.

Airless spraying is a method by which pressure is applied directly to the paint, which is forced out of a nozzle. Nozzle pressures may be high and can cause injury if mishandled.

Electrostatic spray-guns have electrically charged nozzles which transfer the electric charge to droplets of paint which are then attracted to the edges and back of the work piece, an effect known as the "wrap-around effect". In some automatic painting processes the objects to be painted are charged. Direct current sources are used and hand guns may be designed with safe nozzles carrying a very low current at high voltage. Automatic guns carry much higher currents which are potentially lethal.

Hazardous substances are substances that the manufacturer (or importer) has determined are hazardous, in accordance with the National Occupational Health and Safety Commission's List of Designated Hazardous Substances or Approved Criteria for Classifying Hazardous

Substances. Normally, substances can be identified as hazardous by their labels. Broadly speaking, hazardous substances are substances used or stored at the workplace that could damage a person's health.

5.0 RESPONSIBILITIES

- The Supervisor overseeing the work performed is responsible for ensuring all safety and environmental requirements are implemented.
- Experienced and Trained Painters will undertake painting activities.

6.0 PROCEDURE

6.1 PRE START

- Make sure Take 5 (HAZID and risk assessment), JHA and Pre-start check lists are completed prior to task commencement;
- Supervisors are required to review and sign;
- Determine appropriate Hazard control measures including relevant PPE prior to commencing job; and
- Identify all appropriate access/induction permits and correct certifications for the work to be performed.

6.2 HAZARD IDENTIFICATION

There are a number of hazards to which employees engaged in spray painting may be exposed. Many paints that are sprayed are classified as hazardous substances because they contain potentially harmful ingredients. Exposure of employees to these paints can cause injury and illness through inhalation of toxic vapours and mists, or absorption of irritants through the skin. Other hazardous substances to which spray painting employees could be exposed include thinners, degreasers, resins, surface preparation products, dusts from sanding, rust converters and rust removers.

Some hazardous substances used in spray painting are also a fire or explosion risk. Other hazards in spray painting include plant, electricity, and paint injection from airless spray guns, manual handling and noise.

In all instances, please refer to the Material Safety Data Sheet (MSDS) to ensure all controls are understood and implemented.

While some of the hazards associated with painting are widely known and recognised, the Occupational Safety and Health Regulations 1996 outline three steps to be followed in workplaces:

- Hazard identification – identifying situations where employees and visitors may be exposed to injury or harm;
- Risk assessment – working out which parts of the process or activity are more likely to cause injury or harm, and how serious the injuries or harm might be; and
- Risk reduction – taking action to prevent the injury or harm.

The responsibility for completing the three steps rests with the person who is the employer, main contractor, a self-employed person or the person with control over the workplace or access to it.

6.3 SUBSTANCES

1. Many substances encountered in painting are hazardous. These include:
    a. Paints;
    b. Solvents;
    c. Dusts;
    d. Powders;
    e. Lacquers;
    f. Paint removers;
    g. Resins;
    h. Adhesives;
    i. Degreasers;
    j. Surface preparation products;
    k. Rust convertors; and
    l. Rust removers.

6.4 PAINTING HAZARD IDENTIFICATION

A practical way to carry out assessments is to divide workplace activities into jobs, tasks or work areas and assess the risks involved in each. The assessment can then be completed in four stages.

1. **First stage** - the first stage is to list the hazardous substances used or produced in each job, task or work area. As well as paint, hazardous substances could include solvents used for cleaning, resins, thinners, surface preparation products, powders, adhesives, paint removers, rust converters and rust removers.
2. **Second stage** - The second stage is to review the label and the Material Safety Data Sheet (MSDS) or equivalent information for each substance to determine the nature of the hazard. The risk phrases on the label are a guide to the type and seriousness of harm a substance can do. More detailed information on possible harm from a substance can be found in the MSDS.

    Using information from the label and MSDS, spray painting substances can be put into three hazard categories as follows:

    a. Category 1 – High hazard includes substances that contain or are:
        (i) Cancer-causing chemicals, for example, coal tar;
        (ii) Skin or respiratory sensitisers, for example, isocyanates in polyurethane paints;
        (iii) Mutagens or reproductive hazards, for example, ethoxyethyl acetate;
        (iv) Substances which cause severe effects after repeated or prolonged exposure, for example, styrene;

(v) Metallic hazardous substances, for example, cadmium;

(vi) Substances which cause acute lethal or non-lethal irreversible effects after a single exposure;

(vii) substances which cause acute irritant effects;

(viii) Classified as Schedule 6 or 7 poisons;

(ix) Corrosive substances or Dangerous Goods Class 8 products;

(x) Dangerous Goods Class 5 products; or

(xi) Two (or more) pack paints, for example, a polyurethane paint and its hardener.

b. Category 2 – Medium hazard includes any substance that contains organic solvents, or is a Dangerous Goods Class 3 product, that is not already included in Category 1. This can include water-based paints. Except for water, which is an inorganic solvent, the vast majority of solvents used at work or contained in workplace substances are organic. 'Organic solvents' covers a broad range of different substances, for example, toluene, xylene, methyl ethyl ketone, acetone, benzene, ethylene glycol derivatives, turpentine and white spirit. Their potential health effects vary, with some being more hazardous than others. Most of them are flammable. It should not be assumed that water-based paints and other water-based products are non-hazardous, because many contain organic solvents or other hazardous substances.

c. Category 3 – Low hazard includes any other substances not in Categories 1 and 2. Determining which category a substance is in will help with assessing risk. It will also help with decisions about risk control.

3. **Third stage – The** third stage is to inspect the relevant work area/s to find out whether people are being exposed because of the way they are interacting with the substances being used. This involves:

a. Discussion with employees about work practices and procedures;

b. Determining whether substances are being released into the work area. This includes noting:

(i) Evidence of contamination, for example, dust or fumes visible in the air or on surfaces, a substance visible on a person's skin or clothing, the odour of substances, visible leaks, spills, splashes or residues. (While odour can indicate a problem, if there is no odour that does not mean that there is no problem. Odour is not a reliable indicator of whether the amount of a substance present is above or below the exposure standard.);

(ii) Employees' experience or symptoms of exposure. As well as ill health or injury, symptoms of exposure can include recurring irritations, for example, feelings of discomfort or respiratory

problems. While these symptoms may not seem serious at the time, they can indicate, or become, long term health effects;

c. Consideration of all persons potentially exposed, including, for example, people who pass through the area, cleaners and maintenance workers;

d. Consideration of the effects of unusual or particular circumstances, such as staff shortages, environmental conditions, weather changes, equipment repair, very busy times and emergencies. For example, if there is smoke outside near the fresh air inlet, it could be drawn into the spray booth;

e. Consideration of the combined effects of two or more hazardous substances;

f. Estimation of the degree of exposure for all persons potentially exposed. The estimation should take into account the level, frequency, and duration of exposure, as well as the different routes of entry. If the degree of exposure cannot be estimated with confidence, then monitoring or health surveillance may be required; and

g. Consideration of existing control measures, including whether:

   (i) Controls are in place, effective and well maintained.

   (ii) Employees have been trained in the proper use and maintenance of the controls.

h. The object being sprayed can influence risk. Factors that should be considered include:

   a. The position of the object in relation to the painter;

   b. The positioning of other employees;

   c. The direction of the stream of ventilating air;

   d. The size and shape of the object; and

   e. The ease of moving the object.

   What must be avoided is positioning the object so that painters have to spray towards each other, towards other employees or up wind of other employees.

i. The spray painting process used also influences risk. Characteristics of the different processes are as follows:

   a. Conventional compressed air (low pressure) spray painting – Extensive overspray; bounce in cavities and at corners (rebound); high sound levels.

   b. Airless (high pressure) spray painting – Less overspray, bounce and aerosol than conventional air spraying; relatively high viscosity paints can be used (less solvent is needed in the paint); higher capacity (flow rate) and faster application; risk of injection injury and static electricity that could cause a spark.

c. Air assisted airless (combined method) spray painting – Less aerosol and overspray than conventional air spraying; risk of injection injury.

d. Electrostatic spray painting – Spray guns heavier and more difficult to handle; static electricity.

e. Hot spraying – Uses very little thinner; reduced overspray; increased fire or explosion potential.

f. Pressure pots – Risk from over pressurisation (pressure must be released before opening to refill); damaged vessels and incorrectly fitted hoses and couplings; awkward manual handling; more solvents used in maintenance.

4. **Fourth stage** - The fourth stage is to evaluate the risks for each job, task or work area. Risks of work with hazardous substances can be assessed as high, medium, low or uncertain. An explanation of these four risk levels is given below.

a. Low Risk is and unlikely to increase where:

(i) The amounts of the substance used are too small to cause much harm, even if controls fail; or - the substance can cause minor effects, but its use is being strictly controlled in accordance with the MSDS (or equivalent information), and employees have been trained; or

(ii) The substance can cause minor effects, but its use can be readily controlled in accordance with the MSDS.

b. Medium Risk is where:

(i) Although the substance is in Category 2 and there are a number of people who could be affected on a daily basis, use of the substance is strictly controlled in accordance with the MSDS and through effective engineering controls; or evidence of exposure has been found during the assessment.

c. High Risk is where:

(i) The substance is in Category 1;

(ii) Dusts, mists or fumes are visible in the air;

(iii) There are widespread complaints of illness, discomfort and irritation;

(iv) Splashes are present; and employees have not been trained; and

(v) The potential harm is serious and the likelihood of exposure is high.

d. Risk is uncertain where:

(i) The level of exposure cannot be estimated with confidence;

(ii) There is not enough information available about a substance; or

(iii) More complex processes and exposures are involved, for example, if there is potential exposure to a number of different substances.

6.5 SPRAY PAINTING

Adequate steps must be taken to protect the spray painters, other employees or persons in the vicinity, and the environment, from spray painting hazards. A spray paint exclusion zone, with restrictions on entry, should be designated around the area where the spray painting is being carried out. An exclusion zone in itself will not provide sufficient protection and must be used in conjunction with other control measures.

A spray painting process is not effectively isolated from another manufacturing process if paint from the spray painting can be inhaled by any persons engaged in other process. Neither is it effectively isolated from plant, machinery or equipment if there is danger of the plant being ignited by a source of ignition associated with the plant, machinery or equipment.

In general, the exclusion zone should be at least 6 metres horizontal and 2 metres vertical clearance above and below the place where the paint is being applied; however, in determining the size of the exclusion zone, the following factors need to be considered:

1. The nature of the substance being sprayed;
2. The work environment, including wind speed, ambient temperature and humidity;
3. Fire and explosion hazards;
4. The location and physical conditions of the site; and
5. Whether other people are likely to be in the vicinity. Relocation of employees not involved in spray painting activities to other parts of the workplace may be necessary.
6. Greater vertical clearance may be required when spray painting in stairwells and other areas which allow vertical movement of vapours.

Once a spray paint exclusion zone has been established, a number of procedures can be used to control risks. These include:

1. Physical barriers and warning signs to prevent unprotected persons from entering the exclusion zone;
2. Shrouding of the area where spraying is to occur (Refer Section 6.7);
3. Restricted entry of unprotected persons into the exclusion zone for a time period that ensures airborne concentrations of hazardous substances have reduced to below the relevant exposure standards;
4. Removal of hazardous substances that are not immediately needed for spray painting work, to reduce unnecessary exposure and fire or explosion risks;
5. Removal of stored wastes such as solvent-soaked rags and waste paint from within the exclusion zone to control fire or explosion risks;

6. Removal of electrical and ignition sources, including smoking, from within the exclusion zone to control fire and explosion risks;

7. Restriction of spraying when wind speed is greater than 15 kilometres per hour; and

8. Restriction of spraying within 50 metres of the boundary to adjacent premises or a greater separation where car parks and other sensitive property are located.

9. Consideration should also be given to ensure spray drift in walkways, public areas and air conditioning intake vents is also controlled.

6.6 PAINTING IN CONFINED SPACES

Fatalities have resulted from inhalation of vapours or as a consequence of fire or explosion due to inadequate ventilation in a confined space. Spray painting in a confined space must be carried out in accordance with Regulations 3.82 to 3.87. Australian Standard AS 2865 Safe working in a confined space sets out the particular requirements and procedures for the safety of persons required to enter and work in a confined space and includes dealing with hazard identification and risk assessment, monitoring prior to entry, education and training, as well as rescue and first aid.

1. **Ventilation**

   When spraying in a confined space where the ventilation is inadequate, toxic concentrations of vapours will be formed and a substantial volume of flammable vapour will accumulate.

   When spray painting is performed in a confined space, it may not be possible, even with the assistance of mechanical ventilation, to reduce the concentration of hazardous spray painting substances to levels that will not adversely affect the health of employees.

   Under these circumstances, the employer should ensure the concentration of the contaminants is reduced to the minimum practicable level and employees are provided with:

   a. a full face hood continuous flow supplied air line respirator; and

   b. Overalls and appropriate chemically-resistant gloves where the substance being sprayed can irritate sensitise or be absorbed by the skin.

   Toxic vapours in a confined space must be reduced as far as practicable. Ventilation is to be achieved by natural, forced or mechanical means to establish and maintain a safe atmosphere. This ventilation should be continued throughout the period of occupancy. Fresh air should be drawn into a confined space from an uncontaminated source and the contaminated air exhausted to a location which will not present a hazard or re-enter the confined space.

2. **Ignition hazards**

AS 2865 requires that entry into, and working in a confined space should not be permitted if any flammable or combustible contaminant in the atmosphere is above 5% of its Lower Explosive Limit (LEL).

It must also be taken into consideration that a flammable liquid is likely to be ignited at a temperature lower than the stated flash point when the paint is atomised. Ignition sources should be eliminated prior to the commencement of spraying.

6.7 PPE

Appropriate personal protective equipment must always be worn as an added control measure during painting. MSDS provide the information needed to enable safe handling of hazardous substances at work. The MSDS should provide health hazard information and the precautions for the use of the substance. Employers must ensure all employees have ready access to the MSDS for any hazardous substance used in the course of their work.

1. **Confined spaces**

   When spraying any paint in a confined space, contaminant levels may be high and oxygen may be reduced to unsafe levels. The sprayer must wear:

   a. A supplied air respirator with an adequate protection factor. Full face piece or hood, continuous flow or positive pressure respirators are generally necessary; and

   b. Full length overalls, appropriate chemically resistant gloves and eye protection.

2. **Two part polyurethane paint**

   When spraying two-part polyurethane paint the sprayer must wear:

   a. A supplied air respirator with an adequate protection factor; and

   b. Full length overalls, appropriate chemically resistant gloves and eye protection.

   Alternative respiratory protection may only be used in situations where the use of supplied air respirators increases the risk of injury to the operator due to falling, tripping, etc.

   The WorkSafe Western Australia Commission Code of Practice for Personal Protective Equipment provides further guidance on personal protective equipment.

   No person should use two part polyurethane paint without first considering the information provided in the MSDS for these paints.

3. **Two part epoxy paints and two part catalysed acrylic paint**

   The respiratory protective equipment required will depend on the toxicity of the paint and the conditions under which the paints are applied. The respirators must be selected as part of the risk assessment and control process.

   The following points need to be considered:

a. Exposure standards for the various paint components. Exposure standards have not been established for some of the hazardous components of these paints (e.g. curing agents);

b. The information provided in the manufacturer's MSDS;

c. Ventilation in the area where the paint is to be applied;

d. The level and duration of exposure; and

e. The protection factor of the respirator.

No person should use two part epoxy paint or two part catalysed acrylic paint without first considering the information provided in the MSDS for these paints.

When spraying two part epoxy paint or two part catalysed acrylic paint the sprayer must wear:

a. Respiratory protection that maintains exposures below the exposure standard.

b. Where there is no exposure standard, exposures should be kept as low as reasonably achievable. Half face respirators with combined particulate/organic vapour cartridges may be used in well ventilated areas. Higher protection factors (e.g. Full face or powered air purifying respirators) will be required where ventilation is not adequate.

c. When spraying in poorly ventilated or enclosed areas, particular care should be taken to ensure that appropriate personal protective equipment is worn in accordance with the recommendations contained in the manufacturer's Material Safety Data Sheet; and

d. Full length overalls, appropriate chemically resistant gloves and eye protection.

4. **Organic solvent and water based paint**

When organic solvent or water based paints are being sprayed and the exposure standard is likely to be exceeded, the sprayer must wear:

a. A respirator with a combined vapour/particulate filter. The respirator must have an adequate protection factor.

b. Where spraying is carried out in poorly ventilated conditions other types of respirators should be selected; and

c. Full length overalls, appropriate chemically resistant gloves and eye protection.

If persons entering the spraying area are exposed to fumes and mist they must wear the same protective equipment as worn by the sprayer.

5. **Spray painting in the open**

When spraying two part polyurethane paint and two-part epoxy paint in the open environment the requirements for respiratory protection are the same as above, respectively.

For other paints a respirator with a combined vapour/particulate filter must be worn where the occupational exposure standard is likely to be exceeded.

The sprayer must also wear full length overalls, appropriate chemically resistant gloves and eye protection.

6.8 MIXING AND POURING

If spray painting substances are splashed on clothing or the body, the contaminated clothing should be immediately removed and the skin thoroughly cleaned with soap and water. Most solvents and thinners can be absorbed by the skin, and should not be used to clean the skin.

Unused or surplus liquid should always be returned to the container designated for that liquid. The unnecessary or accidental mixing of different liquids should be avoided. For example, a small amount of acetone accidentally mixed with kerosene could increase the risk of fire if the mixture is later taken to be kerosene.

Empty containers or cans may still contain vapour which could explode under certain circumstances. They should be decontaminated or closed and removed to a safe place while awaiting disposal in accordance with local government, environmental protection or waste management authority requirements.

6.9 STORAGE AND HANDLING

Supplies of flammable materials are stored in tightly closed containers which are clearly labelled to show the nature of their contents and lids of containers are replaced after each use.

Storage areas for flammable substances are to be ventilated and containers are to be earthed accordingly whilst solvents are being decanted to control static electricity.

The quantity of spray painting material in the spray area is kept to a minimum and is not exceed what is required for one day's spraying operations and flammable liquids are stored in containers designated for that specific liquid. Spray painting substances are to not be stored or kept other than in their original containers however; this does not apply to a container in actual use in spray painting or coating, or to a container used for mixing paint for immediate use.

6.10 ENVIRONMENTAL CONTROLS

Isolate the area where spray painting is undertaken to ensure the paint residue remains in the immediate work area and does not escape onto any place to which the public has access or can damage the local environment. Isolation may involve enclosing the area with plastic or other forms of impervious protective sheeting to limit the movement of paint from the source where painting is undertaken.

Paint and paint cleaning products can enter waterways. Both of these products can be hazardous to people and the environment because they may contain toxic metals. Spray Painting to be carried out in or near an aquatic environment must ensure that all water which may contain waste material is contained in an impervious holding sump until it is disposed of in accordance with Section 6.10.

All environmental incidents must be reported and managed. Ensure the emergency number **(08 9173 6000)** is programmed in mobile phones.

6.11 MAINTENANCE AND CLEANING

1. **General maintenance**

   A maintenance system should be implemented to provide early detection of any defect in control measures that could result in a reduced level of protection.

   Defects should be identified by routine examinations which include:

   a. Visual checks at appropriate intervals to ensure control measures are being properly implemented, e.g. checking whether supplied air respirators are being used when two pack epoxy or polyurethane based paints are used;

   b. Periodic inspection of administrative and operational control measures; and

   c. Monitoring ventilation, e.g. testing air movement in a spray booth.

   Procedures for scheduling maintenance are to be documented. These include:

   a. The control measures which require servicing;

   b. The nature of the servicing needed;

   c. Frequency of the servicing;

   d. Who is responsible for the servicing;

   e. How defects will be noted and corrected; and

   f. Performance testing and evaluation.

2. **Maintenance of equipment**

   All spraying equipment is to be regularly cleaned and maintained in accordance with the manufacturer's instructions to safeguard the operator's health, minimise the fire hazard and to ensure optimum performance of the equipment.

   Safe procedures are used to test spray guns. Indiscriminate spraying or by spraying directly onto the walls to test a spray gun is not acceptable.

3. **Cleaning methods**

   Overspray is to be removed by peeling the plastic skin off the exposed surface or by hosing down the soap mixture containing the overspray.

   Absorbent material such as paper, sawdust, wood shavings or similar materials **are not** be used on exposed surfaces or for catching drippings from sprayed or coated articles, as they increase the risk of fire or explosion.

Where air filters are used, the filter medium should be replaced according to the manufacturer's instructions. More frequent replacement may sometimes be necessary to prevent deposits on the filter medium reducing the airflow to below the required level.

Pressurised paint pots and pressurised spray guns should be cleaned in accordance with the manufacturer's instructions. Pressure from the gun and the paint pot must be released prior to cleaning.

The gun should not be cleaned by covering the nozzle with a cloth or other material held in the hand. This method of cleaning has resulted in paint injection injuries when used with airless spray guns.

All used cleaning rags and similar materials should be placed in metal containers with close fitting lids and dampened with water prior to proper disposal at the end of each day's work.

6.12 OPERATIONS

1. **General**

   a. Whenever possible, the spray should be directed towards the exhaust air outlet.

   b. Special care must be taken to prevent spray guns pointing towards other workers to ensure they are not exposed to the spray.

   c. Where compressed air spraying is used, the correct balance of air and liquid is important to minimise the formation of very small droplets that are not deposited on the article and to minimise deflection of droplets with the "bounce back" air stream.

   d. To obtain the required consistency of the paint for spraying, volatile thinners or heat can be used to obtain the required consistency of paint for spraying. Heating the paint is safer as it results in less overspray.

2. **Specific**

   a. Utilise the appropriate PPE required for the job; footwear, eyewear, gloves, body protection, hearing protection, respirators. Make sure all MSDS's have been read in order to understand the Safety/PPE requirements

   b. When mixing the paint, ensure a fire extinguisher or fire hose has been identified, is accessible and in working order, all ignition sources have been removed (No Smoking allowed) and make sure spills can be contained through the use of drip trays. If spills do occur, promptly report them to the supervisor.

   c. Paint lids to be on paints and solvent before and after use.

   d. If any leaks are observed, painting must cease until as such time and the leaks have been remedied

   e. The paint pot must not be pressurized until the Painter gives a signal (either verbal or hand signal).

f. Place paint and solvents back in the locked paint container once finished using

6.13 EMERGENCY RESPONSE

If a leak, spill or uncontrolled release of a hazardous spray painting substance occurs, emergency procedures, including procedures for safe disposal of the substance and sufficient suitable personal protective equipment, should be addressed.

The Material Safety Data Sheet should be referred to for instructions on the safe handling and disposal of spills.

The followings actions are to be taken:

1. All extinguishers are maintained in accordance with the manufacturer's recommendations and the requirements, if any, of the WA Fire and Rescue Service;
2. The level of fire protection for the paint storage area meets the requirements of AS 1940 The storage and handling of flammable and combustible liquids;
3. All employees know, understand and have practised emergency evacuation procedures, and have been trained in the correct use of extinguishers;
4. Eye wash and first aid facilities are available. Refer to the WorkSafe Western Australia Commission Code of Practice for First Aid; and
5. Emergency contact numbers are displayed in a prominent position. Ensure the emergency number for client is programmed in mobile phones.
6. All incidents must be reported in a timely manner and managed.

6.14 AMENITIES AND PERSONAL HYGIENE

Hand washing facilities and other amenities should be provided in accordance with the WorkSafe Western Australia Commission Code of Practice for Workplace Amenities. Amenity rooms should be kept free of contaminants and noise arising from the spray painting process.

Employers should ensure that food and drink are not kept, prepared or eaten in any spray booth, spray paint mixing or tinting area, or any area which may become contaminated with spray painting substances. Spray painters should wash their hands and face before eating, drinking or smoking and at the end of the day's work.

6.15 WASTE DISPOSAL

- All waste material shall be cleaned up at the conclusion of each spray painting operation.
- All waste material is disposed of at an appropriate landfill site or waste treatment facility the occupier of which holds a licence under Part V of the Environmental Protection Act (WA) 1986 in respect of that site or facility.

6.16 REGISTERS

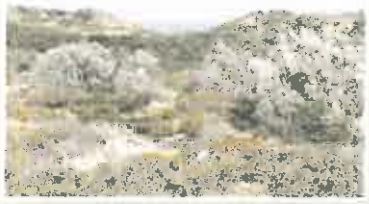
All hazardous substances used in spray painting processes are to be identified and a register of those substances is to be kept in the workplace. The purpose of this register is to provide a source of information for both employer and employees, and to assist in the management of substances used or generated in spray painting processes. This list of hazardous substances should include:

1. Paints;
2. Coatings;
3. Solvents and thinners;
4. Cleaning products; and
5. Fillers, strippers and other chemicals.

The minimum information about any hazardous substance required in a hazardous substances register is the product name, the supplier of the product and a copy of the MSDS.

7.0 RELATED DOCUMENTS

- UPC Risk Register
- Hazardous Substances Register



COTERRA
ENVIRONMENT

[redacted]