



Dangerous Goods Risk Assessment (DGRA)

Proposed New DG Compound – Narngulu



PROPOSED NARNGULU DG COMPOUND

Dangerous Goods Risk Assessment

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ADDENDA

- A – Drawings and Photos
- B – Site-wide Aspects
- C – Aluminium Phosphide (AIP) Freight Container (Store PS2)
- D – AIP Waste Storage Area (Store PS3)
- E – Flammable Solids HAZID / Risk Assessment
- F – Gas Cylinder Store (Store PS1)

ATTACHMENTS

- 1 – (Draft) Site Dangerous Goods Manifest
- 2 – Site-wide DG Risk Assessment (DGRA)
- 3 – Safety Data Sheets (SDS)

1. GENERAL INFORMATION

1.1. Acronyms and Abbreviations

Term	Definition
Add.	Addendum
ADG Code	Australian Dangerous Goods Code
AIGA	Asia Industrial Gases Association
AIP	Aluminium phosphide
AS	Australian Standard
Att.	Attachment
BCA	Building Code of Australia
BVM	Bag Valve Mask
CBH	Co-operative Bulk Handling Limited
CCV	Critical Control Verification
CFW	Chief Fire Warden
Cl.	Clause
CNS	Central Nervous System
CO	Carbon monoxide
CO ₂	Carbon dioxide
CoP(s)	Code(s) of Practice
DEMIRS	Department of Energy, Mines, Industry Regulation and Safety (<i>now LGIRS</i>)
DFES	Department of Fire and Emergency Services
DG(s)	Dangerous Good(s)
DG Act	<i>Dangerous Goods Safety Act 2004</i>
DGO	Dangerous Goods Officer (LGIRS)
DGRA	Dangerous Goods Risk Assessment
DG Regs	Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007
DOT	Department of Transport (US)
DWG	Drawing
ECM	Emergency Control Manager
EIC	Emergency Information Container
EP	Emergency Plan
EPA	Environmental Protection Authority



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Term	Definition
ER	Emergency Response
ERP	Emergency Response Plan
FE	Fire Extinguisher
FES-ERG	Fire and Emergency Services - Emergency Response Guide
FH	Fire Hydrant
FHR	Fire Hose Reel
FRL	Fire Resistance Level
ft	foot / feet
FW	Firewater
GHS	Globally Harmonised System of Classification and Labelling of Chemicals
GP	Grain Protection
HA(s)	Hazardous Area(s)
HAC	Hazardous Area Classification
HAZCHEM	Hazardous Chemicals
HAZID	Hazard Identification (Study)
HDS	Horn Dilufos System
HLRA	High Level Risk Assessment
H&S	Health and Safety
HSE	Health, Safety and Environment
HVAC	Heating, Ventilation and Air Conditioning
IBC	Intermediate Bulk Container
ICAM	Incident Cause Analysis Method
ID	Identification
ISO	International Standards Organisation
IMS	Integrated Management System
JSA	Job Safety Analysis
kg	kilogram (for solids)
KGT	Kwinana Grain Terminal
kL	Kilolitres
kPa(g)	kilopascals (gauge)
kph	kilometres per hour
L	litres (for gas or liquid)



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Term	Definition
LEL / LFL	Lower Explosive Limit / Lower Flammability Limit
LGIRS	(Department of) Local Government, Industry Regulation and Safety (<i>previously DEMIRS</i>)
LoC	Loss of Containment
m	Metres
m ²	square metres
mm	Millimetres
m ³	cubic metres
MPa	Megapascals
N ₂	Nitrogen
N/A	Not Applicable
NDT	Non-Destructive Testing
N.O.S.	Not Otherwise Specified
NP	Nitrogen Plant
NZS	New Zealand Standard
OA	Observational Assessment
OELs	Occupational Exposure Limits
OPP	Operational Pre-Plan (DFES)
OSC	On Scene Commander
OWM	Operations Work Management
PDB	Normally a detached shed or building, with more than 2 walls, for package storage
PG	Packing Group
PH ₃	Phosphine
PPE	Personal Protective Equipment
ppm	parts per million
PS	Package Store
psi	pounds per square inch
PTW	Permit to Work
PVC	Polyvinyl chloride
RA	Risk Assessment
Ref.	Reference
r. / Reg.	Regulation
SAP	Systems Applications and Products in Data Processing
SCBA	Self-contained Breathing Apparatus

Term	Definition
SDS	Safety Data Sheet
SFARP	So Far As is Reasonably Practicable
SOP	Standard Operating Procedure
SR	Sub-risk
t	Tonnes
TWA	Time-Weighted Average
UN No.	United Nations number
US	United States
UV	Ultraviolet (light)
WA	Western Australia
WHS Act	<i>Work Health and Safety Act 2020</i>
WHS Regs	Work Health and Safety (General) Regulations 2022
WI	Work Instruction
~	Approximately
<	less than
≤	less than or equal to
>	greater than
≥	greater than or equal to
°C	degrees Celsius
%	Percent

1.2. Change Management

Changes to this document shall be managed, reviewed and updated as described in the Document Control Content and Records Management Procedure.



PROPOSED NARNGULU DG COMPOUND

Dangerous Goods Risk Assessment

2. INTRODUCTION

2.1. Background

Co-operative Bulk Handling Limited (CBH) is Australia's largest co-operative and a leader in the Australian grain industry, with operations extending along the value chain from grain storage, handling, transport, marketing and processing. CBH operates numerous grain receipt, storage and outloading sites spanning from Geraldton in the north, Esperance in the south and out to Merredin in the east of Western Australia (WA). CBH's operations include a dangerous goods (DG) compound located at 4 Haigh Street, West End in Geraldton, WA 6530.

The Geraldton West End (Haigh Street) site stores and handles DGs in quantities above those that require a licence under the WA Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007 (DG Regs) and, consequently, CBH holds an existing DG licence (**DGS022072**) for the site. The Geraldton West End site stores fumigants, in the form of solid AIP blankets (Division 4.3, sub-risk (SR) 6.1), cylinders of Division 2.3 (Toxic) gas (EcoFume) and Division 2.3 (Toxic) SR 2.1 (Flammable) gas (VaporPhos), as well as Division 2.2 (Non-flammable, Non-toxic) gas cylinders (i.e. Nitrogen (N₂)), in a dedicated DG compound.

However, the highly saline, windy environment at West End has already resulted in significant corrosion of the steel infrastructure within the DG compound. Based on this, and its proximity to light industrial properties (within 70m), CBH proposes to relocate the Geraldton DG compound to a more remote site at Narngulu. This would involve:

- Preliminary earthworks and drainage. It is proposed that the ground level at the selected site will be raised by about 200 mm to minimise potential for flooding;
- Construction of a new, larger concrete pad (with apron) at the selected location within CBH's Narngulu site;
- Construction of a high-density polyethylene (HDPE) lined wastewater collection area outside the DG compound to allow for retention of any contaminated water in the event of significant incident (e.g. fire impacting on DG storages);
- Construction of a larger Vehicle Parking Shelter that provides parking for 2 Grain Protection (GP) trucks;
- Relocation of the moveable infrastructure (including the gas cylinder store (and associated deluge water sprinkler system), aluminium phosphide (AIP) freight container and AIP waste smartlocker, water tank and booster pump, safety shower / eyewash station, deluge water sprinkler controls, bollards, fire extinguishers and fire hose reel, lighting, emergency information containers (EICs), first aid kit, windsock, DG placarding and signage); and
- Installation of new security fencing and gates.

It must be noted that the relocated DG compound will be of a similar design and construction to the existing DG compound at West End (the main difference being a larger concrete pad and parking shelter to accommodate 2 GP trucks) and will store and handle the same DGs in quantities above those that require a licence under the WA Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007 (DG Regs). Consequently, CBH will need to apply for a new DG Licence for the CBH Narngulu site and then later cancel the existing DG licence (**DGS022072**) for the West End site.

2.2. Purpose and Objectives

The purpose and objectives of this Dangerous Goods Risk Assessment (DGRA) are as follows:

- to specify the requirements of the DG Regs and relevant Australian Standards (AS);
- to assess the risks associated with the proposed storage and handling of the DGs;
- to provide assurance that the risks associated with the proposed DG storage and handling will be minimised through compliance with relevant AS and the DG Regs (through a site-wide DGRA); and
- to provide a transparent and traceable record of the assessment process.

2.3. Report Structure and Contents

This document contains information regarding the site and proposed storage and handling of DGs, and is structured in 6 addenda and 3 attachments, as listed below:

Addenda

- **Addendum A** – drawings and photos;
- **Addendum B** – details about the site concerning security, emergency planning and placarding;
- **Addendum C** – detailed compliance checklist for the AIP Freight Container (Store PS2);
- **Addendum D** – detailed compliance checklist for the AIP Waste Storage Area (Store PS3);
- **Addendum E** – Flammable Solids Hazard Identification (HAZID) / Risk Assessment; and
- **Addendum F** – detailed compliance checklist for the Gas Cylinder Store (Store PS1).

Attachments

- **Attachment 1** – (Draft) Site DG Manifest;
- **Attachment 2** – Site-wide DG Risk Assessment (DGRA); and
- **Attachment 3** – Safety Data Sheets (SDS).

3. DANGEROUS GOODS QUANTITIES

3.1. Proposed DG Licence Details

As discussed in Section 2.1 above, the quantity of DGs proposed to be stored and handled at CBH's Narngulu site is such that the site will require licensing under the DG Regs. Table 3.1 below provides the proposed DG licence storage details.

Table 3.1 – Proposed DG Licence Details

UN No.	Quantity (kL / t)	Depot Type	Proper Shipping Name	Class / Division	Sub Risk	PG	Depot / Tank ID
2199	1.6 kL	PDB	PHOSPHINE	2.3	2.1	-	PS1
3162	0.8 kL	PDB	LIQUEFIED GAS, TOXIC, N.O.S.	2.3	-	-	PS1
1397	2 t	PDB	ALUMINIUM PHOSPHIDE	4.3	6.1	I	PS2 / PS3

4. DG RISK ASSESSMENT PROCESS

4.1. Regulatory Requirements

Under the DG Regs, a site is generally required to be licensed if DGs are stored or handled at the site in quantities that exceed the 'manifest' quantities specified in Schedule 1. To obtain a DG Licence, the storages are typically required to be assessed against key aspects of:

- Relevant AS that have been approved and gazetted (approved Codes of Practice (CoPs)) by the Minister under Section 20 of the *Dangerous Goods Safety Act 2004* (DG Act); and
- DG Regs where the AS do not apply.

This report includes a detailed clause-by-clause assessment of all proposed DG stores above 'manifest' quantities under Schedule 1 of the DG Regs. Under Section 20 of the DG Act, at the time of this assessment, the following relevant standards are approved CoPs under the DG Act and may be used in lieu of the DG Regs to assess the proposed DG storages at CBH's Narngulu site:

- AS 4452: 2025 - The storage and handling of toxic substances;
- AS/NZS 5026: 2012 - The storage and handling of Class 4 dangerous goods;
- AS 4332: 2004 - The storage and handling of gases in cylinders; and
- AIGA 051/20 - Code of Practice (CoP) for Phosphine.

4.2. DGRA Process

Reg. 48 of the DG Regs states that, for DG licensed premises, the operator must undertake a risk assessment for the DGs stored or handled at the site and that a record is kept of the assessment. The requirement for a risk assessment applies to all 'dangerous goods sites', which are defined in the DG Regs as those sites that store or handle DGs in quantities at or above the 'manifest' levels defined in Schedule 1 of the DG Regs.

The DG Regs are not prescriptive on the form of the risk assessment but target the outcome of reducing the level of risk to people, property and environment (refer r. 58 of the DG Regs) so far as is reasonably practicable (SFARP). As stated in Section 4.1 above, the (Department of) Local Government, Industry Regulation and Safety (LGIRS) (*previously DEMIRS*) encourage that, where there is a relevant approved CoP (such as an AS), this is used for the risk assessment. Under Section 62 of DG Act, compliance with an approved CoP is a defence against proceedings for an offence.

Assessment of the proposed Narngulu DG storages against the relevant AS and regulatory requirements has been performed using checklists in the form of tables, with the assessment being undertaken by a person accredited by LGIRS for assessing DG storages. These DG compliance checklists (provided in **Addendum B, C, D and F**) were used in order to provide a clear record of:

- relevant regulatory or AS requirements;
- how CBH's proposed Narngulu DG compound will meet these requirements; and
- reference, where appropriate, to relevant documentation to provide traceability with regard to compliance.

The DEMIRS (now LGIRS) Safety Guidance Note 'Risk assessment for dangerous goods' (January 2025) recommends that, even if an approved CoP is used, the risk assessment process includes a compliance check against the DG Regs. This compliance check against the DG Regs was undertaken in the site-wide DGRA workshop (**Attachment 2**).



PROPOSED NARNGULU DG COMPOUND

Dangerous Goods Risk Assessment

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ADDENDUM A

DRAWINGS AND PHOTOS

LIST OF DRAWINGS:

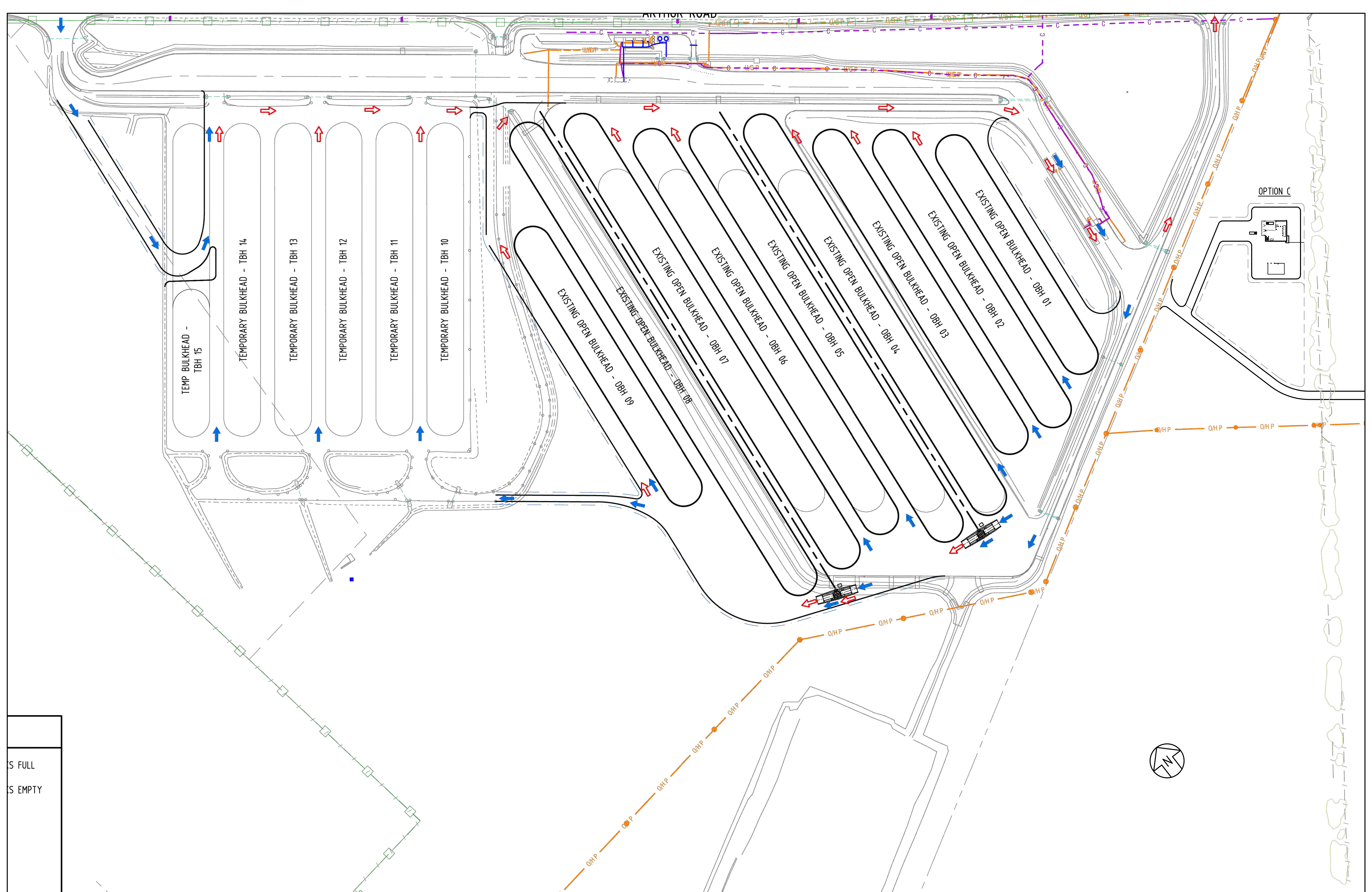
No.	DWG No.	Rev	Main Title
1.	2025-307-0572	E	Narngulu Grain Terminal – Proposed Dangerous Goods (DG) Compound – Proposed Site Positions - Site Plan
2.	2025-307-0573	G	Proposed Site Positions – Site Plan – Proposed Area Positions
3.	2025-307-0575	B	Narngulu Grain Terminal – Proposed DG Compound – Compound Layout – Truck Shelter & Shed – Plan View & Elevations
4.	307-ENG-CI-DAL-0030	0	Site Development – DG Compound – Concrete Slab Setout (23m x 22m)
5.	2014-000-0011	1	Site Development – DG Compound (15 x 21m) – Cylinder Shed (12m)
6.	N/A	-	Narngulu Traffic Flow Map
7.	251011-LAY-0001	0	Geraldton DG Compound Fire Sprinkler System – Layout Drawing
8.	251011-BLK-0001	0	CBH Geraldton - DG Compound – Drencher System – Block Plan



PROPOSED NARNGULU DG COMPOUND

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REF. ORG. No.	REFERENCE DRAWING TITLE	REV.	DATE	REVISIONS	BY	CHKD	APPD

REV.	DATE	REVISIONS	BY	CHKD	APPD
E	12.05.26	NORTH POINT ADDED			
D	24.10.25	PROPOSED AREA UPDATED			PC
C	22.10.25	SITE POSITION OPTION C			PC
B	29.07.25	CHANGES TO COMPOUND			PC
A	02.07.25	ISSUED FOR INTERNAL REVIEW			PC

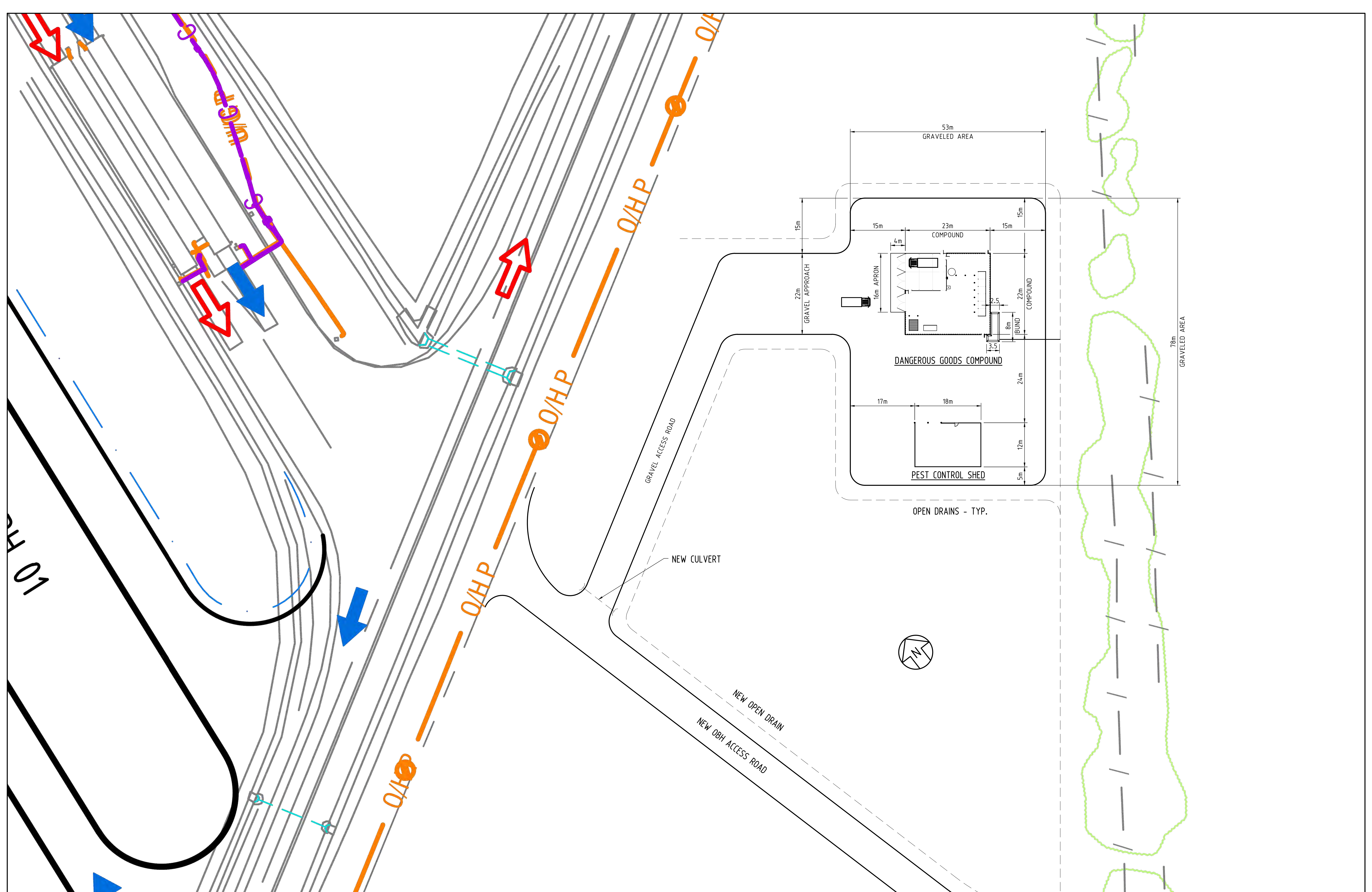
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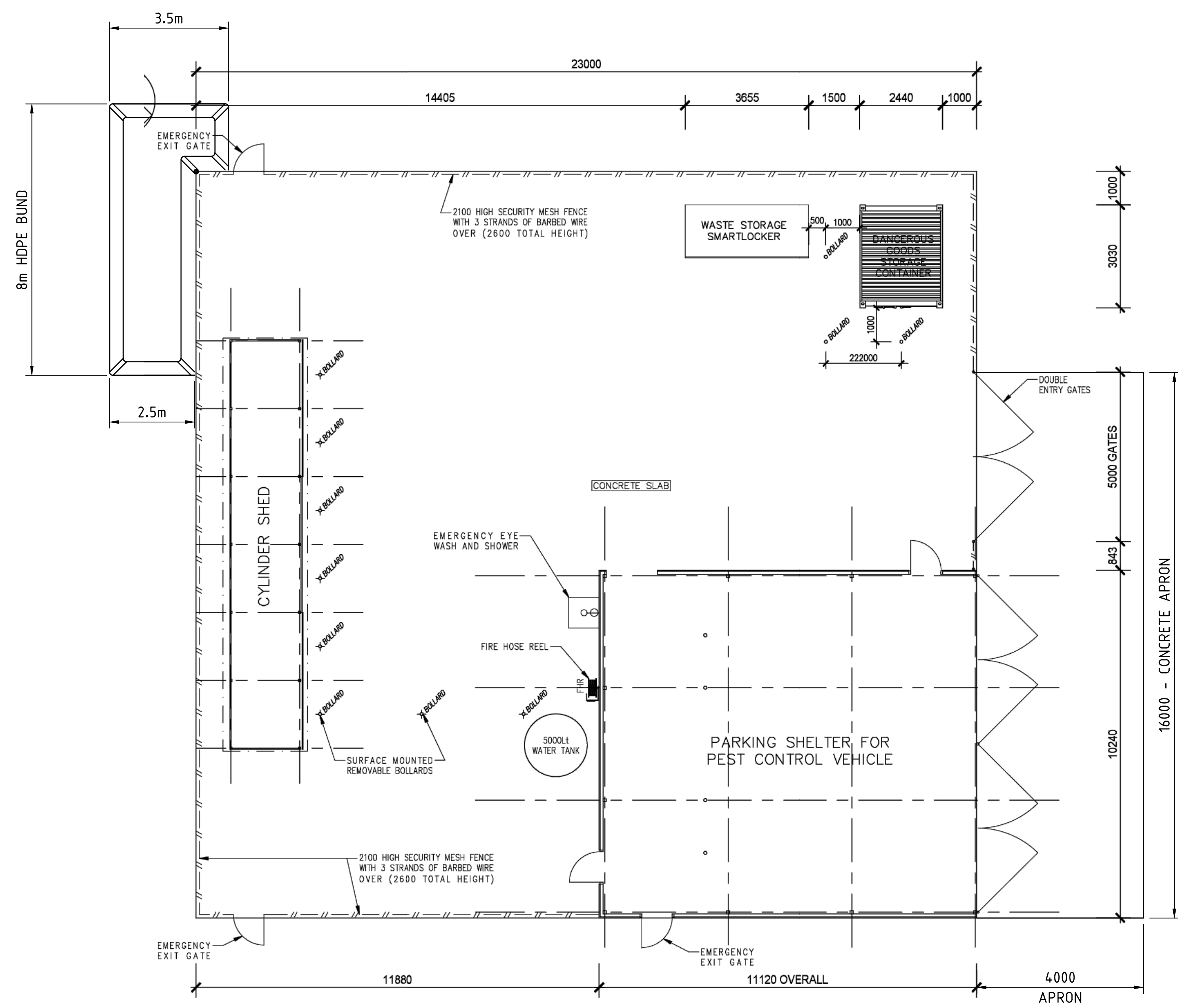
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DRAWING TITLE
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 PROPOSED DANGEROUS GOODS COMPOUND
 PROPOSED SITE POSITIONS
 SITE PLAN**

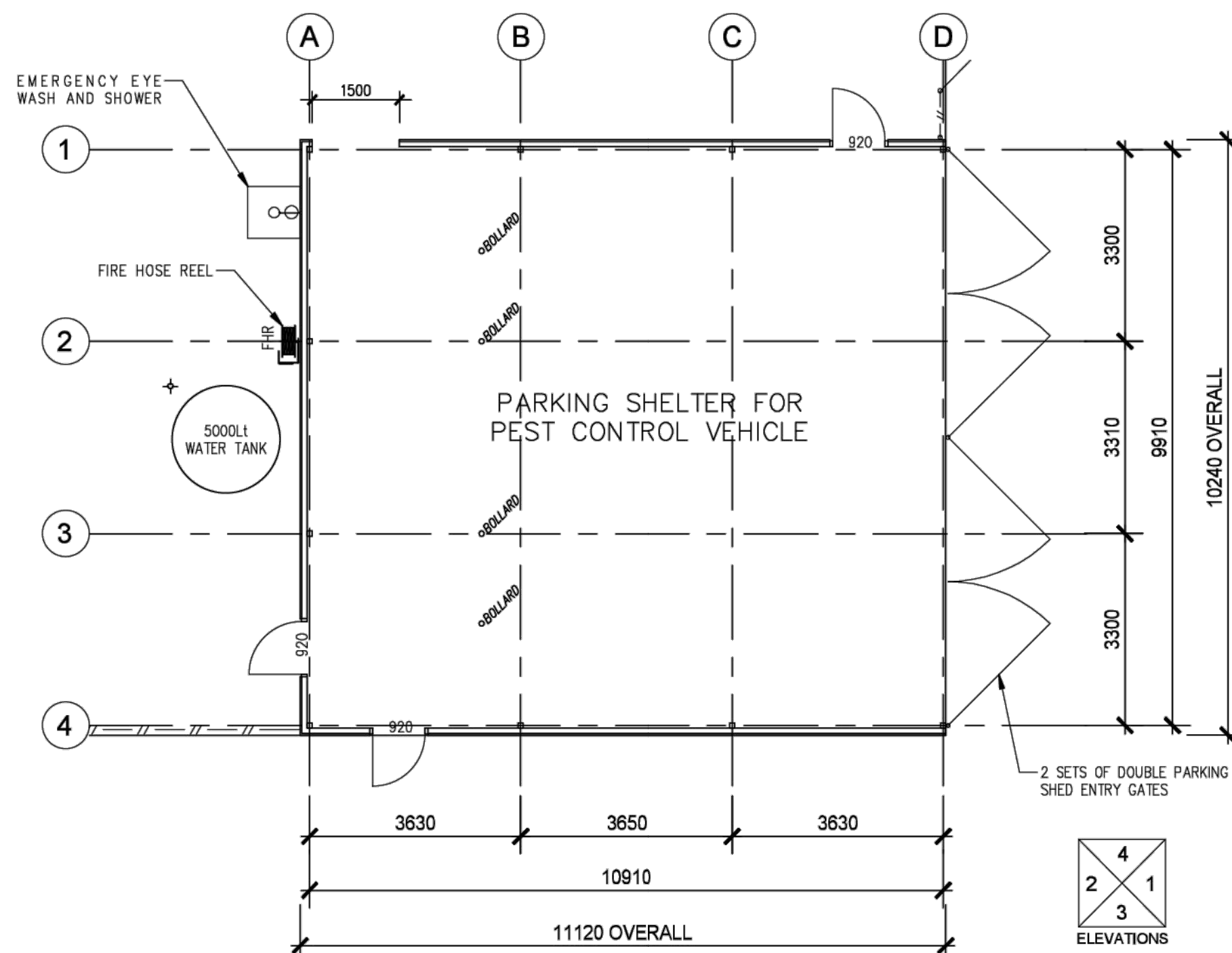
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PROJECT	DGC	REV.	E
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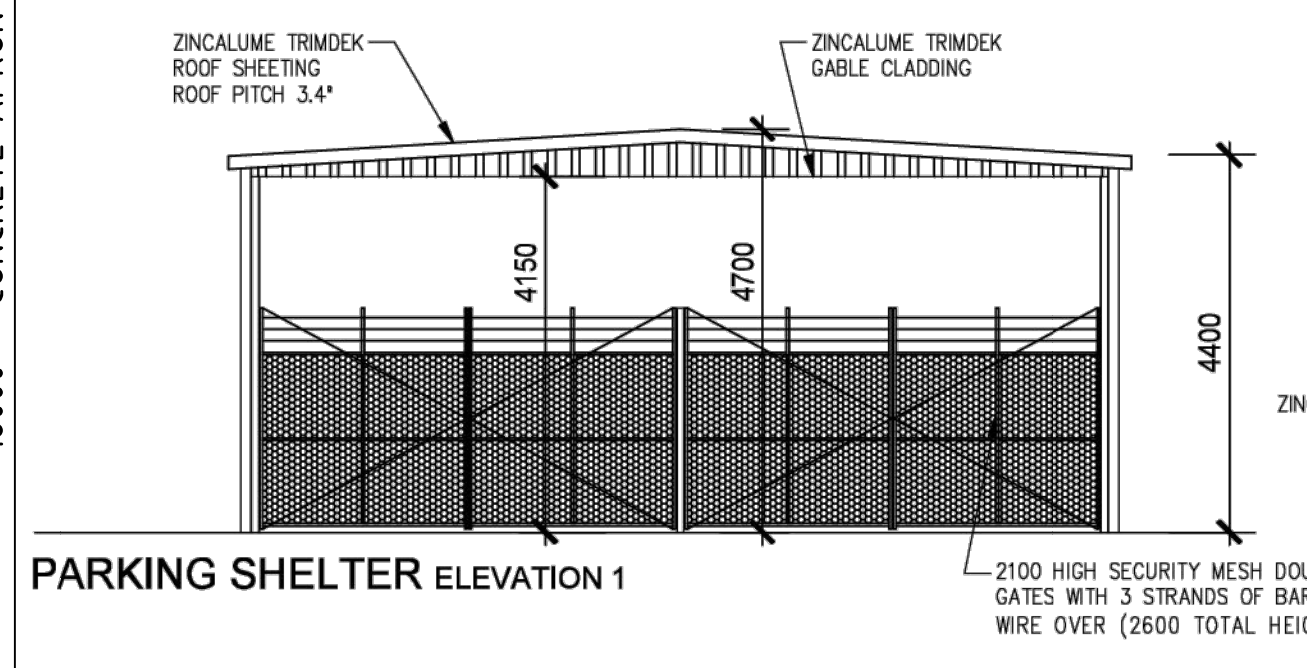
<p>COPYRIGHT ©</p> <p>THIS DRAWING AND THE CONTENTS DEPICTED OR WRITTEN THEREON, WHETHER IN WHOLE OR IN PART, IS THE EXCLUSIVE INTELLECTUAL PROPERTY OF CBH GROUP AND SHOULD NOT BE REPRODUCED OR USED FOR ANY PURPOSE WITHOUT THE EXPRESS WRITTEN APPROVAL OF CBH GROUP.</p>		<p>CBH HEAD OFFICE Level 6, 245 St GEORGES TERRACE, PERTH W.A. 6000 PH (08) 9337 9600 FAX (08) 9322 3942</p>	<p>DO NOT SCALE FROM THIS DRAWING - ASK !!!</p>	<table border="1"> <tr> <th>REF. DRG. No.</th> <th>REFERENCE DRAWING TITLE</th> <th>REV.</th> <th>DATE</th> <th>REVISIONS</th> <th>BY</th> <th>CHKD</th> <th>APPD</th> </tr> <tr> <td>G</td> <td>BUND DIMENSIONS MODIFIED & NORTH POINT ADDED</td> <td></td> <td>12.05.26</td> <td></td> <td>PC</td> <td></td> <td></td> </tr> </table>	REF. DRG. No.	REFERENCE DRAWING TITLE	REV.	DATE	REVISIONS	BY	CHKD	APPD	G	BUND DIMENSIONS MODIFIED & NORTH POINT ADDED		12.05.26		PC			<table border="1"> <tr> <th>REV.</th> <th>DATE</th> <th>REVISIONS</th> <th>BY</th> <th>CHKD</th> <th>APPD</th> </tr> <tr> <td>F</td> <td>11.05.26</td> <td>APRON & BUNDING AREAS ADDED</td> <td>PC</td> <td></td> <td></td> </tr> <tr> <td>E</td> <td>24.03.26</td> <td>PEST CONTROL STORAGE SHED DIMENSIONS ALTERED</td> <td>PC</td> <td></td> <td></td> </tr> <tr> <td>D</td> <td>24.10.25</td> <td>PROPOSED AREA UPDATED</td> <td>PC</td> <td></td> <td></td> </tr> <tr> <td>C</td> <td>22.10.25</td> <td>SITE POSITION OPTION C</td> <td>PC</td> <td></td> <td></td> </tr> <tr> <td>B</td> <td>29.07.25</td> <td>CHANGES TO COMPOUND</td> <td>PC</td> <td></td> <td></td> </tr> <tr> <td>A</td> <td>02.07.25</td> <td>ISSUED FOR INTERNAL REVIEW</td> <td>PC</td> <td></td> <td></td> </tr> </table>	REV.	DATE	REVISIONS	BY	CHKD	APPD	F	11.05.26	APRON & BUNDING AREAS ADDED	PC			E	24.03.26	PEST CONTROL STORAGE SHED DIMENSIONS ALTERED	PC			D	24.10.25	PROPOSED AREA UPDATED	PC			C	22.10.25	SITE POSITION OPTION C	PC			B	29.07.25	CHANGES TO COMPOUND	PC			A	02.07.25	ISSUED FOR INTERNAL REVIEW	PC			<p>SCALE: AS SHOWN</p> <p>NORTH POINT</p>	<table border="1"> <tr> <th>DESIGNED</th> <th>DES. CHECK</th> <th>DRAWN</th> <th>CHECKED</th> <th>APPROVED</th> </tr> <tr> <td></td> <td></td> <td>P.CHRISTMASS</td> <td>02.07.2025</td> <td></td> </tr> </table>	DESIGNED	DES. CHECK	DRAWN	CHECKED	APPROVED			P.CHRISTMASS	02.07.2025		<p>DRAWING TITLE</p> <p>NARNGULU GRAIN TERMINAL PROPOSED DANGEROUS GOODS COMPOUND PROPOSED SITE POSITIONS SITE PLAN - PROPOSED AREA OPTIONS</p>	<table border="1"> <tr> <td>SITE</td> <td>307</td> <td>SHEET SIZE</td> <td>B1</td> </tr> <tr> <td>PROJECT</td> <td>DGC</td> <td>DRAWING NO.</td> <td>2025-307-0573</td> </tr> <tr> <td>REV.</td> <td></td> <td></td> <td>G</td> </tr> </table>	SITE	307	SHEET SIZE	B1	PROJECT	DGC	DRAWING NO.	2025-307-0573	REV.			G
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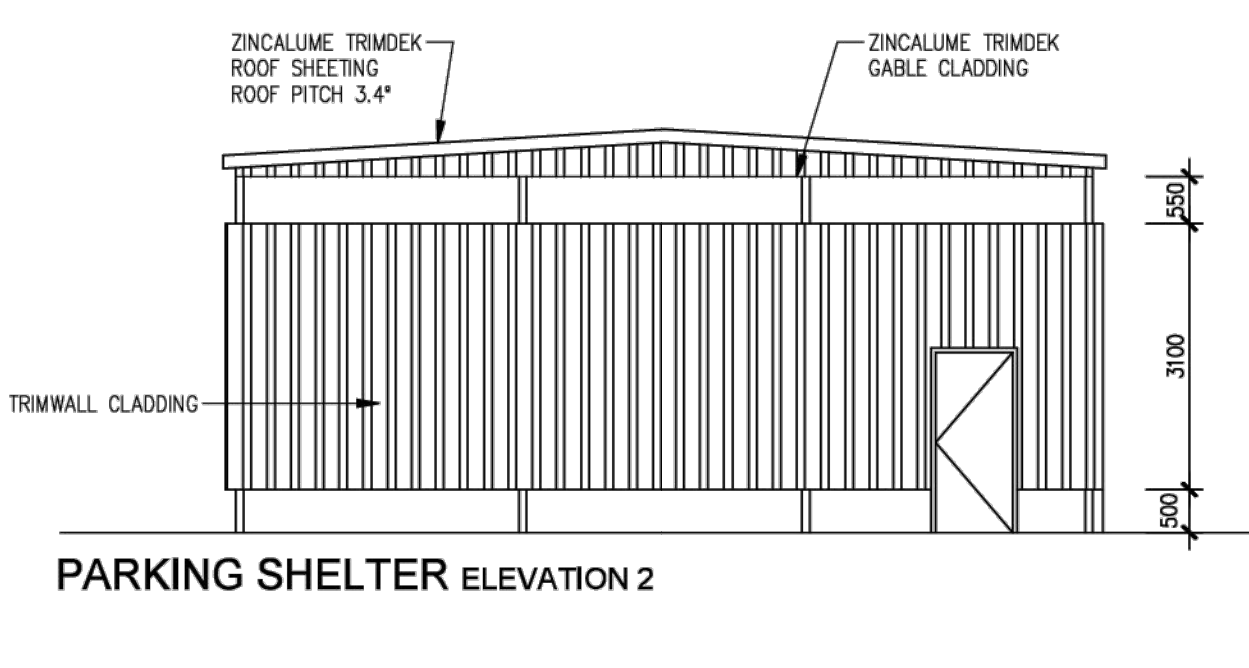
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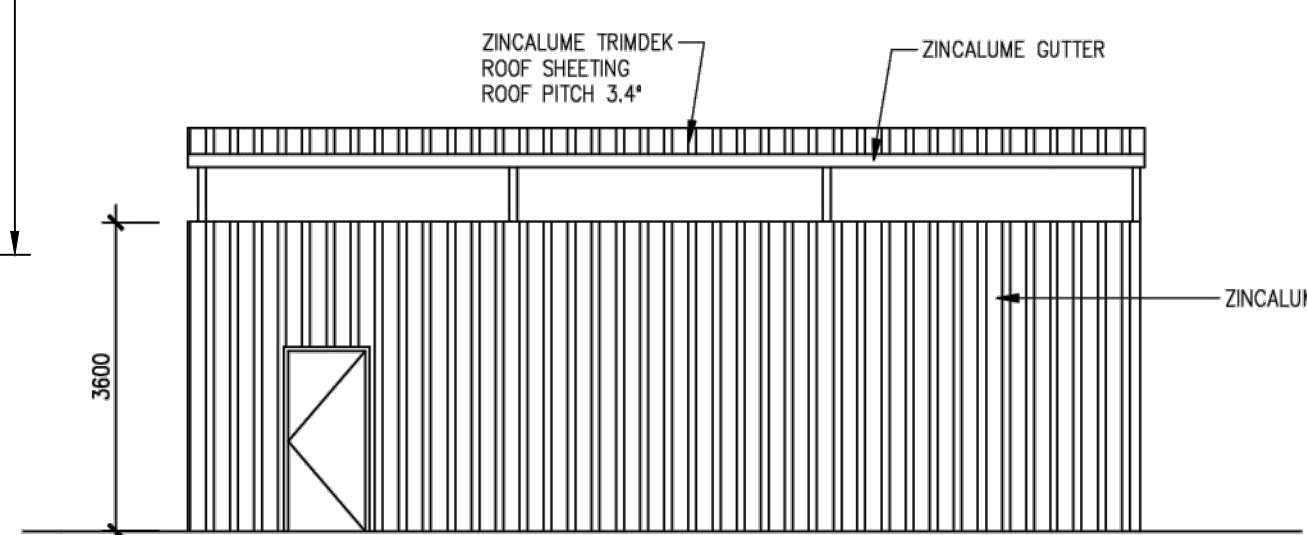
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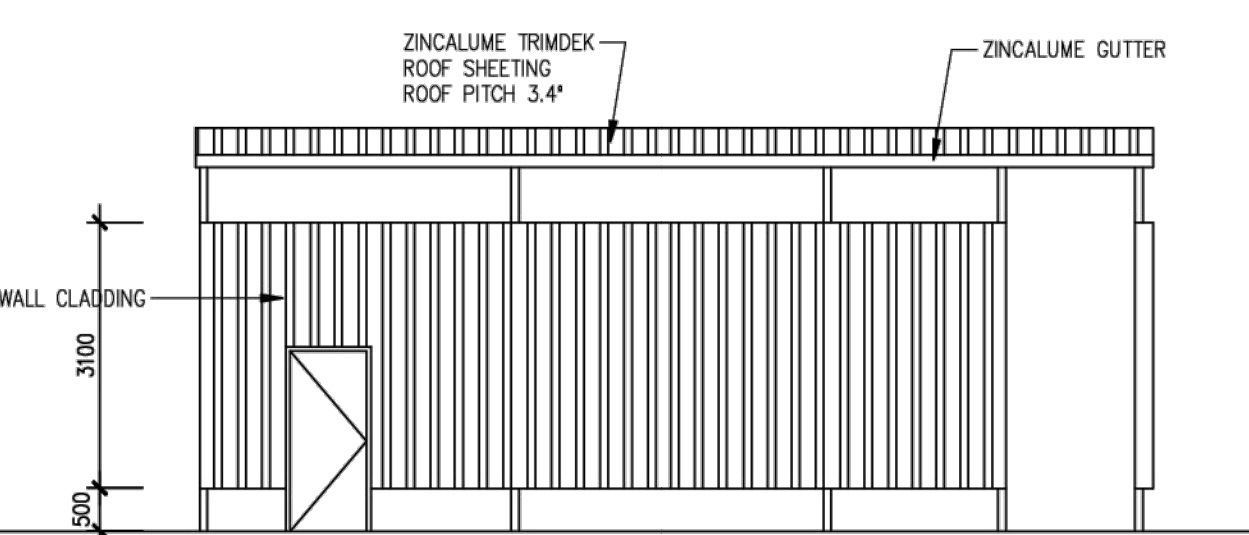
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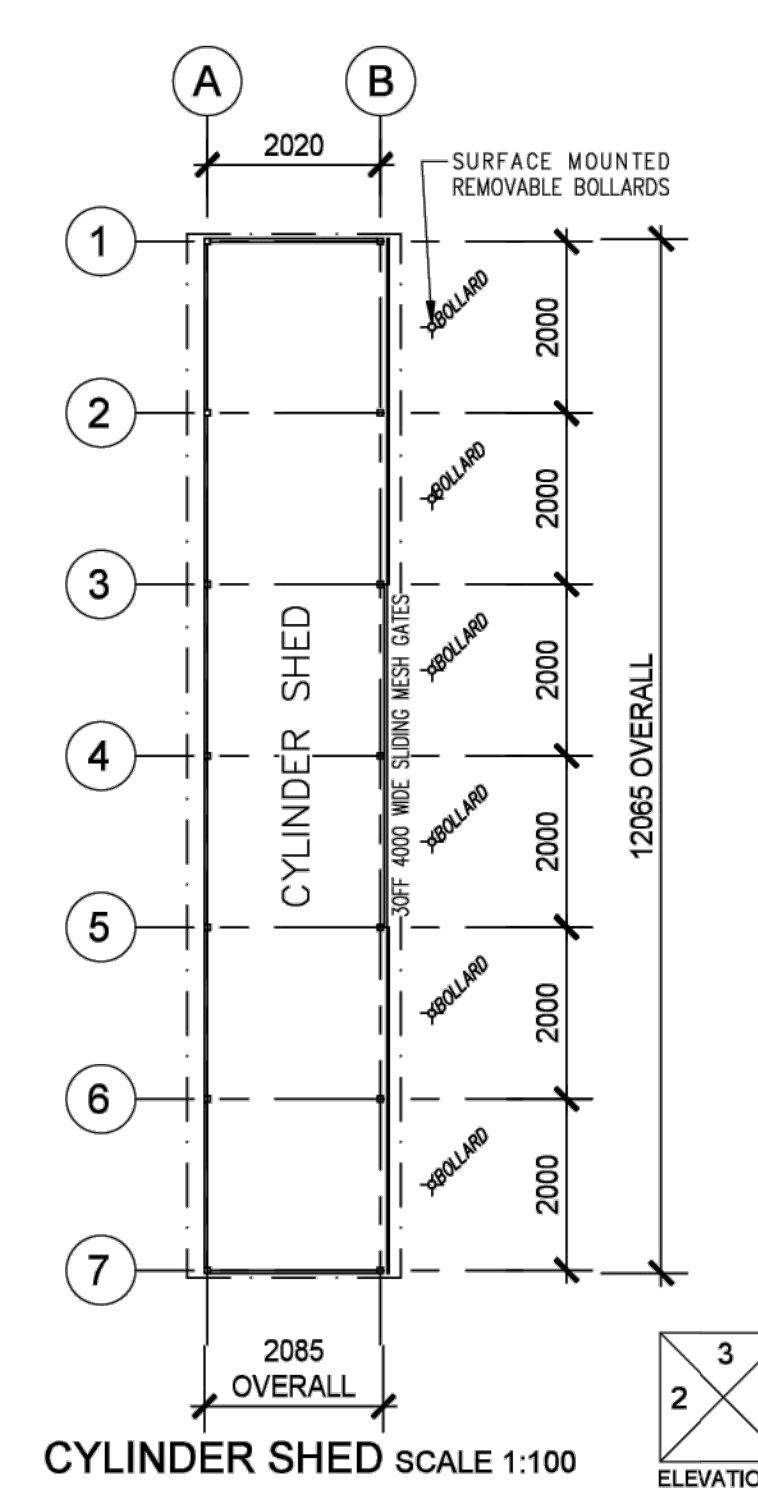
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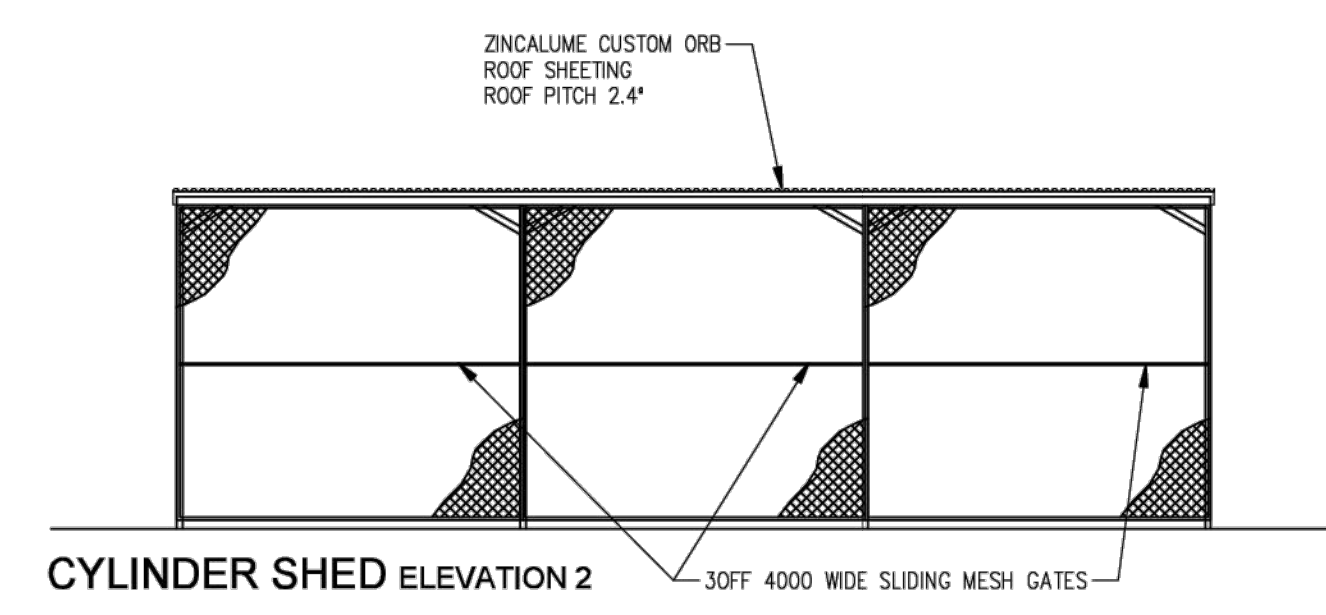
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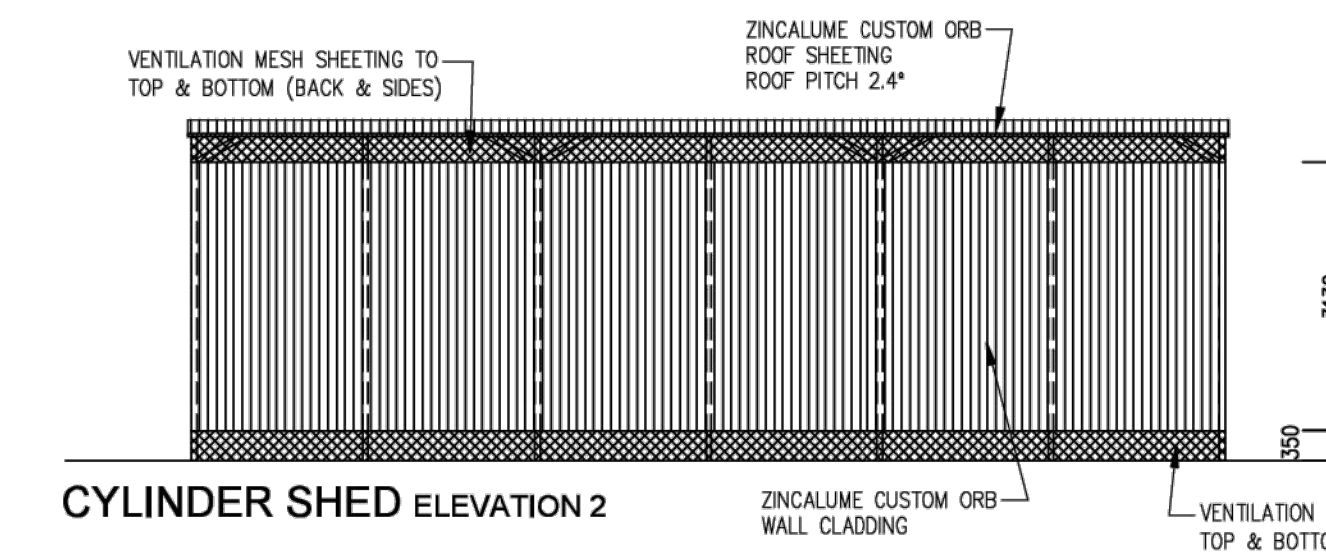
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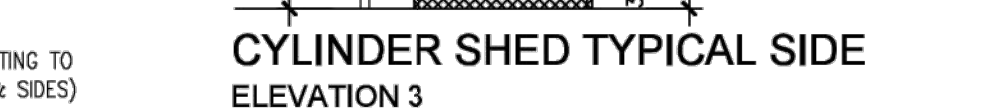
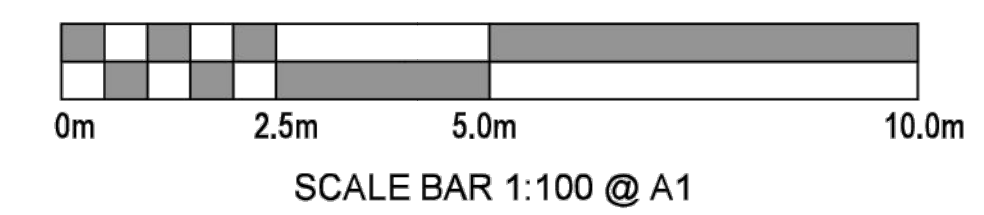
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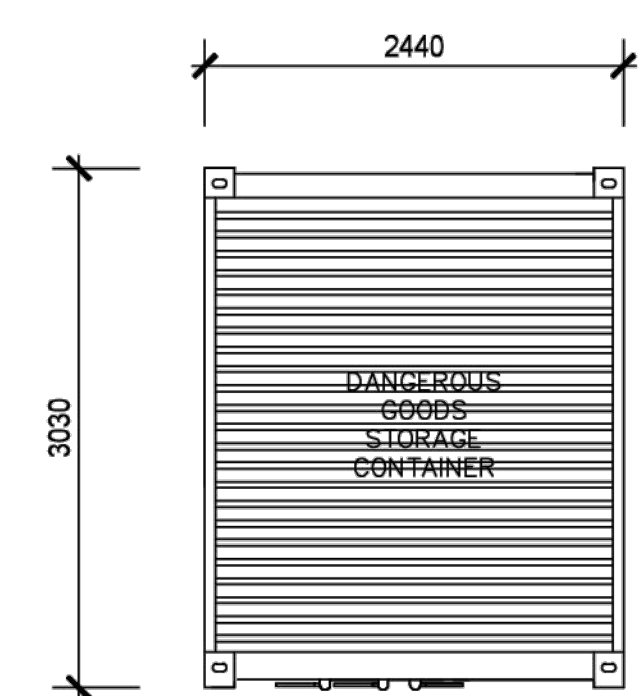
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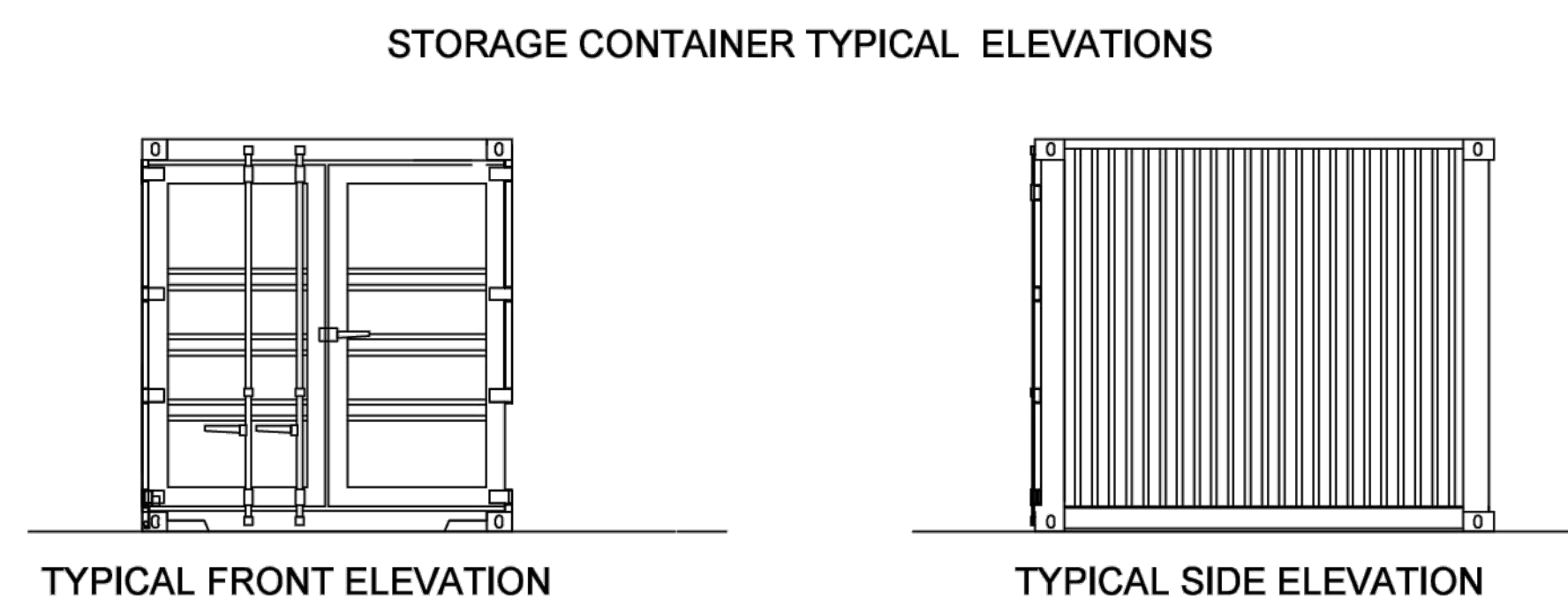
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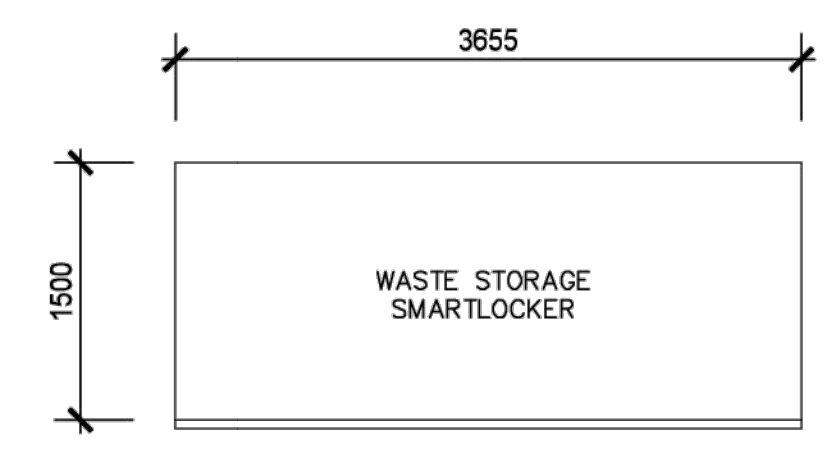
CYLINDER SHED TYPICAL SIDE ELEVATION 3



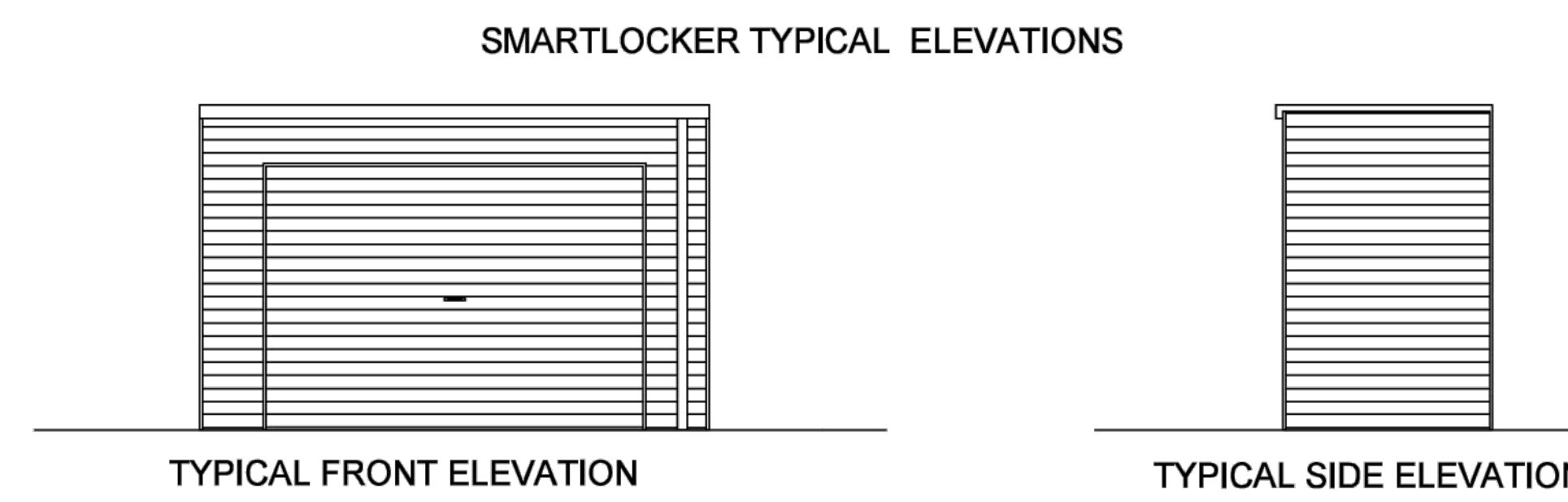
STORAGE CONTAINER FLOOR PLAN SCALE 1:50



STORAGE CONTAINER TYPICAL ELEVATIONS



SMARTLOCKER FLOOR PLAN SCALE 1:50



SMARTLOCKER TYPICAL ELEVATIONS

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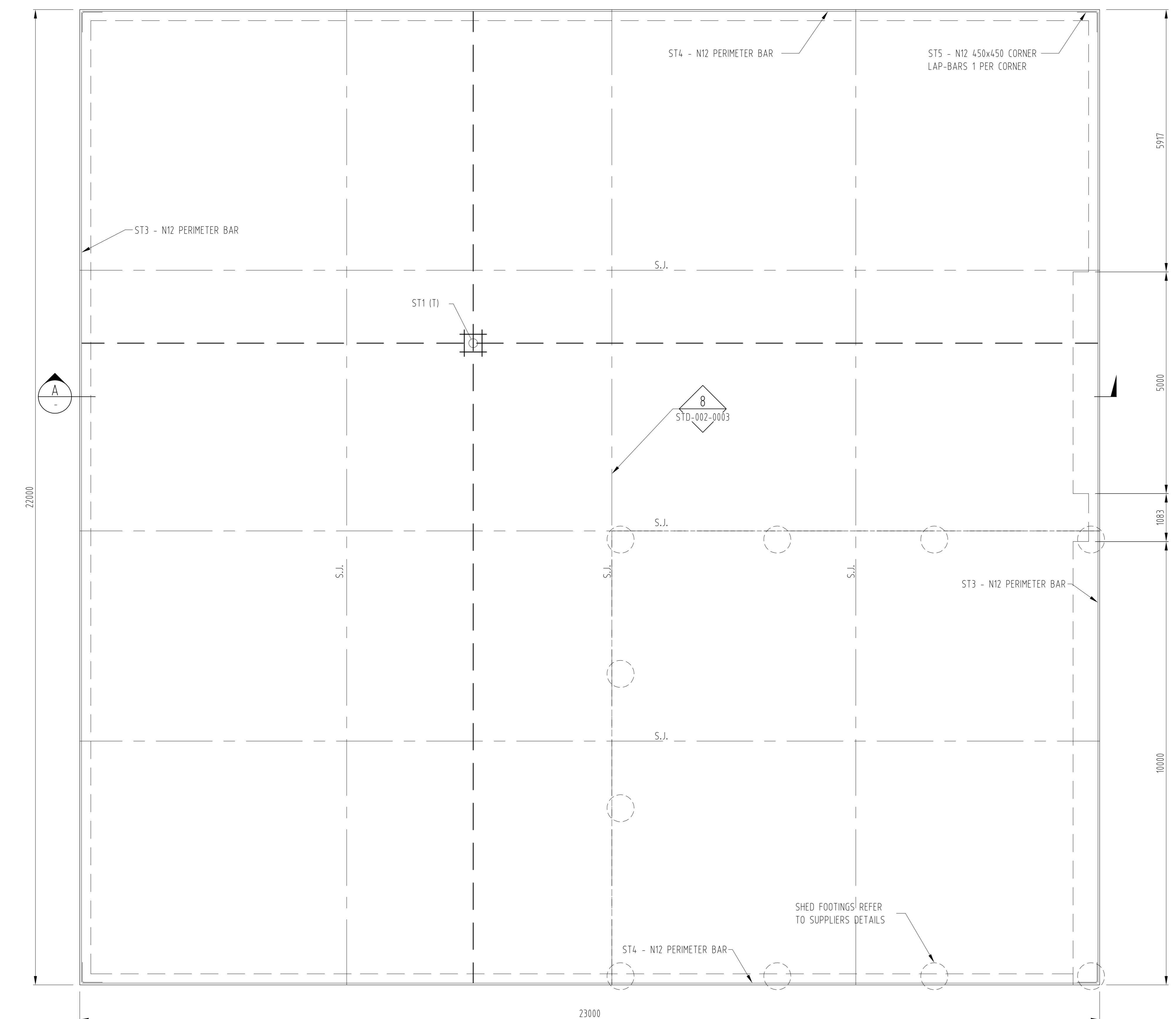
DO NOT SCALE FROM THIS DRAWING - ASK !!!

REV	DATE	DESCRIPTION	BY	CHKD	APPD
B	12.05.26	HDPE BUND DIMENSIONS MODIFIED			PC
A	24.03.26	ISSUED FOR INTERNAL REVIEW			PC

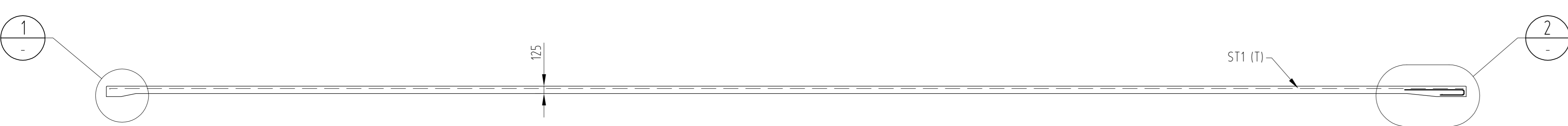
SCALE	DESIGNED	DRAWN	CHECKED	APPROVED
AS SHOWN		P.CHRISTMASS		

DRAWING TITLE
NARNGULU GRAIN TERMINAL
PROPOSED DANGEROUS GOODS COMPOUND
COMPOUND LAYOUT - TRUCK SHELTER & SHEDS
PLAN VIEW & ELEVATIONS

SHEET	NO	REV
307		B1
PROJECT	DGC	
DRAWING NO	2025-307-0575	
REV		B



PLAN
SCALE 1:50



SECTION
1:50

CONCRETE AND REINFORCEMENT NOTES

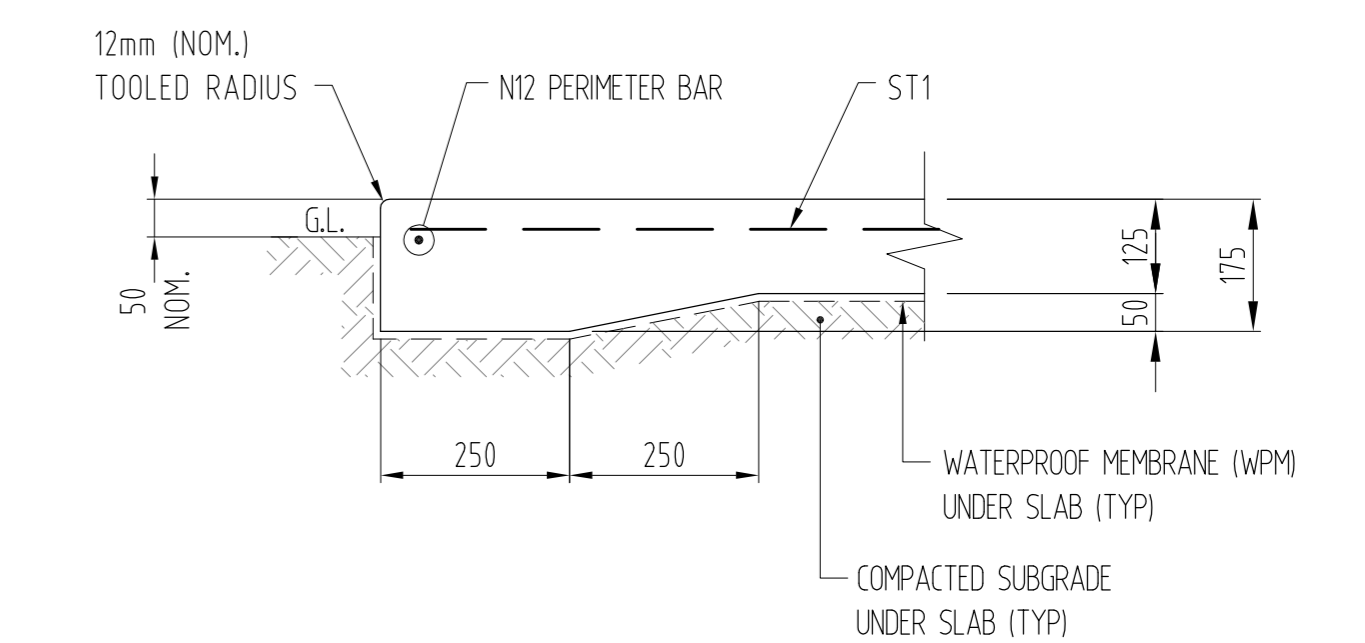
- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE SPECIFICATION AND THE STANDARDS LISTED THEREIN.
- CONCRETE QUALITY AND MIX CONSTITUENTS SHALL BE IN ACCORDANCE WITH THE SPECIFICATION.
- MINIMUM CONCRETE GRADE SHALL BE AS FOLLOWS :
SLABS - 40 MPa
- A WATERPROOF 10.2mm POLYTHENE FILM MEMBRANE (WPM) SHALL BE PLACED UNDER ALL SLABS POURED ON GROUND.
- COVER TO REINFORCEMENT U.N.O.
40mm - TOP & SIDES
50mm - BOTTOM
- PUMPS SHALL NOT BE USED TO PLACE CONCRETE WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
ALL CONCRETE INCLUDING SLABS ON GROUND SHALL BE VIBRATED.
- ALL CONCRETE SHALL BE CURED BY KEEPING EXPOSED SURFACES CONTINUOUSLY WET FOR 7 DAYS AFTER POURING U.O.N. REFER TO SPECIFICATION FOR DETAILS.
- CONTINUOUS JOINTS SHALL BE PROPERLY FORMED AND USED WHERE SHOWN OR SPECIFICALLY APPROVED BY THE ENGINEER.
- TO POURING NEW CONCRETE.
SCABBLE CLEAN & DAMPEN ALL CONSTRUCTION JOINTS IMMEDIATELY PRIOR
- CONCRETE REINFORCEMENT SHALL BE SUPPORTED IN ACCORDANCE WITH THE C.B.H. SPECIFICATION FOR CONCRETE WORKS - TS 1.
- MAX DESIGN LOADS TO BE:
8.0 TONNE SINGLE AXLE
16.0 TONNE DUAL AXLE
- REINFORCEMENT SYMBOLS USED ON THE DRAWINGS ARE:
N DENOTES GRADE D500N DEFORMED BARS TO AS 4671
R DENOTES GRADE R250N PLAIN BAR TO AS 4671
SL DENOTES WELDED WIRE REINFORCING MESH TO AS 4671
- SPLICES IN REINFORCING SHALL BE IN THOSE POSITIONS SHOWN ON THE DRAWINGS. MINIMUM LAP LENGTHS SHALL BE AS STATED ON THE DRAWINGS. ANY LAP LENGTH NOT CALLED UP SHALL BE AS TABLED BELOW

	LAPS (HOR. BARS)	LAPS (VERT. BARS)	COGS
N12	400mm	300mm	170mm
N16	500mm	400mm	210mm
N20	700mm	500mm	260mm
N24	800mm	600mm	310mm

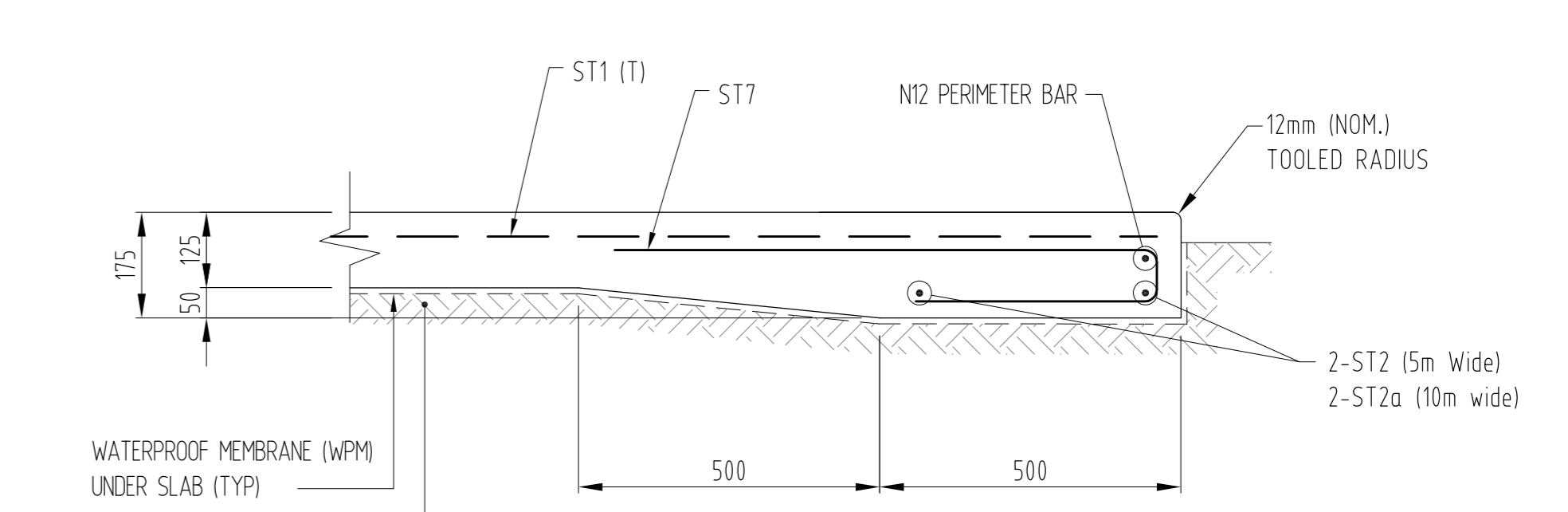
FOOTING REINFORCEMENT SCHEDULE

MEMBER	SIZE	LENGTH	SHAPE	QTY.	MASS kg/m*	COMMENT
ST1	SL82	22900 x 21900	MESH	1		LAP & CUT TO SUIT
ST2	N12-400	4910	STRAIGHT	2		
ST2a	N12-400	5110	STRAIGHT	4		300 MIN. LAP (MID-SPAN)
ST3	N12	7500	STRAIGHT	6		300 MIN. LAPS
ST4	N12	7830	STRAIGHT	6		300 MIN. LAPS
ST5	N12	14900	STRAIGHT	1		
ST6	N12	900		4		
ST7	N12-400	1370		39		

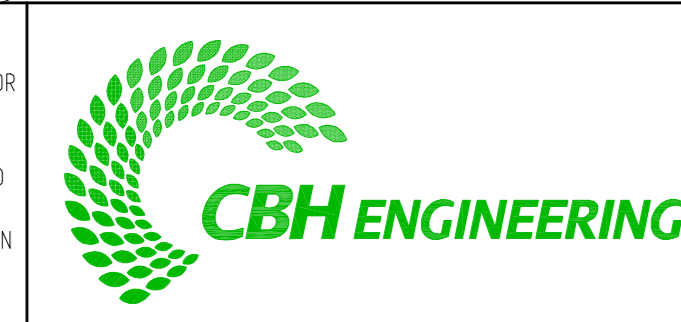
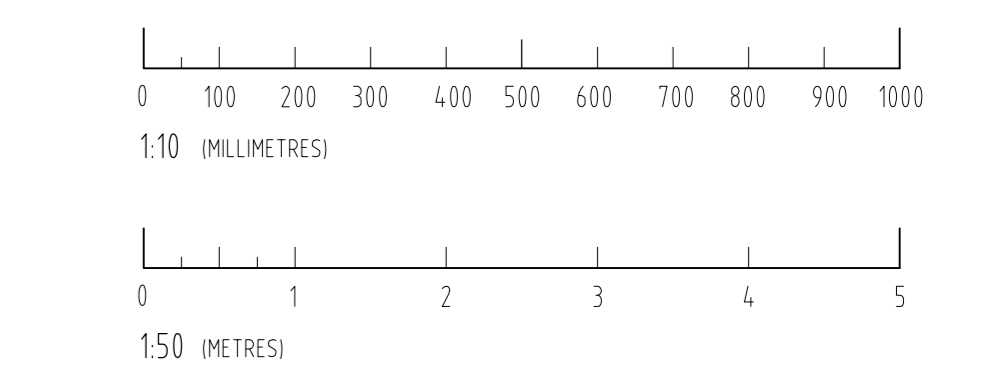
NOTE:
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELATIVE SITE PLAN FOR LOCATION ON SITE.
2. FOOTINGS / SHED ANCHORS & TIE DOWNS BY SUPPLIER.



TYP. SLAB EDGE THICKENING DETAIL
DETAIL 1
1:10



DETAIL 2
1:10



CBH Group
Lvl. 6, 240 St. GEORGES TERRACE,
PERTH W.A 6000
PH (08) 9231 9600
FAX (08) 9232 3942

REF	DATE	BY	CHK'D	APP'D	REV	DATE	REVISIONS
TL-21088 (5 of 5)					0	28.03.22	ISSUED FOR CONSTRUCTION
TL-21088 (5 of 5)					A	11.03.22	ISSUED AS CHECK PRINT AND FOR REVIEW
307-ENG-CI-DGA-0009							DGC - GENERAL ARRANGEMENT (DUAL PARKING SHELTER)

SCALE	DESIGNED	DES. CHECK	DRAWN	CHECKED	APPROVED
AS SHOWN	CCS	CCS	CCS	???	???

DRAWING TITLE
**SITE DEVELOPMENT
DANGEROUS GOODS COMPOUND
CONCRETE SLAB SETOUT (23m x 22m)**

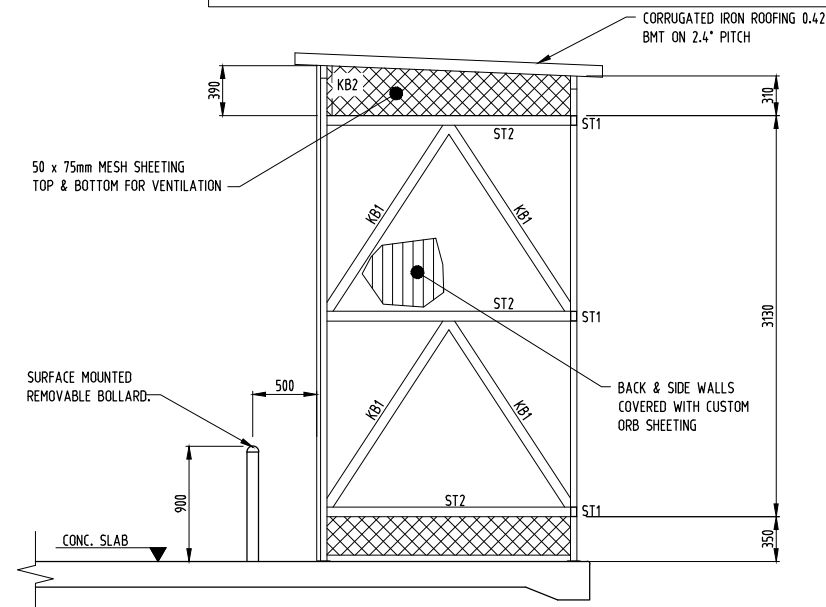
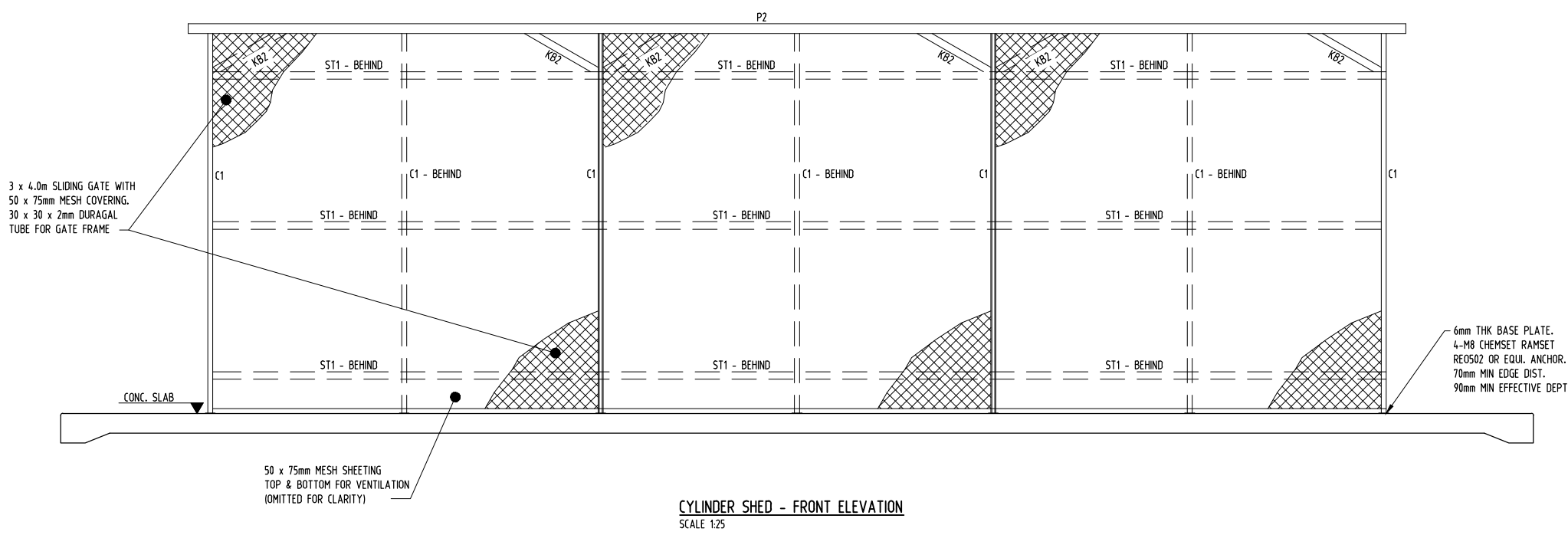
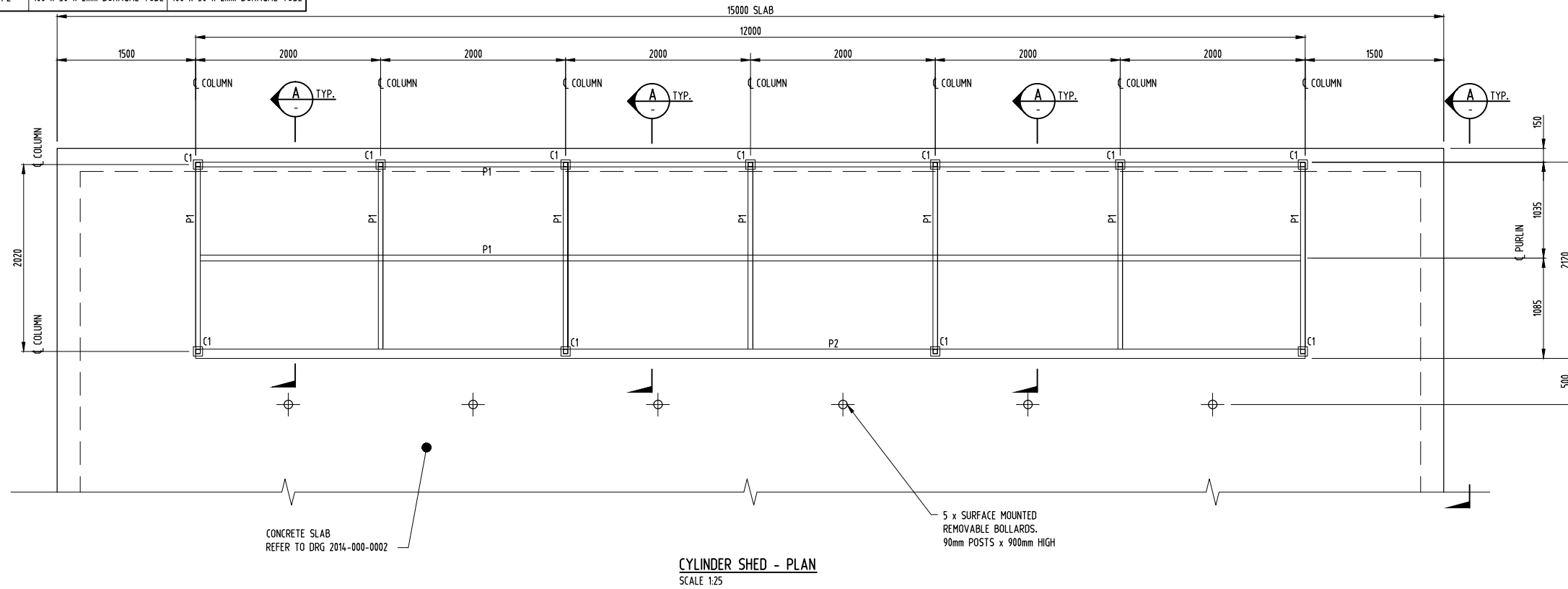
SITE	PROJECT	DRAWING NO	REV.
VARIOUS	DANGEROUS GOODS	307-ENG-CI-DAL-0030	0

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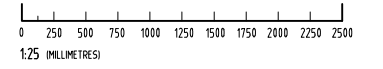
SHT. SIZE B1

MEMBER SCHEDULE		
MEMBER	REG. A - EXISTING	REG. B - NEW
C1	50 x 2 SHS DURAGAL TUBE	65 x 3 SHS DURAGAL TUBE
KB1	76 x 38 x 1.6mm PATIO TUBE	76 x 38 x 1.6mm PATIO TUBE
KB2	76 x 38 x 1.6mm PATIO TUBE	76 x 38 x 1.6mm PATIO TUBE
ST1	76 x 38 x 1.6mm PATIO TUBE	76 x 38 x 1.6mm PATIO TUBE
ST2	76 x 38 x 1.6mm PATIO TUBE	100 x 50 x 2mm DURAGAL TUBE
P1	76 x 38 x 1.6mm PATIO TUBE	76 x 38 x 1.6mm PATIO TUBE
P2	100 x 50 x 2mm DURAGAL TUBE	100 x 50 x 2mm DURAGAL TUBE



- GENERAL NOTES - CYLINDER SHED**
- FLOORING AREA**
GOODS SHALL BE STORED ON OR ABOVE A CONCRETE FLOOR OR OTHER SURFACE IMPERVIOUS TO PESTICIDES. THIS AREA SHALL BE BUNDED TO CONTAIN AT LEAST 25% OF ANY LIQUID PESTICIDES STORED THEREIN IN DRUMS AND/OR 100% OF ANY LIQUID PESTICIDES STORED IN BULK TANKS. THE FLOOR SHALL BE GRADED TO AN AREA OR PREFERABLY A SUMP TO FACILITATE COLLECTION AND SUBSEQUENT DISPOSAL OF ANY SPILLS AND WASHINGS.
 - COVERED STORAGE**
A COVERED STORAGE INSTALLATION SHALL HAVE WALL AND ROOF SHEETING AND MAIN STRUCTURAL MEMBERS CONSTRUCTED FROM MATERIALS WHICH ARE NON-COMBUSTIBLE WITHIN THE MEANING OF AS1530, PART 1, AND IMPERVIOUS TO THE PESTICIDES STORED. THE PREMISES SHALL BE SECURED AGAINST UNAUTHORIZED ENTRY.
 - OPEN STORAGE**
AN OPEN STORAGE INSTALLATION SHALL BE ENCLOSED BY A MAN PROOF FENCE COMPLYING WITH AS1725, OR THE EQUIVALENT, HAVING TWO STRANDS OF A BARBED WIRE ON TOP. WHERE A GATE IS REQUIRED, THIS SHALL BE OF THE SAME SPECIFICATION AND LOCKABLE FOR SECURITY.
 - RACKS FOR SUBDIVISION**
ADEQUATE PROVISION SHOULD BE MADE IN THE FORM OF SHELVES FOR SMALLER PACKAGES BUT IN GENERAL, PROVISION SHOULD BE MADE TO STORE ALL GOODS ON PALLETS SO THAT THEY MAY BE HANDLED BY A LIFT TRUCK, PARTICULARLY IN THE CASE OF LARGER STORES.
 - VENTILATION**
EVERY COVERED STORAGE AREA SHALL BE PROVIDED WITH EITHER ADEQUATE NATURAL VENTILATION OR FORCED DRAUGHT VENTILATION PROVIDING AT LEAST 12 CHANGES OF AIR PER HOUR, PER DAY.
 - LIGHTING**
ANY STORAGE AREA SHALL BE ILLUMINATED TO AT LEAST 200lx WHEN IN OPERATION (SEE AS1680)
 - CLEANING**
PROVISION SHALL BE MADE FOR WASHING DOWN THE STORE FLOOR AND BUNDED AREA WITH WATER.
 - SAFETY SHOWER**
A SAFETY SHOWER SHALL BE INSTALLED IN THE STORE AREA AND KEPT READILY ACCESSIBLE.
 - PERSONNEL FACILITIES**
 - WASHING FACILITIES.
 - SEPARATE LUNCH ROOM FOR EATING, DRINKING AND SMOKING.
 - LOCKERS, SITED AWAY FROM THE STORAGE AREA, FOR STORING PERSONAL CLOTHING AND PROPERTY.

- STRUCTURAL NOTES**
- ALL STEELWORKS, WELDING & FABRICATION TO CONFORM WITH CURRENT S.A.A. CODES AS1554 CAT SP
 - ALL STRUCTURAL STEEL TO BE MIN. GR350 UNO. & PATIO TUBE TO BE MIN. GR300.
 - STRUCTURAL MEMBER CONNECTION.
 - * 2-14g SCREWS PER CONNECTION.
 - * 2mm THK BRACKET.
 - ROOF SHEETING AS PER MANUFACTURERS SPECIFICATIONS.
 - ALL WELDS TO BE 6 FILLET UNLESS NOTED AND 3 FILLET ON 3 PL.
 - REMOVE ALL BURRS & SHARP EDGES.
 - SURFACE TREATMENT : AS PER CBH ENGINEERING SPEC. NO TREATMENT TO INSIDE REQ'D.
 - ALL HOLES Ø14 TO SUIT M12 HEX. HEAD BOLT GR. 4.6 U.N.O.
 - COAT 100mm EITHER SIDE OF WELDS WITH SPLATTER GUARD PRIOR TO WELDING.
 - ALL SPLATTER TO BE REMOVED.
 - ALL SITE WELDS ARE TO BE COLD GALV. AFTER WELDING.



CBH HEAD OFFICE
30 DELIN STREET, WEST PERTH W.A. 6005
PH (08) 9231 9600 FAX (08) 9222 3942

CBH ENGINEERING
48 MIGUEL ROAD BIBRA LAKE, WA 6163
TEL (08) 9236 5350 FAX (08) 9236 5370

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REF	DRG No.	REFERENCE DRAWING TITLE	REV	DATE	REVISIONS	BY	CHKD	APPD	REV	DATE	REVISIONS	BY	CHKD	APPD
	2014-000-0012	CONNECTION DETAILS	1	04.12.15	DRG REVISED - SHED CONNECTION REFERENCE ADDED	JB	CCS	PC						
	2014-000-0010	GENERAL ARRANGEMENT (15m x 21m SLAB)	0	10.07.15	ISSUED FOR CONSTRUCTION	JB	CCS	PC						
	2014-000-0002	15m x 21m SLAB ARRANGEMENT	-	10.07.15	ISSUED AS CHECK PRINT AND FOR REVIEW	CBH								

SCALE	DESIGNED	CHKD	DATE	DRAWING TITLE
1:25	CBH	CCS	JULY.15	SITE DEVELOPMENT
	CBH	CCS	JULY.15	DANGEROUS GOODS COMPOUND (15 x 21m)
	CBH	CCS	10.07.15	CYLINDER SHED (12m)
	CCS		JULY.15	
	P. Chandler		13.07.15	








SITE	PROJECT	DRAWING NO.	REV.
VARIOUS	DANGEROUS GOODS	2014-000-0011	1

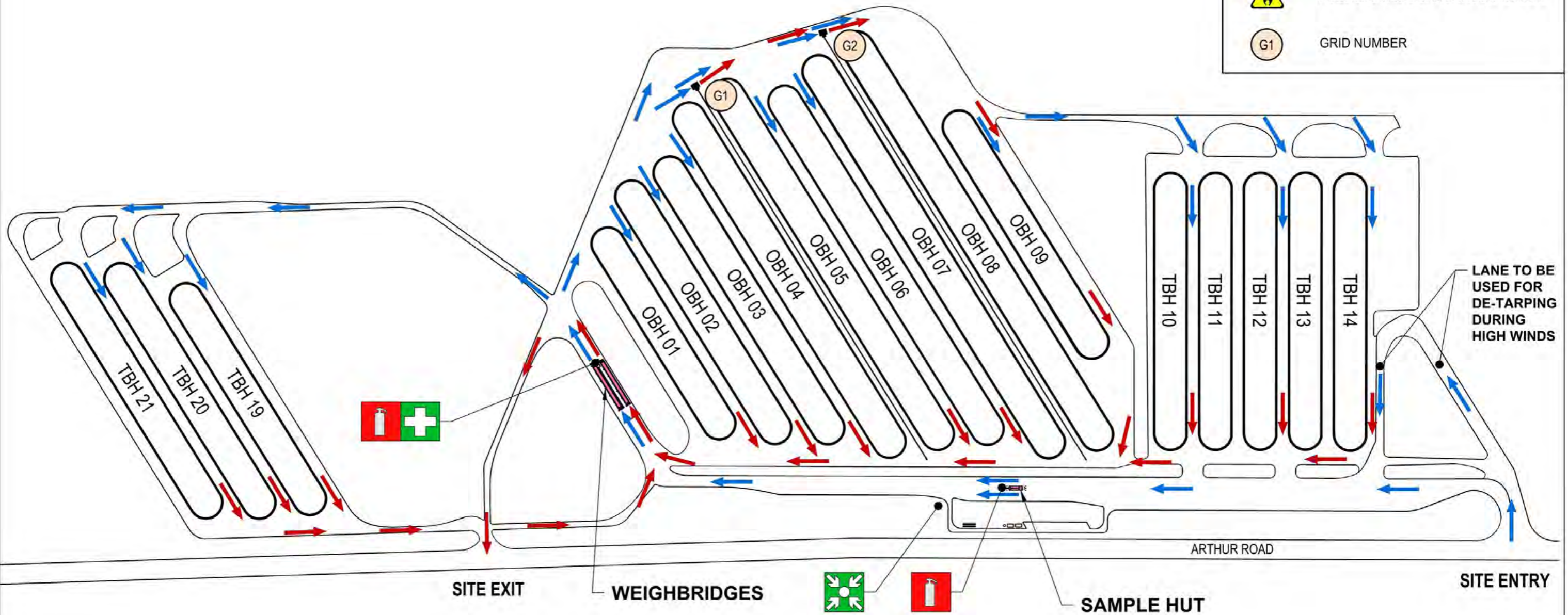
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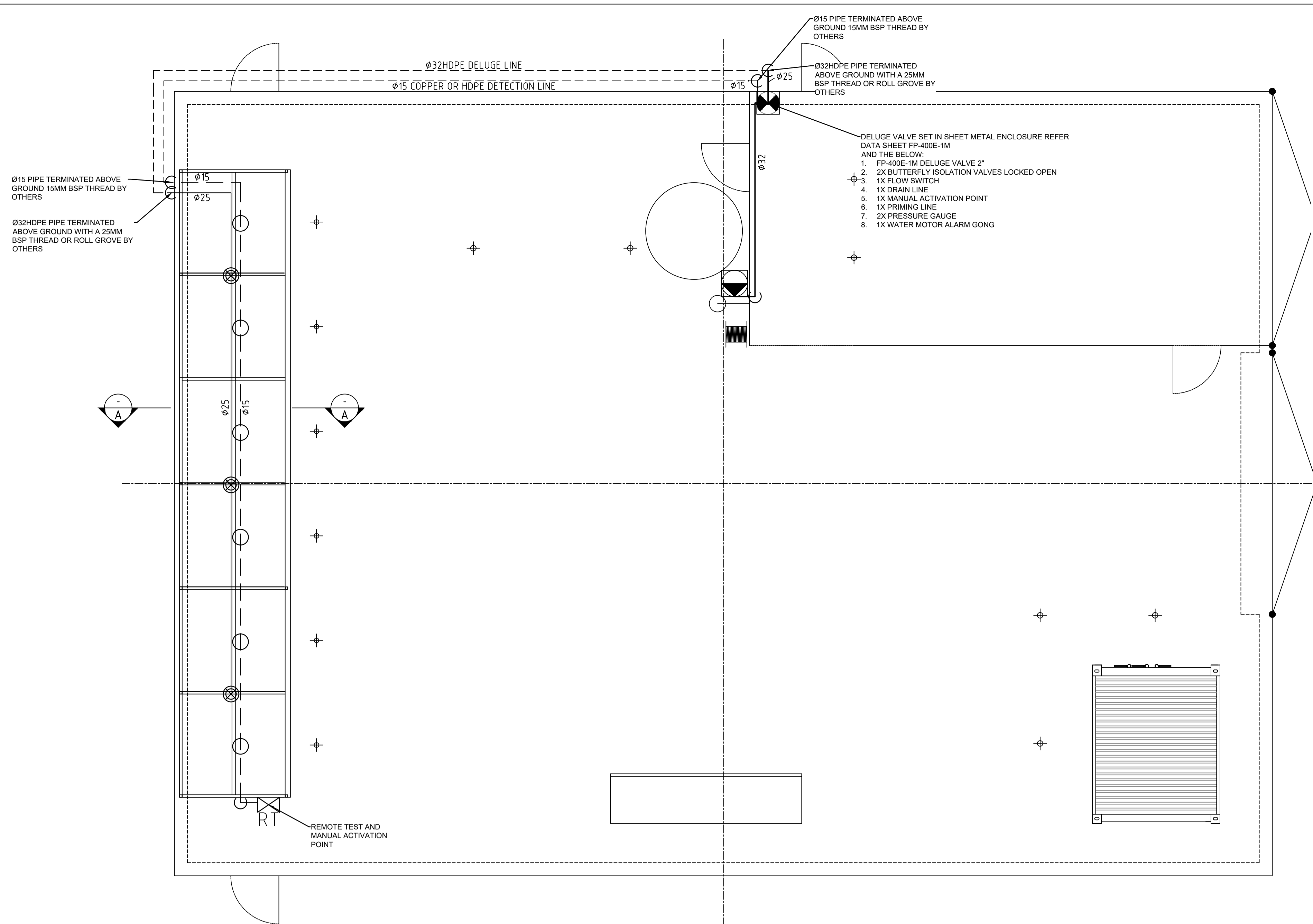


NARNGULU

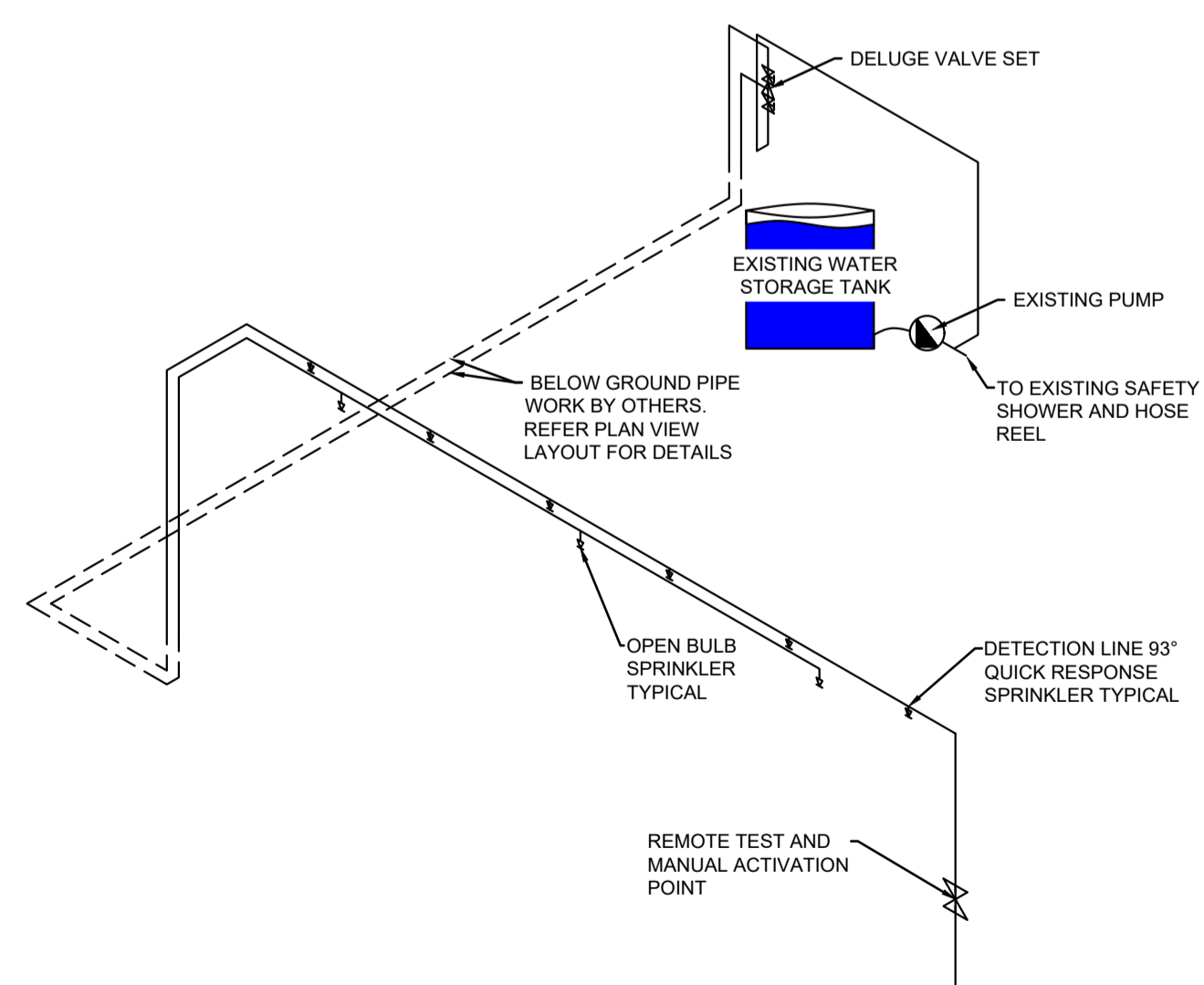
DRAWING LEGEND

-  TRAFFIC FLOW FULL
-  TRAFFIC FLOW EMPTY
-  FIRST AID KIT
-  MUSTER POINT
-  FIRE EXTINGUISHER
-  FUEL STORAGE/DANGEROUS GOODS
-  GRID NUMBER

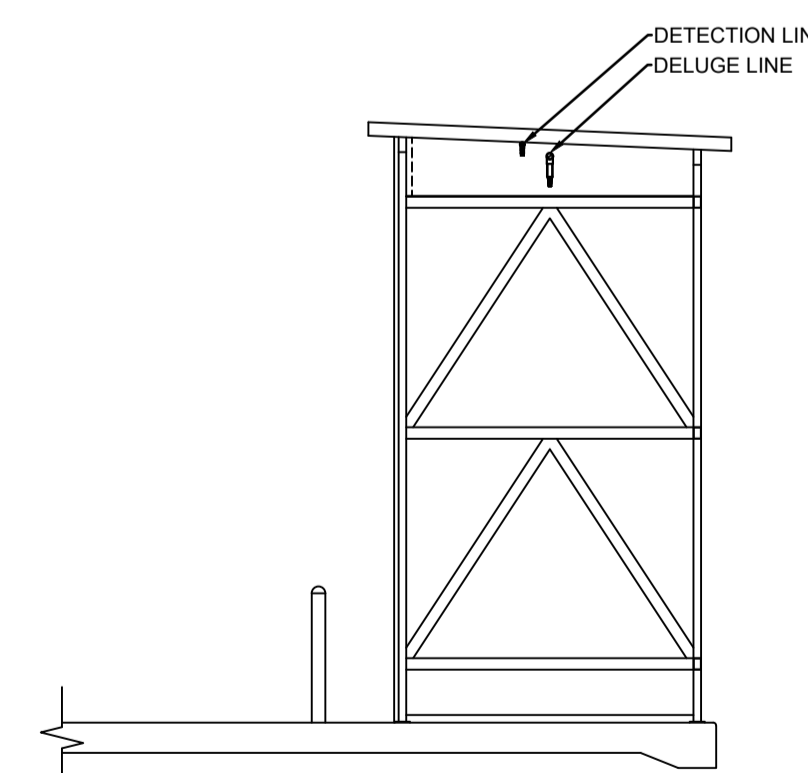




DANGEROUS GOODS COMPOUND
1:50



DELUGE SYSTEM SCHEMATIC
1:100



SECTION A
1:50

NOTES

SYSTEM DESIGN PER CLIENT AGREED CRITERIA

1. DELUGE SYSTEM DESIGN CRITERIA:

SPRINKLER SPACING AT ORDINARY HAZARD SPACING TO AS2118.1
DETECTION LINE SPACING @ 2M X 2M

2. DELUGE SYSTEM WATER SUPPLY DESIGN CRITERIA

- a. PERFORMANCE BASED ON EXISTING PUMPS AND TANKS 3X K14.0 SPRINKLERS FLOWING MINIMUM 28.5 L/MIN EACH = 3.5MM/METER DENSITY OVER 24 SQM (NOTE ACTUAL DENSITY WILL BE REDUCED DUE TO OVERSPRAY)
- b. CLIENT ADVISED EXISTING TANK IS SKL ASSUMED EFFECTIVE CAPACITY 4KL. NOMINAL WATER SUPPLY DURATION 45 MIN

3. PIPE SUPPORTS SHALL COMPLY WITH AS 2118 PARTS.1 & 9 AND AS GENERALLY BELOW:

-ABOVE GROUND PIPE: M10 ROD AND 2PCE PIPE CLAMP BRACKET, MAX 4M SPACINGS

4. A CLEAR SPACE OF A MINIMUM OF 500MM IS TO BE MAINTAINED BELOW SPRINKLERS

5. WIRING CONNECTION AND PROGRAMING OF ALARM ACTIVATING DEVICES BY OTHERS

6. BELOW GROUND PIPE WORK FEEDING THE DELUGE SYSTEM IS TO BE REDLINE Ø32HDPE. PIPE WORK SUPPLYING THE DETECTION LINE IS TO BE Ø15 COPPER COMPLIANT WITH AS3500.1. BELOW GROUND PIPE IS BY OTHERS

7. A CLEAR SPACE OF 1 METER IS TO BE MAINTAINED IN FRONT OF THE DELUGE VALVE SET FOR SYSTEM OPERATION, SERVICING AND MAINTENANCE

IMPORTANT NOTE:

SYSTEM IS NOT DESIGNED OR INSTALLED TO ACCEPTED DESIGN STANDARDS AND IS INTENDED TO PROVIDE 'BETTER THAN NOTHING' PERFORMANCE ONLY. THE INSTALLER MAKES NO WARRANTY TO THE EFFICACY OF THE INSTALLED SYSTEM. FURTHERMORE WE DO NOT WARRANT THE PERFORMANCE OF EXISTING EQUIPMENT RETAINED FOR USE IN THIS INSTALLATION OR THE ABILITY OF EXISTING EQUIPMENT TO PRODUCE THE DESIRED OUTCOME. ASSUMED PERFORMANCE OF EXISTING EQUIPMENT IS BASED ON UNVERIFIED DATA PROVIDED TO US BY OTHERS.

LEGEND

- DELUGE CONTROL VALVE
- REMOTE TEST AND MANUAL RELEASE

SPRINKLER LEGEND

SYMBOL	DESCRIPTION	MAKE / MODEL	No OFF
	15mm BRASS PENDANT SPRINKLER WITH BULB REMOVED k=4.0	TYCO SIN: TY1231	-
	15mm 93°C BRASS PENDANT QUICK RESPONSE SPRINKLER k=8.1	VICTAULIC SIN: V2708	-
TOTAL			-

FILE: -00.DWG

REV.	DATE	DESCRIPTION	DES.	BY	CHKD.	APP.
0	04/08/25	AS INSTALLED	DH		DH	
A	18/10/24	PRELIMINARY ISSUE	DH		DH	

PROJECT	DRAWN	CHECKED	SCALE	PROJECT No.
GERALDTON DANGEROUS GOODS COMPOUND	DH	DH	VARIES	251011

PROJECT	DRAWN	CHECKED	SCALE	PROJECT No.
GERALDTON DANGEROUS GOODS COMPOUND	DH	DH	VARIES	251011

atp
www.atpsolutions.co

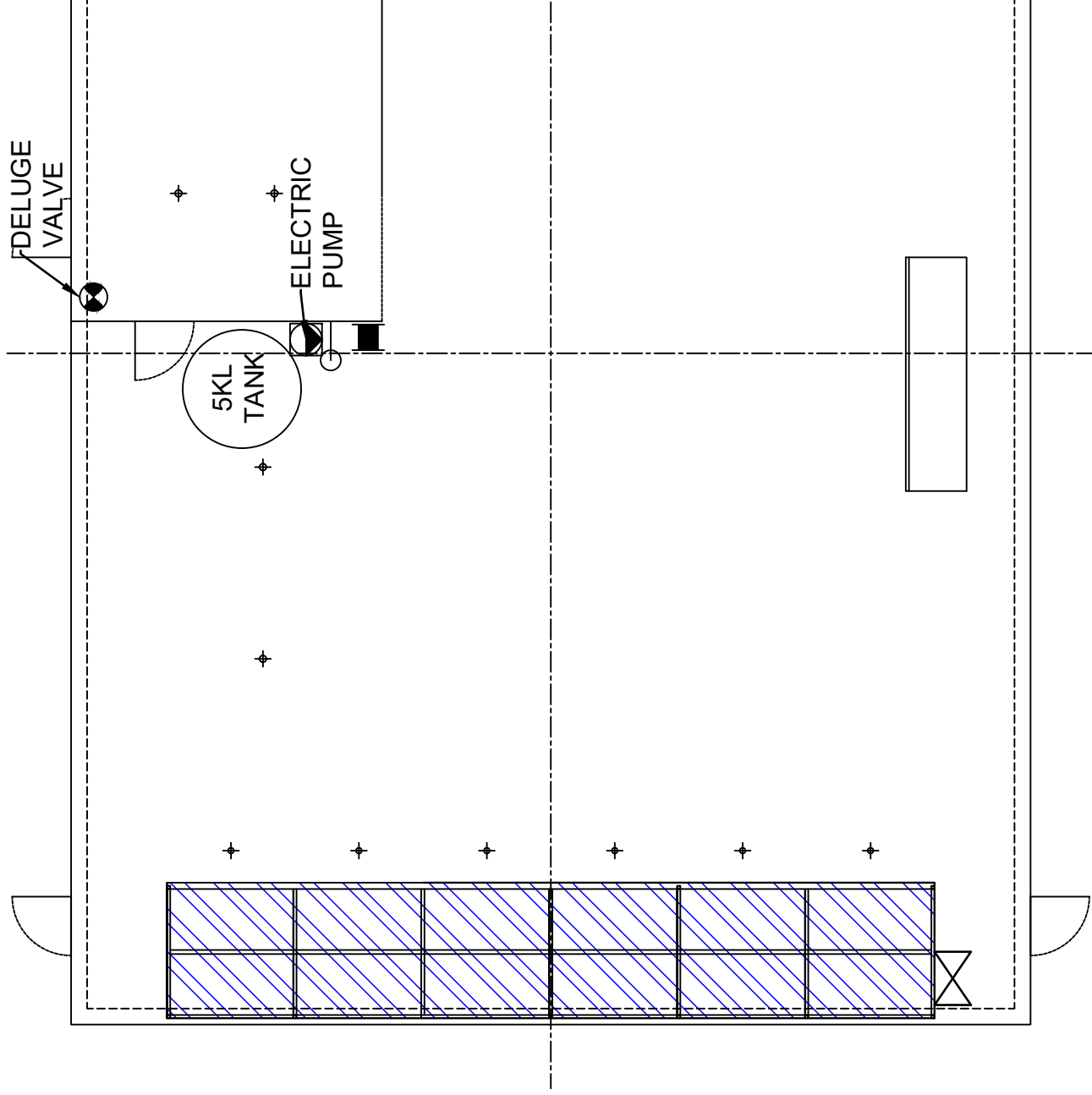
U3 / 92 Francisco street,
Rivervale, WA 6103
PH (08) 9479 1266

A1

LAYOUT DRAWING

SCALE: 1:100UND DWG No.: 251011-LAY-0001 REV. No.: 0

**CBH - GERALDTON
DG COMPOUND DRENCHER SYSTEM**

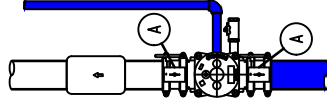


EMERGENCY ISOLATION

1. MAKE SURE THAT FIRE IS OUT
2. CLOSE MAIN STOP (BUTTERFLY) VALVES (A)
(SHUTTING OFF WATER SUPPLY)

IMPORTANT

REMAIN AT VALVES. IF FIRE RE-OCCURS
- RE-OPEN MAIN STOP VALVES
AWAIT DFES ATTENDANCE.






EMERGENCY START

1. OPEN MANUAL ACTIVATION VALVE AT SYSTEM CONTROL VALVES OR,
2. OPEN MANUAL ACTIVATION VALVE AT REMOTE LOCATION

IMPORTANT

CALL 000

LEGEND

-  DRENCHER SYSTEM PROTECTED AREA
-  MANUAL ACTIVATION VALVE
-  DRENCHER SYSTEM CONTROL VALVES

IN THE EVENT OF FIRE RING 000 TO ENSURE FIRE SERVICES RESPONSE

LIST OF PHOTOS:

Photo	DESCRIPTION
1.	Signage, including speed limits, at the Narngulu site entrance
2.	*Front gates of the existing Geraldton DG compound showing warning signage and EIC
3.	*Locked AIP Freight Container (Store PS2) within the DG compound
4.	*Locked AIP Waste Storage Area (Store PS3) showing gutter pipe, whirlybird vent, FEs, bollards and signage
5.	*Gas Cylinder Store (Store PS1) showing locked front gates
6.	*Labelling and stacking of AIP drums in Store PS2
7.	*Inside Store PS2 showing ventilation and raised steel grating floor
8.	*Close-up of ventilation inside the AIP Freight Container (Store PS2)
9.	*Security lighting, water tank, FHR and safety shower / eyewash within the DG compound
10.	*AIP Freight Container (Store PS2) showing signage, DG placards, bollards and covered vents
11.	*Sign prohibiting smoking and ignition sources on the front of the Gas Cylinder Store (Store PS1)
12.	*DG placards / diamonds and signage on the front gate of the DG compound
13.	*Back of Store PS1 showing ventilation, DG placarding and signage
14.	*Front of Store PS1 showing ventilation, bollards, DG placarding and signage
15.	*FE in the DG compound with signage and plastic cover
16.	*Back of Store PS3 showing ventilation and DG placards
17.	*Identification of partially used AIP drums within Store PS2 (at CBH Albany)
18.	*DG placarding and signage on the side of Store PS2 and EIC
19.	*FE, DG placarding and signage on the AIP Waste Storage Area (Store PS3)
20.	*Raised, open steel cages for storage of spent AIP blankets and empty foil pouches in Store PS3
21.	*Store PS1 showing DG placarding / signage and stillages of VaporPhos cylinders
22.	*Store PS1 showing DG placarding / signage and stillage of EcoFume cylinders
23.	*Store PS1 showing signage, DG placarding and restrained cylinders of Nitrogen
24.	*VaporPhos cylinders showing labelling and valve protection
25.	*EcoFume cylinders showing caps and labelling
26.	*Small electric pump associated with the 5,000 L water tank inside the DG compound
27.	*Control system for the Store PS1 deluge sprinkler system
28.	*Deluge water sprinkler system inside Store PS1
29.	Speed limit signs at the Narngulu site
30.	Proposed location of the Narngulu DG compound showing lighting at weighbridges

***Photos from the existing Geraldton DG compound – DG stores and most equipment will be relocated to the proposed Narngulu DG compound.**

PROPOSED NARNGULU DG COMPOUND

Dangerous Goods Risk Assessment



Photo 1 – Signage, including speed limits, at the Narngulu site entrance



Photo 2 – *Front gates of the existing Geraldton DG compound showing warning signage and EIC

PROPOSED NARNGULU DG COMPOUND

Dangerous Goods Risk Assessment



Photo 3 – *Locked AIP Freight Container (Store PS2) within the DG compound



Photo 4 – *Locked AIP Waste Storage Area (Store PS3) showing gutter pipe, whirlybird vent, FEs, bollards and signage



Photo 5 – *Gas Cylinder Store (Store PS1) showing locked front gates



Photo 6 – *Labelling and stacking of AIP drums in Store PS2



Photo 7 – *Inside Store PS2 showing ventilation and raised steel grating floor

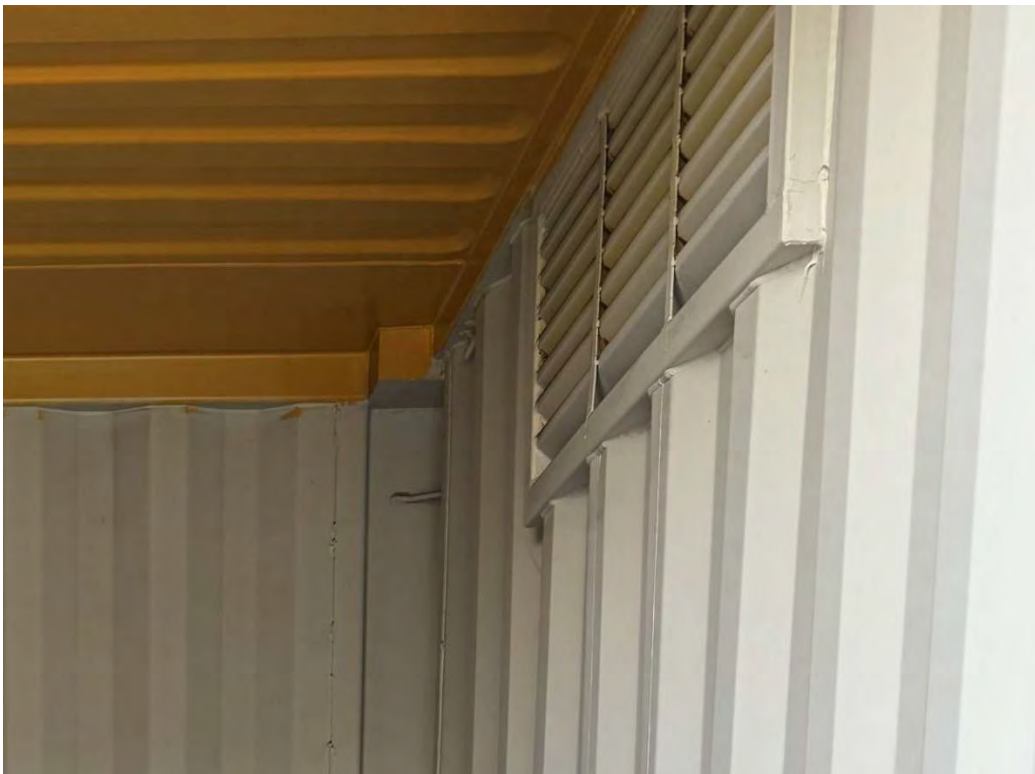


Photo 8 – *Close-up of ventilation inside the AIP Freight Container (Store PS2)



Photo 9 – *Security lighting, water tank, FHR and safety shower / eyewash within the DG compound



Photo 10 – *AIP Freight Container (Store PS2) showing signage, DG placards, bollards and covered vents



Photo 11 – *Sign prohibiting smoking and ignition sources on the front of the Gas Cylinder Store (Store PS1)



Photo 12 – *DG placards / diamonds and signage on the front gate of the DG compound



Photo 13 – *Back of Store PS1 showing ventilation, DG placarding and signage



Photo 14 – *Front of Store PS1 showing ventilation, bollards, DG placarding and signage



Photo 15 – *FE in the DG compound with signage and plastic cover



Photo 16 – *Back of Store PS3 showing ventilation and DG placards



Photo 17 – *Identification of partially used AIP drums within Store PS2 (at CBH Albany)



Photo 18 – *DG placarding and signage on the side of Store PS2 and EIC



Photo 19 – *FE, DG placarding and signage on the AIP Waste Storage Area (Store PS3)



Photo 20 – *Raised, open steel cages for storage of spent AIP blankets and empty foil pouches in Store PS3



Photo 21 – *Store PS1 showing DG placarding / signage and stillages of VaporPhos cylinders



Photo 22 – *Store PS1 showing DG placarding / signage and stillage of EcoFume cylinders



Photo 23 – *Store PS1 showing signage, DG placarding and restrained cylinders of Nitrogen



Photo 24 – *VaporPhos cylinders showing labelling and valve protection



Photo 25 – *EcoFume cylinders showing caps and labelling



Photo 26 – *Small electric pump associated with the 5,000 L water tank inside the DG compound



Photo 27 – *Control system for the Store PS1 deluge sprinkler system



Photo 28 – *Deluge water sprinkler system inside Store PS1



Photo 29 – Speed limit signs at the Narngulu site



Photo 30 – Proposed location of the Narngulu DG compound showing lighting at weighbridges



PROPOSED NARNGULU DG COMPOUND

Dangerous Goods Risk Assessment

ADDENDUM B

SITE-WIDE ASPECTS



PROPOSED NARNGULU DG COMPOUND

Dangerous Goods Risk Assessment

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PROPOSED NARNGULU DG COMPOUND

Dangerous Goods Risk Assessment

Table B.1 Applicable Standards and Regulations

Applicable Acts, Standards, Regulations, Codes
<ul style="list-style-type: none"> • Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007.
<ul style="list-style-type: none"> • AS 4452: 2025 - The storage and handling of toxic substances; • AS/NZS 5026: 2012 - The storage and handling of Class 4 dangerous goods; • AS 4332: 2004 - The storage and handling of gases in cylinders; • AS 3745: 2010 – Planning for emergencies in facilities; and • AIGA 051/20 – Code of Practice (CoP) for Phosphine.

Table B.2 General Precautions

Aspect	Cl.	Required	Proposed	Status (✓ or ✗)	Ref.
Security / Control of access	DG Regs r.66 AS/NZS 5026 Cl. 1.7 & 4.10.1 AS 4452 Cl. 2.3 AS 4332 Cl. 1.7	<p>An operator of a DG site must, so far as is practicable, prevent access to the site by unauthorised persons and the occurrence at the site of unauthorised activities.</p> <p>All storage areas / installation to be secured against unauthorised access at all times (storage area to be considered a 'restricted area').</p>	<p>There is no security fencing around the Narngulu site, only ring lock fence. The proposed DG compound will be a secure fenced area (high chainmesh security fencing topped with 3 rows of barbed wire), with locked gates (with restricted key access) and there will also be motion sensor security lights within the compound.</p> <p>All DG stores within the proposed DG compound will be locked when not in use.</p> <p>Appropriate warning against unauthorised entry is provided on signage at the Narngulu site entrance, including "WARNING – RESTRICTED AREA / AUTHORISED ENTRY ONLY", "ALL VISITORS MUST REPORT TO, AND OR, CONTACT THE SITE MANAGER OR WEIGHBRIDGE OPERATOR".</p> <p>There will also be warning signage "RESTRICTED AREA, AUTHORISED PERSONNEL ONLY" displayed on the security fence around the proposed Narngulu DG compound.</p>	✓	Site Inspection, Add. A (Photos 1, 2, 3, 4, 5, 9, 10 & 14), Att. 2 (DGRA) & CBH SHARE System

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Aspect	Cl.	Required	Proposed	Status (✓ or x)	Ref.
Control of entry	AS/NZS 5026 Cl. 9.2.1 AS 4452 Cl. 9.2.2 AS 4332 Cl. 5.2.7	<p>Visitors, contractors and other personnel to be accompanied by a member of occupier's staff, where possible, or given a written list of hazards present and appropriate precautions.</p> <p>Any restricted area should be locked when it is unattended.</p> <p>No person under the influence of alcohol or intoxicating drugs permitted in a restricted area.</p>	<p>All CBH personnel are required to complete an online HSE Induction via SuccessFactors prior to visiting any site.</p> <p>As per the requirements of the CBH 'HSE Contractor Management Procedure', all contractors are required to undertake a site-specific induction (recorded in SitePass) prior to working on site. Visitors to the site must sign-in at the site office and are required to be accompanied at all times by a CBH employee.</p> <p>Any persons (including CBH employees, contractors and visitors) required to enter the proposed Narngulu DG compound for the first time will be required to undergo a brief induction specific to the DG compound to advise of hazards / precautions and ER actions. This induction will be completed electronically in ROAM and records kept in SHARE.</p> <p>As stated under 'Security / control of access above', restricted areas (e.g. DG stores) will be locked when not in use.</p> <p>As per the 'Drug & Alcohol Procedure' CBH can undertake random drug and alcohol tests to check employees are fit for work.</p>	✓	Att. 2 (DGRA), CBH HSE Contractor Management Procedure (STORE-1473931053-243599), CBH Drug and Alcohol Procedure (STORE-1473931053-124) & CBH SHARE System

Table B.3 Emergency Response Planning & Manifests

Aspect	Cl.	Required	Proposed	Status (✓ or x)	Ref.
Planning for emergencies / Emergency Plan (EP)	DG Regs r.75	<p>If DGs are stored or handled on the site in quantities that exceed the manifest quantity in relation to those goods, the operator must ensure there is an EP for the site. The operator must have a copy of the current site EP onsite.</p> <p>The EP to comply with the requirements of AS 3745 and DEMIRS Guidance Note - DG Emergency Plans for small businesses (October 2017).</p>	<p>CBH will develop a new EP for the proposed Narngulu DG compound, which will include ER actions in the event of fires, toxic gas releases and spills, as well as evacuation requirements. This EP will comply with all requirements of AS 3745 (and other relevant standards, e.g. AS/NZS 5026, AS 4452, AS 4332 and AIGA 051/20) (refer to CBH SHARE Action ACT-37372). Refer also to Table F.9 in Addendum F.</p> <p>The new EP will be available in hard copy at relevant locations and will also be accessible electronically via SharePoint.</p> <p>The EP will be reviewed and, if required, updated whenever a significant change occurs on site or at least annually.</p>	✓	Add. F, Att. 2 (DGRA) & CBH SHARE System
	AS/NZS 5026 Cl. 10.2.2, AS 4332 Cl. 6.2.2 AS 4452 Cl. 10.2	<p>EP developed in conjunction with relevant workers, emergency services and relevant regulatory authorities, consider potential for fire, explosion or release of DGs; include likely onsite / offsite consequences, be appropriate to the size and complexity of installation, and be regularly reviewed and updated.</p>			

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Aspect	Cl.	Required	Proposed	Status (✓ or ✗)	Ref.
Requirement for a FES ERG	DG Regs r. 76B	If DGS are stored or handled at a dangerous goods site in quantities that are 10 times greater than the manifest quantities, the operator of the site must prepare an emergency response guide (ERG) (in a Department of Fire and Emergency Services (DFES) template), which is completed by the operator to give the emergency services responder vital information in a concise format.	N/A – As per Section 3.1 in the main report above, the maximum quantity of Division 2.3 gases (i.e. VaporPhos and EcoFume) and Division 4.3 solids (i.e. AIP blankets) that could be stored within the proposed Narngulu DG compound is 2.4 kL and 2 t, respectively. These maximum quantities are lower than 10 times the manifest quantities (i.e. 0.5 kL and 0.5 t, respectively) specified under Schedule 1 of the DG Regs for phosphine gas (PH ₃) and AIP and, hence, a FES-ERG is not required for the Narngulu site. However, based on consultation with DFES, all CBH sites with DG compounds are required to prepare an Operational Pre-Plan (OPP). CBH will prepare an OPP for the Narngulu site prior to operation of the proposed DG compound (<i>refer to SHARE Action ACT-37372</i>).	N/A	Att. 1 (Site DG Manifest), Att. 2 (DGRA) & CBH SHARE System
Manifest and DG Site Plan	DG Regs r.78 AS/NZS 5026 Cl. 10.3 AS 4452 Cl. 10.3 AS 4332 Cl. 6.3	A manifest and site plan to be provided and maintained in accordance with regulatory requirements (i.e. r. 78 and Schedule 3 of the DG Regs).	A Draft Site DG Manifest and has been developed for the proposed Narngulu DG compound, which is provided in Attachment 1 and has been developed in accordance with LGIRS requirements (i.e. the requirements of r. 78 and Schedule 3 of the DG Regs). A Draft Site Location Plan has been developed (<i>refer Addendum A</i>), however, prior to submission of a DG Licence Application to LGIRS, this will be amended to comply with the requirements of a DG Site plan under Schedule 3, Division 3 of the DG Regs. A hard copy of the DG Manifest and Site Plan will be provided in the EICs at the Narngulu site entrance and DG compound.	✓	Add. A (Photos 2 & 18 & DWG. 2025-307-0572 / 0573), Att. 1 (Site DG Manifest) & Att. 2 (DGRA)
Management of leaks and spills	AS/NZS 5026 Cl. 10.5 / 10.6 AS 4452 Cl. 10.5	Prevent leaks and spills from occurring and clean up action to be initiated immediately. Adequate spill clean-up equipment and materials (including chemicals for neutralizing spills, where applicable, and absorbent materials) to be provided in DG storage and handling areas. EP to be implemented and consideration given to notifying emergency services.	Management of leaks (including gas leaks) and spills will be addressed in the new EP to be developed for the proposed Narngulu DG compound (<i>refer above and SHARE Action ACT-37372</i>). The ER actions in the new EP will be based on the relevant Safety Data Sheet (SDS), CBH Spill Response Work Instruction (WI) (STORE-1473931053-244028), as well as relevant codes, standards (e.g. AS) and guidelines. A spill from new AIP blankets is not considered credible, as they will be stored in sealed packages within a freight container (Store PS2) and will not be opened within the store (<i>refer to Section 13.10.1 of the 'DG and Chemical Management Plan'</i>).	✓	Add. A (Photos 3, 4, 6, 7, 10, 16, 17, 19 & 20), Add. F, Att. 2 (DGRA), CBH Spill Response WI, CBH SHARE System & DG and Chemical Management Plan
	AS 4332 Cl. 6.5 & Appendix D	Management of leaks to be as per the general principles described in Appendix D of AS 4332. Spills from spent AIP blankets are possible but highly unlikely, as they will be kept in raised steel cages within a closed shed / smartlocker (Store PS3). A shovel, broom and dustpan / brush will be provided inside the proposed DG compound.			

Table B.4 Placarding and Marking – Entrance to the Premise

Aspect	Cl.	Required	Proposed	Status (✓ or ✗)	Ref.	
Signs and notices	DG Regs r.68	Outer warning placards – A HAZCHEM sign is required for the site at every entrance to the site or any alternative place approved in writing by the relevant authorities.	HAZCHEM signs complying with the requirements of Schedule 4 of the WA DG Regs will be provided at the Narngulu site entrance(s) (<i>refer to SHARE Action ACT-37368</i>).	✓	Att. 2 (DGRA) & CBH SHARE System	
	DG Regs r. 70	r. 70 (2)(c) requires appropriate package store DG placards, complying with Schedule 4 of the DG Regs, to be provided at the entrance to a building or external store where DGs are stored in quantities greater than 'placarding levels under Schedule 1 of the DG Regs.	As per r. 70(2)(c), there is no requirement to display DG placards at the entrance(s) to a premise storing and handling DGs. DFES has advised in the past that DG placards outside, or at the entrance to, a site storing and handling DGs can cause confusion and lead to inappropriate emergency response. Details of placarding requirements for the AIP Freight Container (Store PS2), AIP Waste Storage Area (Store PS3) and Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound are provided in Table C.6 and C.12 of Addendum C , Table D.6 and D.12 of Addendum D and Table F.8 of Addendum F .	✓	Tables C.6, C.12, D.6, D.12 & F.8 & Att. 2 (DGRA)	
	AS/NZS 5026 Cl. 10.4.1 AS 4452 Cl. 10.4 AS 4332 Cl. 6.4 9.5.1	Every installation to be placarded in accordance with regulatory requirements.				
	AS/NZS 5026 Cl. 10.4.2 (b) to (d) AS 4332 Cl. 6.4 (b)	The following additional signs to be displayed (at the site entrance) as appropriate: <ul style="list-style-type: none"> A warning sign to restrict entry, e.g. "WARNING: RESTRICTED ENTRY, AUTHORISED PERSONNEL ONLY". A sign listing emergency contacts and phone numbers relevant to the installation and name, address and phone number of the occupier. 	Appropriate warning signage is provided at the entrance to the Narngulu site, including "WARNING – RESTRICTED AREA / AUTHORISED ENTRY ONLY", "ALL VISITORS MUST REPORT TO, AND OR, CONTACT THE SITE MANAGER OR WEIGHBRIDGE OPERATOR". This sign at entrance to the Narngulu site also identifies the occupier as CBH and provides a contact phone number.	✓	Add. A (Photo 1), Att. 2 (DGRA) & CBH SHARE System	
Safety information for emergency services	AS/NZS 5026 Cl. 10.4.2 (e)	At entrance to the premises, a layout diagram showing locations of fixed firefighting equipment, drainage systems and emergency stop switches.	There is no layout drawing displayed at the Narngulu site, however, the EICs to be provided at the entrance to the Narngulu site and proposed DG compound will contain appropriate safety information for emergency services, including the Site DG Manifest (and associated Site Plan). A Traffic Flow Map (including location of muster points, fire extinguishers and first-aid kits) will also be provided in the EICs at site entrance and proposed DG compound.	✓	Site Inspection, Add. A (Photos 2 & 18 & Narngulu Traffic Flow Map), Att. 1 (Site DG Manifest) & Att. 2 (DGRA)	
	AS 4452 Cl. 9.2.6	At main entrance and another entrance (if more than 1 site access point) safety information to be provided for emergency services showing location of EP, manifest, clean-up equipment and location of essential services and controls.				

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Table B.5 Dangerous Goods Risk Assessment

Aspect	Cl.	Required	Proposed	Status (✓ or ✗)	Ref.
Risk Assessment	DG Regs r.48	The operator must ensure that a risk assessment is made of the DGs stored or handled at the site and that a record is kept of the assessment.	<p>A site-wide DG risk assessment (DGRA) has been prepared for the proposed Narngulu DG compound and a copy of this is provided as Attachment 2.</p> <p>A Flammable Solids Hazard Identification (HAZID) / Risk Assessment (RA), complying with the requirements of Section 2 of AS/NZS 5026: 2012, has also been undertaken for the proposed Class 4 DG Stores PS2 and PS3 (<i>refer to Addendum E</i>).</p>	✓	Att. 2 (DGRA) & Add. E

Table B.6 Areas of Non-Conformance and Action Plan

No.	Description	Action Plan	Actionee	Due date	Date Completed	Actionee Comments
-	-	-	-	-	-	-

Refer to SHARE Actions ACT-37368 and ACT-37372.



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Dangerous Goods Risk Assessment

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ADDENDUM C

ALUMINIUM PHOSPHIDE (ALP) FREIGHT CONTAINER (STORE PS2)



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Table C.1 Storage and Accreditation Details


Storage No:	Proposed Narngulu DG Compound – AIP Freight Container (Store PS2)									
Material stored										
UN No.	1397									
shipping name	ALUMINIUM PHOSPHIDE									
common name	Aluminum phosphide (AIP)									
Division (SR) / Packaging Group (PG)	Class 4.3 (6.1) / PG I									
Storage quantity	<p>Maximum storage quantity – 2,000 kg*</p> <p><i>*Maximum storage quantity (for DG licensing) will include spent AIP blankets stored in the Waste Storage Area (Store PS3) – refer Addendum D.</i></p>									
Other details	<p>This will be a package store of Division 4.3 (SR 6.1) DGs in sealed steel containers / drums (of capacity 20.4 kg, i.e. 12 AIP half blankets (1.7 kg) per drum), within a dedicated freight container. As above, the maximum storage quantity on the new Narngulu DG Licence will include spent AIP blankets stored in the Waste Storage Area (Store PS3). The proposed AIP Freight Container (Store PS2) and proposed AIP Waste Storage Area (Store PS3) will be enclosed within a secured, fenced DG compound.</p> <p>As the quantity of Division 4.3 PG I (Category B) DGs stored will be greater than 5 kg per 100 m² floor area and greater than 10 kg for Division 6.1 PG I DGs on 'all other premises' (minor storage quantity threshold), the proposed storage is considered a bulk package store under AS/NZS 5026: 2012 and AS 4452-2025.</p> <p>NOTE: This store will be relocated from West End to the proposed new Narngulu location and, hence, the design / construction is identical.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Auditor / Assessor</td> <td>Paul Hathway</td> </tr> <tr> <td>Accreditation No.</td> <td>6IM-106</td> </tr> <tr> <td>Date Assessed</td> <td>08 May 2026</td> </tr> <tr> <td>Method of Assessment</td> <td>AS/NZS 5026-2012: The storage and handling of Class 4 dangerous goods was utilised for this assessment as per the requirements of the DG Regs. Additional elements of AS 4452-2025 were also incorporated where applicable, as AIP has a subsidiary risk (SR) of Division 6.1.</td> </tr> </table>	Auditor / Assessor	Paul Hathway	Accreditation No.	6IM-106	Date Assessed	08 May 2026	Method of Assessment	AS/NZS 5026-2012: The storage and handling of Class 4 dangerous goods was utilised for this assessment as per the requirements of the DG Regs. Additional elements of AS 4452-2025 were also incorporated where applicable, as AIP has a subsidiary risk (SR) of Division 6.1.
Auditor / Assessor	Paul Hathway									
Accreditation No.	6IM-106									
Date Assessed	08 May 2026									
Method of Assessment	AS/NZS 5026-2012: The storage and handling of Class 4 dangerous goods was utilised for this assessment as per the requirements of the DG Regs. Additional elements of AS 4452-2025 were also incorporated where applicable, as AIP has a subsidiary risk (SR) of Division 6.1.									

Table C.2 Scope and General

Aspect	Cl.	Specification	Proposed	Status (✓ or ✕)	Ref.
Scope	AS/NZS 5026 Cl. 1.1	Standard applies to flammable solids, substances liable to spontaneous combustion, and substances that in contact with water evolve flammable gases that in Australia are classified under the ADG Code as Division 4.1, 4.2 or 4.3, respectively.	AIP is classified as a Division 4.3 (Category B) DG with a Division 6.1 SR under the ADG Code and, therefore, AS/NZS 5026 and AS 4452 standards apply.	✓	Att. 1 (Site DG Manifest) & Att. 3 (SDS)
	AS 4452 Cl. 1.1	Standard applies to DGs that are classified as Division 6.1 in the ADG Code or assigned a Division 6.1 subsidiary risk, except where of Class 2 or where more stringent requirements apply.			

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Table C.3 Hazard Identification and Risk Assessment

Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Hazard identification	2.4	Undertake a Hazard Identification (HAZID) assessment or have copies of HAZID reports in place.	A site-wide DGRA has been undertaken for the proposed Narngulu DG compound, as required under r. 48 of the DG Regs (<i>refer to Attachment 2</i>). A Flammable Solids HAZID / Risk Assessment (RA), complying with the requirements of Section 2 of AS/NZS 5026: 2012, has also been undertaken for the Class 4 DG Stores (PS2 and PS3) within the proposed Narngulu DG compound (<i>refer to Addendum E</i>).	✓	Add. E (Flammable Solids HAZID / RA) & Att. 2 (DGRA)
Risk assessment	2.5	Undertake a risk assessment (quantitative or qualitative) for the identified hazards.			
Risk review	2.6	Review risk assessment if any major changes have been made, incidents occurring and if 5 years have passed.			

Table C.4 Minor Storage

Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Scope of section & minor storage classification	AS/NZS 5026 Cl. 3.2 & Table 3.1	Specifies criteria for 'minor storage' of Class 4 DGs. For Class 4.3 PG I (Category B) substances stored in a laboratory, factory or workshop to be classified as minor storage, the maximum storage quantity in any 100 m ² floor area is 5 kg.	N/A – The AIP Freight Container (Store PS2) within the proposed Narngulu DG compound would not be considered a minor store, as the total maximum quantity of Division 4.3 PG 1 (Category B) (SR 6.1) substances that could be stored (i.e. up to 2,000 kg) exceeds 5 kg (for Division 4.3) and 10 kg (Division 6.1 SR).	N/A	Att. 1 (Site DG Manifest)
	AS 4452 Cl. 3.2	Specifies criteria for 'minor storage' classification for toxic substances and requirements of such storage. For toxic substances of PG I in "all other premises", maximum storage quantity for a minor store is 10 kg.			
Precautions applying to minor storage	AS/NZS 5026 Cl.3.3	Clause 3.3 lists requirements for Minor stores of Class 4 DGs.			
	AS 4452 Cl. 3.3 & 3.4	Details precautions / requirements applicable to minor storage of toxic substances.			

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Table C.5 Transit Storage

Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Definition & scope of section	AS/NZS 5026 1.4.70 & 4.11.1	Unopened packages / IBCs stored for not less than 12 hours and not more than 5 consecutive days.	N/A - The AIP Freight Container (Store PS2) within the proposed Narngulu DG compound would not be considered a transit store, as the storage time for packages of AIP would be greater than 5 days.	N/A	Att. 1 (Site DG Manifest)
	AS 4452 Cl. 1.4.46	Unopened packages / IBCs stored for a time duration of not less than 12 hours and not more than 5 consecutive days.			
Delineation of transit storage areas	AS/NZS 5026 4.11.2	Transit stores of Class 4 DGs deemed separate areas if separated from each other and other storage areas, buildings or amenities by at least 15 m.			
	AS 4452 Cl. 4.2	Transit storage of toxic substances deemed to be separate storage areas if at least 15 m apart.			
Requirements of transit storage	AS/NZS 5026 4.11.3	Clause lists requirements for transit stores of Class 4 DGs.			
	AS 4452 Cl. 4.3	Details requirements applicable to transit storage of toxic substances.			

Table C.6 General Requirements (Class 4)

Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Scope of section	4.1	Section provides general requirements and recommendations for Class 4 DGs stored in quantities greater than minor storage.	As per Table C.4 above, Store PS2 within the proposed Narngulu DG compound will not be considered a minor store and, therefore, Section 4 of AS/NZS 5026 is applicable.	✓	Att. 1 (Site DG Manifest)
Design safety and suitability	4.2.1	Risk assessment to be undertaken considering factors listed in Clause 4.2.1.	As per Table C.3 above, a Flammable Solids HAZID / RA and a site-wide DGRA have been undertaken for the proposed Narngulu DG compound (<i>refer to Addendum E and Attachment 2, respectively</i>).	✓	Add. E & Att. 2 (DGRA)
Operational requirements	4.2.2	(a) High housekeeping standards.	Based on the condition of the store (in its current West End location) and stacking arrangement of the AIP packages, good housekeeping standards will be kept in Store PS2.	✓	Add. A (Photos 6, 7 & 10)
		(b) Protection from weather, heat, temperature changes.	AIP drums at the proposed Narngulu DG compound will be stored in a modified freight container (Store PS2), which shades them from the sun and also provides adequate ventilation, i.e. vents (high / low) in the side walls. Dedicated temperature control will not be provided, however there have been no previous incidents at CBH of AIP being exposed to high temperatures.	✓	Add. A (Photos 3, 6, 7, 8, 10 & 18), Add. E, Att. 2 (DGRA) & Fintran email (dated 25/03/21)

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Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Operational requirements (cont'd)	4.2.2	(c) Stock control to avoid prolonged storage.	A batch number and manufacture date are clearly marked on the AIP drums. Orders of new AIP blankets (and removal of spent blankets) is managed by the Grain Protection (GP) Administration Officer. Work practices and training at the CBH sites ensure rotation of stock (e.g. DG packages) and this requirement is formalised in Section 13.10.1 of the 'DG and Chemical Management Plan'.	✓	Add. A (Photos 6 & 7), Att. 2 (DGRA) & DG and Chemical Management Plan
		(d) Metallic powders not stored in areas where water ingress is possible.	N/A – Based on the SDS, although AIP is not considered to be a metallic powder, it reacts with water to generate toxic and flammable gas (PH ₃). However, as the AIP blankets will be stored in gas-tight foil pouches inside closed steel drums on a raised steel grating floor within a modified, locked freight container, contact with water during storage is not considered possible.	N/A	Add. A (Photos 3, 6, 7, 10 & 18), Add. E, Att. 2 (DGRA) & Att. 3 (SDS)
		(e) Routine inspection and testing regime for DGs that require an inhibitor or stabiliser.	N/A – The AIP (blankets) that will be stored in the AIP Freight Container (Store PS2) at the proposed Narngulu DG compound does not require the addition of an inhibitor or stabiliser.	N/A	
Emergency provisions	4.2.3	Facility designed to facilitate management of emergency.	The Narngulu site and proposed DG stores will be designed to facilitate emergency management, and ER requirements will be provided in the new Narngulu EP to be developed (<i>refer to SHARE Action ACT-37372</i>).	✓	Add. B, Att. 2 (DGRA) & CBH SHARE System
Hazardous areas	4.2.4	Hazardous area (HA) to not extend beyond boundary.	The Division 4.3 DGs (i.e. AIP blankets) within Store PS2 at the proposed Narngulu DG compound will be stored in sealed packages that will remain closed at all times (<i>refer to Section 13.10.1 of the CBH 'DG and Chemical Management Plan'</i>) and the store will be provided with adequate natural ventilation. Hence, it is considered that a HA cannot exist in the store as no potential release source for flammable gases was identified for sealed packages.	✓	Add. A (Photos 3, 6, 7, 8 & 10), Add. E, Att. 2 (DGRA) & DG and Chemical Management Plan
Separation distances	4.2.5	Separation distances to property boundary, protected places, ignition sources, combustible materials and other DGs to be as per Table 5.1.	For details of separation distances for the AIP Freight Container (Store PS2) at the proposed Narngulu DG compound, refer under Cl. 5.4.2 in Table C.7 below.	✓	Table C.7



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Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Electrical installations and equipment	4.3	Equipment and installation in accordance with AS/NZS 3000 for HAs classified under AS 60079.	N/A - As discussed under Cl. 4.2.4 above, there will be no HA associated with Store PS2 at the proposed Narngulu DG compound as there will be no handling of open packages in the store (<i>refer to Section 13.10.1 of the CBH 'DG and Chemical Management Plan'</i>) and adequate natural ventilation will be provided. Regardless, there will be no fixed electrics within the store and no combustion engines or electric forklifts will be used inside the store.	N/A	Add. A (Photos 6, 7, 8 & 10), Add. E, Att. 2 (DGRA) & DG and Chemical Management Plan
Internal combustion engines	4.4	Internal combustion engines used in HAs must be in accordance with AS 2359.			
Lighting	4.5(a)	Sufficient light for safe work to be conducted.	Store PS2 at the proposed Narngulu DG compound will not be provided with any fixed lighting (inside), as the store (and compound) will not normally be accessed outside daylight hours. However, the compound will be provided with some motion-activated security lighting and a light within the Vehicle Parking Shelter. There are some floodlights to the north-west of the proposed Narngulu DG compound near the weighbridges, as well as some floodlights around the site office / amenities	✓	Add. A (Photos 6, 7, 8, 9, 10 & 30) & Att. 2 (DGRA)
	4.5(b)	Sufficient lighting on internal site roads.			
Restricted usage	4.6	Only Class 4 DGs being stored and handled at store, unless compatible DGs.	As per Table C.1 above, only AIP (Class 4 DG) will be stored within Store PS2 at the proposed Narngulu DG compound. Class 2 gas cylinders will also be stored within the compound, however, based on the SDSs, these are not incompatible with AIP.	✓	Add. A (Photos 6, 7, 10 & 14), Att. 1 (Site DG Manifest) & Att. 3 (SDS)
Firewalls and vapour barriers	4.7	Any firewall to be of fire resistance level (FRL) 240/240/240 rating. Vapour barriers to be impervious and non-combustible.	N/A – No firewalls or vapour barriers will be installed within the AIP Freight Container (Store PS2) at the proposed Narngulu DG compound.	N/A	Add. A (Photos 6, 7 & 8)
Explosion venting	4.8	Explosion vents to be installed if DGs are stored in an enclosed area and are capable of producing flammable gases, vapours or combustible dusts. Explosion vent to: (a) provide relief when internal pressure exceeds 1 kPag pressure; (b) be a panel on a wall or free opening; (c) no installed in a store enclosed within another building; and each storage area within a building to be separately vented.	N/A – An internet search regarding explosion venting of freight containers in Australia only stressed the requirement to provide adequate ventilation to prevent build-up of flammable gases and was not prescriptive on design details for explosion venting. Store PS2 at the proposed Narngulu DG compound will be a modified freight container provided with vents in opposite side walls (upper / lower). Also, as the AIP will be stored in sealed containers that will not be opened in the store (<i>refer to Section 13.10.1 of the 'DG and Chemical Management Plan'</i>), generation of flammable gases within the store is not considered credible. Therefore, no explosion venting is considered necessary.	N/A	Add. A (Photos 3, 6, 7, 8, 10 & 18) & DG and Chemical Management Plan

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Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Temperature controls	4.9	<p>Roof insulation and vents to be provided (to prevent build-up of dangerous vapours), and electrical temperature regulating equipment to be outside and at least 3 m away from store opening.</p> <p>Maximum safe storage temperature noted on outside of store.</p> <p>Alternative cooling devices available.</p> <p>Temperature indication with high temperature alarm.</p> <p>Keyed switches or switch board to prevent electricity supply from being turned off.</p>	<p>Store PS2 within the proposed Narngulu DG compound will be provided with adequate ventilation (i.e. vents in opposite (upper and lower) side walls). The SDS for AIP blankets recommends storage in a cool, dry and well-ventilated area away from direct sunlight, however Section 10 of the SDS states the storage should preferably be <30°C. The supplier (Fintran) stated that temperature control is not required for their product and that current storage conditions at CBH's DG compounds are suitable, and, for transparency / traceability reasons, Fintran has provided this advice in writing (<i>refer to close-out of SHARE Action ACT-18536</i>).</p>	✓	<p>Add. A (Photos 7, 8, 10 & 18), Add. E, Att. 2 (DGRA), Att. 3 (SDS), Fintran email (dated 25/03/21) & CBH SHARE System</p>
Signs and notices	4.10.2	(a) Signs at the entrance to the store: "DANGER – NO SMOKING, NO NAKED FLAMES".	<p>Although not provided on the outside of the AIP Freight Container (Store PS2), there will be warning signs on the fence of the proposed Narngulu DG compound stating "DANGER - NO SMOKING, NO IGNITION SOURCES".</p>	✓	<p>Add. A (Photos 7, 11, 14, & 21) & Att. 2 (DGRA)</p>
		<p>(b) Class label and SR label (if any). Placards in accordance with the regulations (i.e. DG Regs, r. 70 & Schedule 4).</p> <p style="text-align: center;">Required placard</p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>Appropriate package store DG placards for AIP (i.e. Division 4.3 (Dangerous When Wet) and Division 6.1 (Toxic) DG diamonds) will be displayed on the outside of the AIP Freight Container (Store PS2), as per the requirements of r. 70 and Schedule 4 (Cl. 5) of the DG Regs.</p> <p>To aid in identification of the product stored, signs stating "ALUMINIUM PHOSPHIDE" will also be displayed on the outside of Store PS2.</p> <p>DG diamonds will also displayed on the main entrance gate to the DG compound.</p>	✓	<p>Add. A (Photos 2, 3, 10, 12 & 18) & Att. 2 (DGRA)</p>	
Control of access	4.10.1	<p>Installation to be properly secured against unauthorised access.</p>	<p>As per Addendum B, there is no security fencing around the Narngulu site, only ring lock fence. The proposed DG compound, in which Store PS2 will be located, will be a secure fenced area with locked gates (and restricted key access). Store PS2 will also be locked when not in use.</p>	✓	<p>Site Inspection, Add. A (Photos 2, 3, 10 & 18), Add. B & Att. 2 (DGRA)</p>
Ignition sources	4.12	<p>Vehicles to be suitable for the HA given in AS/NZS 60079 or a hot work permit must be issued.</p>	<p>N/A – As detailed under Cl. 4.2.4 and 4.8 above, due to the nature of the AIP storage, generation of a HA within the proposed AIP Freight Container (Store PS2) is not considered credible. Also, vehicles will not be required to enter Store PS2.</p>	N/A	<p>Add. A (Photos 3, 6, 7, 8 & 10) & Att. 2 (DGRA)</p>

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Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Storage in tanks	4.13	Section details requirements for storage and handling of Class 4 DGs in tanks.	N/A – The AIP blankets at the proposed Narngulu DG compound will be stored in sealed packages (i.e. gas-tight foil pouches inside steel drums) within a freight container (Store PS2), and not within tanks.	N/A	Add. A (Photos 3, 6, 7 & 10)
Bunds and compounds for tanks	4.14	Section details requirements for bunds and compounds for tanks containing Class 4 DGs.			

Table C.7 Package Storage and Handling Areas

Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Scope of section	AS/NZS 5026 Cl. 5.1	Section sets out general requirements for storage and handling of Class 4 DGs in quantities greater than those classified as minor storage in Section 3.	AIP blankets at the proposed Narngulu DG compound will be stored and handled in small, sealed packages (i.e. gas-tight foil pouches inside steel drums) within a modified freight container (Store PS2), in quantities greater than those classified as minor storage. Therefore, Section 5 of AS/NZS 5026 and Section 6 of AS 4452 are applicable.	✓	Add. A (Photos 3, 6, 7 & 10), Att. 1 (Site DG Manifest) & Att. 2 (DGRA)
	AS 4452 Cl. 6.1	Section applies to storage and handling of toxic substances in packages and intermediate bulk containers (IBCs) with a capacity of less than 1.5 m ³ .			
Types of stores	AS/NZS 5026 Cl. 5.2 & AS 4452 Cl. 6.2	A package store may be: <ul style="list-style-type: none"> • open air storage, if appropriate; • outdoor area with security fence; • freestanding, roofed building; • roofed area or room external to another building but attached to an external wall of that building; • room, enclosure or area within a building, one wall which is part of the external wall of the building; or • fire-resistant or indoor storage cabinet. 	Class 4 DGs (i.e. AIP blankets) at the proposed Narngulu DG compound will be stored in packages (i.e. gas-tight foil pouches inside steel drums) within a modified freight container (Store PS2), which will be located inside a secured / fenced DG compound.	✓	Add. A (Photos 2, 3, 6, 7, 10 & 18)
Location of store - General	AS 4452 Cl. 6.3.1	Store to be located above the highest recorded flood level, away from accumulations of flammable / combustible materials, and not within close proximity to watercourses, open stormwater channels, houses, schools, hospitals and similar congested areas.	The concrete slab for the proposed Narngulu DG compound will be raised slightly to prevent flooding, and a concrete apron provided. The concrete slab of the DG compound will also slope to an HDPE-lined water detention basin to the south-east. Store PS2 will be located away from accumulations of flammable / combustible materials and will not be in close proximity to any watercourses, open stormwater channels, public places / offsite protected works.	✓	Add. A (Photos 2, 3, 7, 10 & 18 & DWG. 2025-307-0575 & 307-ENG-CI-DAL-0030)
Separation and segregation	AS/NZS 5026 Cl. 5.4.1	Where the DG has a SRs, reference to be made to relevant AS for those risks and greatest separation and segregation distances applied.	AIP is classified as a Division 4.3 DG with a Division 6.1 SR and, hence, the separation distances in AS/NZS 5026 and AS 4452 have been identified below to ensure compliance with the more stringent requirements.	✓	Att. 1 (Site DG Manifest) & Att. 3 (SDS)

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Separation and segregation <i>(cont'd)</i>	AS/NZS 5026 Cl. 5.4.2 & Table 5.1	Minimum separation distance of 10 m to the site boundary for Category B DGs in quantities between 250 kg and 2,000 kg. However, the 15 m separation distance in Cl. 8.5.2 takes precedence (<i>refer Table 5.1, Note 5</i>).	The distance from the AIP Freight Container (Store PS2) at the proposed Narngulu DG compound to the nearest site boundary (west) will be 100 m, which is greater than the 15 m separation distance required by AS/NZS 5026 and 5 m required by AS 4452.	✓	Add. A (DWG. 2025-307-0572 / 0573 & 2025-307-0575)
	AS 4452 Cl. 2.4.1, Cl. 2.4.2, Cl. 6.3.2 & Table 1 (A to C)	Minimum separation distance of 4 m to the premise boundary for package stores of maximum storage quantity of 1 t to 10 t of PG I toxic substances where packages remain closed. However, as per Cl. 1.9.1, a minimum separation distance of 5 m applies for PG I substances.			
	AS/NZS 5026 Cl. 5.4.2 & Table 5.1	Minimum separation distance of 10 m to protected places for Category B DGs in quantities between 250 kg and 2,000 kg. However, the 15 m separation distance in Cl. 8.5.2 takes precedence (<i>refer Table 5.1, Note 5</i>).	The distance from the AIP Freight Container (Store PS2) at the proposed Narngulu DG compound to the nearest on-site protected place (future Pest Control Shed) will be 25 m, which is significantly greater than the 15 m separation distance required by AS/NZS 5026 and 8 m required by AS 4452. It should be noted that, as per email discussions with DEMIRS (now LGIRS) in April 2020, it was considered that the proposed Gas Cylinder Store (Store PS1) will be part of the same onsite DG storage compound and, therefore, not a 'protected place' under the definitions provided under Cl. 1.4.37 and 1.4.47 of AS/NZS 5026. However, separation of Store PS1 and the AIP storages (Stores PS2 and PS3) is addressed under Cl. 4.4.2 in Table F.6 of Addendum F below.	✓	Add. A (DWG. 2025-307-0573 & 2025-307-0575), Add. E, Att. 2 (DGRA) & DEMIRS / CBH emails dated 17/04/20 (STORE-1383563609-244314)
	AS 4452 Cl. 2.4.1, Cl. 2.4.2, Cl. 6.3.2 & Table 1 (A to C)	Minimum separation distance of 8 m to protected places for package stores of maximum storage quantity of 1 t to 10 t of PG I toxic substances where packages remain closed.			
	AS 4452 Cl. 2.4.3.2	Foodstuffs, containers for foodstuffs, products for human or animal consumption / application and medical / veterinary materials not to be kept in the same room / store as PG I toxic substances.	There will be no foodstuffs, containers for foodstuffs, products for human or animal consumption / application and medical / veterinary materials stored within the AIP Freight Container (Store PS2) at the proposed Narngulu DG compound.	✓	Add. A (Photos 3, 6, 7, 10 & 18 & DWG. 2025-307-0573 & 2025-307-0575)
	AS/NZS 5026 Cl. 5.4.2.4	Separation from foodstuffs, foodstuff containers, products for human or animal consumption / application and medical / veterinary materials by at least 5 m. However, as per Note 5 of Table 5.1, the distance in Cl. 8.5.2 (i.e. 15 m) takes precedence.	There will be no foodstuffs, containers for foodstuffs, products for human or animal consumption / application and medical / veterinary materials inside or within 15 m of Store PS2 and the proposed DG compound at CBH's Narngulu site.	✓	
	AS/NZS 5026 Cl. 5.4.2.5	Class 4 DGs contained within a fire-resistant cabinet to be separated from any potential ignition sources by at least 3 m.	N/A - AIP blankets at the proposed Narngulu DG compound will be stored in sealed packages within a modified freight container (Store PS2) and not in a fire-resistant cabinet.	N/A	

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Separation and segregation (cont'd)	AS/NZS 5026 Cl. 5.4.2.5	(b) For Class 4 DGs capable of generating flammable gas, the requirements of AS/NZS 60079 series to apply.	As discussed under Cl. 4.2.4 in Table C.6 above, although AIP is capable of generating toxic and flammable gas (e.g. PH ₃) in contact with moisture / water, Store PS2 will be provided with adequate natural ventilation and the Division 4.3 DG will be stored in sealed packages that will remain closed at all times (<i>refer to Section 13.10.1 of the 'DG and Chemical Management Plan'</i>), hence, it is considered that there is no potential for a HA to exist in the store.	✓	Add. A (Photos 3, 6, 7, 8, 10 & 18) & 2025-307-0573 & 2025-307-0575), Att. 2 (DGRA) & DG and Chemical Management Plan
		(c) All other Class 4 DG stores to be separated from any potential ignition sources by at least 8 m.	There will be no fixed ignition sources located inside, or within 8 m of, the proposed AIP Freight Container.	✓	
	AS/NZS 5026 Cl. 5.4.3	Segregation of Class 4 DGs from incompatible substances or substances with which they may react dangerously by: (a) at least 5 m where packages are kept closed; (b) at least 8 m where containers are opened; and (c) kept in separate compounds that do not share a common drainage system.	As above, Store PS2 at the proposed Narngulu DG compound will only contain sealed packages of AIP blankets. Although other DGs will be stored within the same DG compound, these will be spent AIP blankets (Store PS3) and Class 2 (predominantly Division 2.3) gas cylinders (Store PS1). Store PS1 will be located >5 m (~15 m) away from Store PS2 and, based on the SDSs, the gases that will be stored are not incompatible with / will not react dangerously with AIP. However, as per Table C.13 below, the firefighting requirements for the AIP stores (PS2 / PS3) and Store PS1 are very different and incompatible. Stores PS1, PS2 and PS3 within the proposed Narngulu DG compound will be appropriately separated to allow good housekeeping.	✓	Add. A (Photos 3, 4, 6, 7, 10, 14, 16, 18, 19, 20, 21, 22 & 23 & DWG. 2025-307-0573 & 2025-307-0575), Att. 2 (DGRA) & Att. 3 (SDS)
	AS 4452 Cl. 1.4.18, Cl. 2.4.3.1 & Cl. 6.3.2.2	Incompatible substances to be kept in separate compounds; or segregated by at least 5 m. Substances that can react dangerously to be segregated by at least 5 m and not kept in the same compound or share a common drainage system. Even if not incompatible and will not react dangerously, DG stores to be separate for housekeeping reasons.			
AS 4452 Cl. 2.4.3.4	Minor quantities of Division 6.1 / SR 3 and Class 3 / SR 6.1 may be stored with other Class 3 DGs, as long as the store also meets the relevant requirements of AS 1940.	N/A – The AIP Freight Container (Store PS2) within the proposed Narngulu DG compound will only contain AIP (Division 4.3, SR 6.1) and no DGs of Class 3 or SR 3.	N/A	Add. A (Photos 6 & 7) & Att. 1 (Site DG Manifest)	
Construction of / General requirements for, package stores	AS/NZS 5026 Cl. 5.5.1 & AS 4452 Cl. 6.4.1	(a) Stores to be located on ground floor with immediate access for emergency personnel.	All DG stores within the proposed Narngulu DG compound will be located at ground level (although the ground / concrete slab will be raised slightly to prevent flooding and a concrete apron provided) and there will be immediate / easy access for emergency personnel (once the compound gate is unlocked).	✓	Site Inspection & Add. A (Photos 2, 3, 7, 10 & 18 & DWG. 2025-307-0575)
		(b) At least two means of access for stores with a floor area greater than 25 m ² .	N/A – Store PS2 within the proposed Narngulu DG compound will be a 10 ft freight container with 1 means of access (front), however, it will have a floor area of only 6.67 m ² (based on standard internal dimensions 2.84 m x 2.35 m).	N/A	

PROPOSED NARNGULU DG COMPOUND

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Construction of / General requirements for, package stores (cont'd)	AS/NZS 5026 Cl. 5.5.1 & AS 4452 Cl. 6.4.1	(c) Stores to be designed, constructed and operated to allow for effective housekeeping.	The size / dimensions and layout of the AIP Freight Container (Store PS2) within the proposed Narngulu DG compound will allow for effective housekeeping.	✓	Add. A (Photos 3, 7, 10 & 18 & DWG. 2025-307-0575)
		(d) All materials of construction of the store to be non-combustible and resistant to attack by materials stored.	Store PS2 will be a steel freight container, with a raised floor constructed from steel grating. Steel is non-combustible and resistant to attack by the Division 4.3 DG stored (i.e. AIP blankets).	✓	Add. A (Photos 3, 6, 7, 10 & 18) & Att. 3 (SDS)
		(e) Adequate lighting provided as per Cl. 4.5 and Cl. 9.2.4 of AS/NZS 5026 and Cl. 9.2.4 of AS 4452.	As per Table C.6 above, Store PS2 at the proposed Narngulu DG compound will not be provided with any fixed lighting (inside), as the store (and compound) will not normally be accessed outside daylight hours. However, the DG compound will be provided with some motion-activated security lighting and a light within the Vehicle Parking Shelter.	✓	Add. A (Photos 2, 7, 8, 9 & 10) & Att. 2 (DGRA)
		(f) Adequate natural or mechanical ventilation to be provided for storage and handling areas. Mechanical ventilation to be as per AS 1668.2.	Adequate natural ventilation will be provided for the AIP Freight Container (Store PS2) via vents (upper and lower) in opposite side walls.	✓	Add. A (Photos 6, 7, 8, 10 & 18), Att. 2 (DGRA) & Att. 3 (SDS)
		(g) Store provided with a means of containing a spill. For toxic liquids of PG I, compound capacity to be 100% of the aggregate volume and for PG II / III liquids, 25% of aggregate volume but, in any case, at least the capacity of the largest container kept.	N/A – The Division 4.3 DG (AIP blankets) in the proposed Store PS2 is a solid and will be contained within closed packages located directly on a floor constructed from steel grating. As liquid DGs will not be stored, a dedicated compound / bund is not required.	N/A	
		(h) Areas used for decanting to have floors able to contain a spill or divert it to a compound within the premise boundary.	N/A – The AIP within the proposed Store PS2 is a solid Division 4.3 DG within sealed containers that will not be opened in the store, hence no decanting takes place.	N/A	
		(i) Packages to be stored so they cannot fall and cause spillage outside the compound.	Packages containing AIP blankets (i.e. drums) will be neatly stacked (maximum 3 high) directly on a floor constructed from steel grating, within the proposed Store PS2 and could not fall and cause any spillage outside the DG compound or store.	✓	Add. A (Photos 6 & 7)
		(j) Storage areas to be secured against unauthorised entry.	As per Addendum B , there is no security fencing around the Narngulu site, only ring lock fence. The proposed DG compound, in which Store PS2 will be located, will also be a secure fenced area with locked gates (and restricted key access). Store PS2 will also be locked when not in use.	✓	Site Inspection, Add. A (Photos 2, 3, 10 & 18), Add. B & Att. 2 (DGRA)

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Construction of / General requirements for, package stores (cont'd)	AS/NZS 5026 Cl. 5.5.1 & AS 4452 Cl. 6.4.1	(k) Unless designed as spill trays or compounds, racks or shelves to be designed to prevent accumulation or pooling of liquids (l) The layout of shelves / racking to allow clear passage for escape of personnel. Racking to be constructed of compatible material; structurally sound and designed to allow easy access to packages. Signage to indicate permitted loading of racking.	N/A – The Division 4.3 DG packages (AIP blankets in steel drums) within the proposed Store PS2 will be stored directly on a floor constructed from steel grating, and no shelving or racking will be provided.	N/A	Add. A (Photos 6 & 7)
	AS/NZS 5026 Cl. 5.5.1	(m) Where a package store is adjacent to another building, forms part of another building or is enclosed by another building, it should be separated by walls of FRL of at least 240/240/240. The ceiling and floor to have a FRL of at least 180/180/180.	N/A - The AIP Freight Container (Store PS2) will be situated within the proposed Narngulu DG compound, but will be a separate store, i.e. it will not be adjacent to another building, will not form part of another building and will not be enclosed by another building.	N/A	Add. A (Photos 2, 3, 10 & 18 & DWG. 2025-307-0573 & 2025-307-0575)
		(n) Doors into package store must not open inwards.	Access to the proposed Store PS2 will be via the front freight container doors, which open outwards.	✓	Add. A (Photos 3, 7 & 10)
	AS/NZS 5026 Cl. 5.5.1 (o) & AS 4452 Cl. 6.4.1 (m)	Stacking of packages to minimise the potential for stack collapse and damage to packages in lower layers. 205 L drums containing Class 4 DGs not to be stacked more than 3 high and IBCs not more than 2 high.	The packages containing AIP blankets (i.e. 20.4 kg steel drums) will be neatly stacked within Store PS2 directly on a steel grating floor, to a maximum of 3 high. Based on this storage method, it is considered that there will be no potential for stack collapse or damage to packages in lower layers.	✓	Add. A (Photos 6 & 7)
	AS/NZS 5026 Cl. 5.5.1 (p) & AS 4452 Cl. 6.4.1 (o)	Where combustible dusts or flammable gases / vapours may be generated and a HA may exist, all electrical equipment to be suitable for use in a hazardous zone (refer AS/NZS IEC 60079.10).	As discussed in Table C.6 above, it is not considered credible that a HA will exist within Store PS2, as it will be well-ventilated and no potential release source has been identified for the storage and handling of sealed AIP packages that will not be opened in the store (refer to Section 13.10.1 of the 'DG and Chemical Management Plan').	✓	Add. A (Photos 3, 6, 7, 8 & 10), Att. 2 (DGRA) & DG and Chemical Management Plan
	AS 4452 Cl. 6.4.1 (p) & AS/NZS 5026 Cl. 5.5.1 (q)	A safety shower and eyewash facilities complying with AS 4775 and water for washing hands is required within 2 m to 7 m of a store where Class 4 (and SR 6.1) packages are opened (except for Division 4.3 DGs). Where Division 4.3 DGs are stored and handled, locations of safety shower, eyewash and water supply to be determined by risk assessment (taking into account water-reactive properties).	N/A - Although packages of Division 4.3 DGs (AIP blankets in steel drums) will not be opened within Store PS2 (and, hence, a safety shower / eyewash is not required under AS 4452 and AS/NZS 5026), there will be a safety shower / eyewash provided within the proposed Narngulu DG compound, approximately 10 m away. Given that AIP blankets will be stored in gas-tight foil pouches inside closed steel drums within a locked freight container, the location of the safety shower / eyewash will not pose a significant risk with respect to potential water ingress.	N/A	Add. A (Photos 3, 6, 7, 9 & 10 & DWG. 2025-307-0573 & 2025-307-0575) & Att. 2 (DGRA)

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Construction of / General requirements for, package stores (cont'd)	AS/NZS 5026 Cl. 5.5.1 (r) & AS 4452 Cl. 6.4.1 (q)	Clothes rooms / lockers and eating / drinking areas (e.g. lunchrooms / cribsrooms) to be located away from store.	There will be no clothes rooms / lockers or eating / drinking areas located inside, or within close proximity to, the AIP Freight Container (Store PS2) or proposed Narngulu DG compound.	✓	Add. A (Photos 3, 7, 10 & 18 & DWG. 2025-307-0573 & 2025-307-0575)
	AS/NZS 5026 Cl. 5.5.1 (s)	Freight containers not to be used for storage unless suitably designed or modified to comply with AS/NZS 5026.	As stated above, the Division 4.3 DG packages (AIP blankets in steel drums) will be stored in a modified 10 ft freight container within the Proposed Narngulu DG compound. For further details refer under AS/NZS 5026 Cl. 5.9 below.	✓	Add. A (Photos 3, 6, 7, 10 & 18)
Bunds and compounds	AS/NZS 5026 Cl. 5.6.1 & 5.6.2	Ability to contain any spill or leakage within the premises to prevent environmental contamination. If Class 4 DGs are liquid or molten, capacity of the compound to be 100% of volume of PG I or PG II substances stored or 25% of volume of PG III, and at least the capacity of the largest container stored. Compound to be impervious to allow spillage recovery, designed to withstand hydrostatic head when full and provided with means of safe access / egress if >1.5 m in height Where an automatic sprinkler is installed, compound capacity to be increased by a volume equal to output of water / foam over 20 minutes.	NA – The Division 4.3 DGs (AIP blankets) that will be stored within Store PS2 will be in solid form and will be contained within closed steel drums. As liquid / molten DGs will not be stored, a compound / bund is not required. There will also be no automatic sprinkler system installed within Store PS2. It should be noted that the AIP drums will be stored on a raised, steel grating floor within the freight container, however, this is to minimise the potential for exposure to water rather than for spill containment. In the extremely unlikely event of an incident leading to an AIP spill or generation of phosphorous pentoxide / phosphoric acid, any contaminated run-off from the proposed Narngulu DG compound would be directed (via slope of the concrete slab) to a wastewater collection area (an HDPE-lined bund) outside the compound, which will include an isolation point (i.e. PVC pipe with cap).	N/A	Add. A (Photos 3, 6, 7, 10 & 18 & DWG. 2025-307-0573 & 2025-307-0575), Add. E, Att. 1 (Site DG Manifest), Att. 2 (DGRA) & Att. 3 (SDS)
	AS/NZS 5026 Cl. 5.6.3	Class 4 DG packages to be set back from the inner edge of the bund by a distance equal to half the stack height or 1 m, whichever is greater.			
Storage in cabinets	AS/NZS 5026 Cl. 5.7	Clause applies to storage of Class 4 DGs in cabinets. Class 4 DGs that are incompatible or may react dangerously not to be stored in the same cabinet.	N/A – The Division 4.3 (SR 6.1) DGs (AIP blankets) within the proposed Narngulu DG compound will be stored in closed steel drums within a modified freight container (Store PS2) and not in storage cabinets.	N/A	Add. A (Photos 3, 6, 7, 10 & 18)
Indoor storage cabinets	AS 4452 Cl. 6.4.2	Clause applies to storage of toxic substances in indoor storage cabinets.			
Storage of IBCs	AS/NZS 5026 Cl. 5.8	IBCs of ≤ 1,500 L capacity that comply with ADG Code may be stored in a package store if not connected to piping or delivery system, have adequate ventilation and are not stacked more than 2 high.	N/A – The AIP blankets within the AIP Freight Container (Store PS2) at the proposed Narngulu DG compound will be stored in small packages (i.e. gas-tight aluminium foil pouches inside 20.4 kg steel drums), and not in IBCs.		

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Storage in freight containers	AS/NZS 5026 Cl. 5.9	Except for transit storage or loading / unloading, Class 4 DGs not to be stored in freight containers unless they have been modified to comply with Section 5.9.	The Division 4.3 (SR 6.1) DGs (AIP blankets) at the proposed Narnngulu DG compound will be stored in sealed packages within a modified freight container (Store PS2) and, hence, Section 5.9 of AS/NZS 5026 is applicable.	✓	Add. A (Photos 3, 6, 7, 8, 10 & 18) & Att. 3 (SDS)
		(a) Freight container not to be used as a storage area and workshop.	The AIP Freight Container (Store PS2) within the proposed Narnngulu DG compound will only be used for static storage of AIP.	✓	
		(b) Materials of construction of the freight container floor to be compatible with the Class 4 DGs to be stored.	Store PS2 will be a steel freight container with a raised floor constructed from steel grating. Steel is compatible with the Division 4.3 DG to be stored (i.e. AIP).	✓	
		(c) Prior to use, floorboards to be inspected to ensure that there is no contamination from previous spills / leaks.	N/A – Store PS2 will be a steel freight container with a raised floor constructed from steel grating, i.e. there will be no floorboards.	N/A	
		(d) Where pedestrian access is required, a clear, demarcated (e.g. painted yellow lines) passageway to be provided inside the container.	A pedestrian accessway (i.e. 800 mm pathway) will be provided inside the proposed AIP Freight Container (Store PS2). Where possible this accessway will be kept clear of drums. However, regardless, due to the good housekeeping / method of storage of the AIP drums and the dimensions of the freight container (i.e. only 2.84 m in length), the drums will be able to be easily and safely accessed by CBH personnel. Clear access (marked with yellow painted lines) will also be provided around the outside of Store PS2 (and other DG stores within the proposed Narnngulu DG compound).	✓	Add. A (Photos 2, 3, 4, 5, 6, 7, 10, 13, 14, 16, 18 & 19)
		(e) No electrical equipment installed inside the freight container unless it is suitable for use in the hazardous zone	As mentioned above, there will be no fixed electrics inside Store PS2 and AIP drums will remain closed at all times (<i>refer to Section 13.10.1 of the CBH 'DG and Chemical Management Plan'</i>). The store will also be provided with adequate natural ventilation and, hence, presence of a HA within the store is not considered possible.	✓	Add. A (Photos 6, 7, 8, 10 & 18), Att. 2 (DGRA) & DG and Chemical Management Plan
		(f) Doors must be able to be opened from the inside and any external locks deactivated.	Access to Store PS2 will be via the front freight container doors, which open outwards and will not have any external locks that could cause a person to become trapped inside.	✓	Add. A (Photos 3, 7, 10 & 18 & DWG. 2025-307-0575)
		(g) No point within the container to be more than 6 m from an exit door.	Store PS2 will be a 10 ft freight container with an internal length of 2.84 m and, hence, there will be no point in the store that is further than 2.84 m (i.e. <6 m) from the exit door.	✓	

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Package filling operations	AS/NZS 5026 Cl. 5.10 & AS 4452 Cl. 6.5	Clauses apply to package filling operations for Class 4 DGs with SR 6.1.	N/A – Store PS2 within the proposed Narngulu DG compound will only be used for static storage. AIP packages (i.e. drums) will not be filled, opened or product transferred within the store (<i>refer to Section 13.10.1 of the CBH 'DG and Chemical Management Plan'</i>).	N/A	Add. A (Photos 3, 6, 7, 10 & 18 & DWG. 2025-307-0573 & 2025-307-0575), Att. 2 (DGRA) & DG and Chemical Management Plan
Activities in package stores	AS/NZS 5026 Cl. 5.11	Activities other than those in Cl. 5.10 are not to be carried out unless a risk assessment has been conducted and a risk management plan prepared and implemented.	N/A - No activities other than static storage of Division 4.3 (SR 6.1) DGs will be undertaken in the AIP Freight Container (Store PS2) within the proposed Narngulu DG compound.	N/A	
Offices within package stores	AS/NZS 5026 Cl. 5.12	Clause applies to offices located within a Class 4 DG store.	N/A – There will be no office within the proposed Store PS2 or associated DG compound at CBH's Narngulu site.	N/A	

Table C.8 Additional Requirements for Division 4.1 DGs

Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Scope & application of section	6.1, 6.2 & 6.3	Section 6 of AS/NZS 5026 sets out additional requirements specific to different types of Division 4.1 DGs stored in cabinets, packages or IBCs.	N/A - Section 6 of AS/NZS 5026 is not applicable to Store PS2 at the proposed Narngulu DG compound, as AIP is classified as a Division 4.3 (SR 6.1) DG.	N/A	Att. 1 (Site DG Manifest) & Att. 3 (SDS)

Table C.9 Additional Requirements for Division 4.2 DGs

Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Scope & application of section	7.1 & 7.2	Section 7 of AS/NZS 5026 sets out additional requirements specific to different types of Division 4.2 DGs stored in packages / IBCs or tanks.	N/A - Section 7 of AS/NZS 5026 is not applicable to Store PS2 at the proposed Narngulu DG compound, as AIP is classified as a Division 4.3 (SR 6.1) DG.	N/A	Att. 1 (Site DG Manifest) & Att. 3 (SDS)

Table C.10 Additional Requirements for Division 4.3 DGs

Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Scope & application of section	8.1 & 8.2	Section sets out additional requirements of AS/NZS 5026 specific to Division 4.3 DGs, which take precedence of requirements specified elsewhere in the standard.	Section 8 of AS/NZS 5026 is applicable to Store PS2 at the proposed Narngulu DG compound, as AIP is classified as a Division 4.3 (SR 6.1) DG.	✓	Att. 1 (Site DG Manifest) & Att. 3 (SDS)

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Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.	
Essential requirements	8.3	Store design, construction and operation to ensure that Division 4.3 DGs are protected from exposure to water in any form (including atmospheric moisture).	AIP blankets will be stored in gas-tight foil pouches inside sealed containers (i.e. 20.4 kg steel drums) on a raised floor constructed from steel grating. The Division 4.3 DG packages will not be opened within Store PS2 (<i>refer to Section 13.10.1 of the CBH 'DG and Chemical Management Plan'</i>) and, hence, contact with water during storage is not considered possible. The inside of the freight container is also painted with an anti-condensation coating to minimise potential for moisture build-up due to condensation.	✓	Add. A (Photos 3, 7, 8, 10 & 18), Att. 2 (DGRA) & DG and Chemical Management Plan	
Storage of packages and IBCs	8.4.1	Where packages or IBCs of Division 4.3 DGs are not opened within a store:				
		(a) Where the store is part of a building: (i) at least 1 side to be an external wall with ventilation to outside of the building and no ventilation into the building; or (ii) at least 1 wall to be open to outdoors (e.g. steel mesh gate or louvred wall) with no ventilation into the building. Ventilation to prevent water ingress.	N/A – Store PS2 within the proposed Narngulu DG compound will be a dedicated, modified freight container and not part of a building. The vents in the side walls are provided with a cover to prevent ingress of water.	N/A	Add. A (Photos 3, 6, 7, 8, 10 & 18)	
		(b) If storage cabinets are used, they should be located indoors.	N/A – The Division 4.3 DGs (i.e. AIP blankets) will be stored inside a freight container (Store PS2) and not within a storage cabinet.	N/A		
		(c) Division 4.3 packages and IBCs to be protected from contact with, and ingress of, moisture.	As above, AIP blankets will be stored in sealed packages (i.e. drums) within a modified freight container (Store PS2) that has been painted with an internal anti-condensation coating. Packages will not be opened within Store PS2 (<i>refer to Section 13.10.1 of the CBH 'DG and Chemical Management Plan'</i>) and, hence, contact with / ingress of moisture is not considered possible.	✓	, Add. A (Photos 3, 6, 7, 8, 10 & 18), Att. 2 (DGRA) & DG and Chemical Management Plan	
	(d) Any fixed electrical equipment to be: (i) suitable for the HA designated in AS/NZS 60079.10 series (i.e. Zone 1 for PG I and Zone 2 for PG II / III); (ii) installed as per AS/NZS 3000; and approved for use with any gas that may be generated by the DGs stored.	N/A - There will be no fixed electrical equipment inside Store PS2. Also, as detailed above, the AIP packages (drums) will remain closed at all times and the store will be provided with adequate natural ventilation and, hence, presence of a HA within the store is not considered possible.	N/A			
8.4.1	(e) Firefighting equipment / media, compatible with the Division 4.3 DGs stored and capable of extinguishing any potential fire, to be provided.	As detailed in Table C.13 below, several dry powder fire extinguishers (FEs) will be provided within the proposed Narngulu DG compound. Based on the SDS, dry powder is suitable for fighting fires involving AIP.	✓	Add. A (Photos 4, 15 & 19), Att. 2 (DGRA) & Att. 3 (SDS)		

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Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Storage of packages and IBCs (cont'd)	8.4.2	Division 4.3 DG stores to be separated from protected places and boundaries by a least 5 m (which can be measured around a firewall with a FRL of at least 240/ 240/240).	N/A – As per Cl. 8.5.2 below, package stores containing Division 4.3 DGs of PG I must be separated from protected places and site boundaries by a least 15 m (i.e. greater than the 5 m required by AS/NZS 5026 Cl. 8.4.2).	N/A	Att. 1 (Site DG Manifest) & Att. 3 (SDS)
Division 4.3 PG I	8.5.1	(a) Store to be located within a bunded compound, complying with Cl. 5.6 and of adequate strength and capacity, to: (i) contain the DGs in a fire (if the DGs are liquids or will liquify in a fire); and (ii) prevent water entering the store at ground level.	The AIP Freight Container (Store PS2) will be situated within the proposed Narngulu DG compound, but the area will not be bunded. The concrete slab will slope to a wastewater collection area (an HDPE-lined bund) outside the DG compound to the south-east. As mentioned previously, Store PS2 will have a raised internal floor constructed from steel grating. Due to the freight container being closed, the internal floor being raised, design of the vents, and drainage within the proposed Narngulu DG compound preventing water pooling / collecting, water entering Store PS2 at ground level is not considered possible.	✓	Add. A (Photos 2, 3, 6, 7, 10 & 18 & DWG. 307-ENG-CI-DAL-0030 & 2025-307-0575)
		(b) Combustible materials and DGs of other classes not to be stored in the same storage area as Division 4.3 PG I DGs.	The AIP Freight Container (Store PS2) within the proposed Narngulu DG compound will only contain AIP, which is a Division 4.3 (SR 6.1) DG of PG I. There will be no combustible materials stored inside or around Store PS2.	✓	Add. A (Photos 3, 6, 7, 10 & 18), Att. 1 (Site DG Manifest) & Att. 3 (SDS)
	8.5.2	Package stores and tanks containing Division 4.3 PG I DGs to be separated from foodstuffs, protected places and site boundaries by at least 15 m.	As detailed under AS/NZS 5026 Cl. 5.4.2 in Table C.7 above, greater than 15 m separation distance will be provided from Store PS2 to foodstuffs, protected places and the nearest site boundary.	✓	Table C. 7 & Add. A (DWG. 2025-307-0573)
Division 4.3 PG II	8.6	Combustible materials and DGs of other classes not to be stored in the same storage area as Division 4.3 PG II DGs.	N/A – As per Cl. 8.5 above, the AIP Freight Container (Store PS2) within the proposed Narngulu DG compound will only contain AIP, which is a Division 4.3 DG of PG I.	N/A	Att. 1 (Site DG Manifest) & Att. 3 (SDS)
Division 4.3, SR 3	8.7	Division 4.3 DGs with a Class 3 SR to be stored as per the more stringent requirements of AS 1940 or AS/NZS 5026, must not be stored with other Class 3 DGs, and selection of fire protection equipment to be based on a risk assessment and the Division 4.3 classification in addition to the Class 3 hazard.	N/A – The AIP to be stored in the AIP Freight Container (Store PS2) within the proposed Narngulu DG compound is a Division 4.3 DG with a Division 6.1 SR (i.e. not a Class 3 SR).	N/A	

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Table C.11 Operational and Personnel Safety

Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Control of entry	AS/NZS 5026 Cl. 9.2.1 & AS 4452 Cl. 9.2.2	Control of entry to prevent unauthorised access to the site / any restricted areas.	As per Addendum B above, there is no security fencing around the Narngulu site, only ring lock fence. The proposed DG compound, in which Store PS2 will be located, will be a secure fenced area with locked gates (and restricted key access). Store PS2 will also be locked when not in use.	✓	Add. A (Photos 2, 3, 10 & 18), Add. B & Att. 2 (DGRA)
Clear access	AS/NZS 5026 Cl. 9.2.2	Entry into / exit from Class 4 DG store to be kept clear at all times; and easy access to be provided at all times to personal protective equipment (PPE); firefighting equipment; spill clean-up materials & equipment, and DG manifest.	Store PS2 within the proposed Narngulu DG compound will be located at ground level (although the ground / concrete slab will be raised slightly to prevent flooding and a concrete apron provided) and there will be clear / easy access to / egress from the store (once the compound gate is unlocked).	✓	Add. A (Photos 2, 3, 4, 7, 9, 10, 15, 18 & 19 & DWG. 2025-307-0575 & 307-ENG-CI-DAL-0030) & Att. 2 (DGRA)
	AS 4452 Cl. 9.2.3	Entry into / exit from areas where toxic substances are stored or handled to be kept clear at all times. Access to be provided at all times to PPE; firefighting equipment; spill clean-up materials & equipment and DG manifest.	As per Cl. 5.9 in Table C.7 above, clear accessways will be provided inside and around the outside (marked with yellow paint) of Store PS2. Due to the method of storage of the AIP packages and the dimensions of the freight container (i.e. only 2.84 m in length), CBH personnel will be able to easily and safely access the AIP drums at all times. Access will be checked during regular inspections using the CBH 'DG Compound Weekly Inspection' in ROAM. Within the proposed DG compound, clear access will also be provided to firefighting equipment, safety equipment (e.g. safety shower / eyewash), first-aid kit, the Site DG Manifest and SDSs.		
Lighting	AS/NZS 5026 Cl. 9.2.4 (a) AS 4452 Cl. 9.2.4 (a) (b)	Sufficient lighting to provide safe working conditions and allow people to read signs, markings, instruments and other necessary items. Interior lighting to be of at least the luminance specified in AS/NZS 1680.	As per Table C.6 above, Store PS2 at the proposed Narngulu DG compound will not be provided with any fixed lighting (inside), as the store (and compound) will not normally be accessed outside daylight hours. However, the DG compound will be provided with some motion-activated security lighting and a light within the Vehicle Parking Shelter.	✓	Add. A (Photos 2, 7, 8, 9 & 10) & Att. 2 (DGRA)
	AS/NZS 5026 Cl. 9.2.4 (e) AS 4452 Cl. 9.2.4 (c)	Sufficient lighting to be provided on internal site roads.	There are some floodlights to the north-west of the proposed Narngulu DG compound near the weighbridges, as well as some floodlights around the site office / amenities.	✓	Site Inspection, Add. A (Photo 30) & Att. 2 (DGRA)

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Lighting (cont'd)	AS/NZS 5026 Cl. 9.2.4	(b) Where there is risk of a flammable gas being generated, lighting to comply with AS/NZS 60079.10.1.	As detailed above, motion-activated security lighting (and a light within the Vehicle Parking Shelter) will be provided within the proposed Narngulu DG compound. Due to adequate natural ventilation and the nature of the DG packages to be stored, it is considered that a HA cannot exist inside the compound.	✓	Add. A (Photos 2, 6, 7, 8, 9, 10 & 18) & Att. 2 (DGRA)
	AS/NZS 5026 Cl. 9.2.4	(c) Where combustible dusts are present, relevant requirements of AS/NZS 61241 to apply.	N/A – There will be no combustible dusts associated with storage of AIP blankets within Store PS2 at the proposed Narngulu DG compound.	N/A	Att. 2 (DGRA) & Att. 3 (SDS)
Vehicular access	AS/NZS 5026 Cl. 9.2.3	Vehicle access and movement to be controlled; only compliant vehicles to be used in hazardous zones; speed limits imposed and displayed; parking of vehicles only in designated areas.	<p>As per the CBH 'Vehicle and Traffic Management' Procedure (STORE ID 17619110), traffic movements around the Narngulu site are controlled (<i>refer to the 'Narngulu Traffic Flow Map' in Addendum A</i>). Although there is no security fencing around the Narngulu site, ring lock fencing is provided.</p> <p>The speed limit for the main site is 20 kph, which is signposted around the Narngulu site. The speed limit for the proposed DG compound will be 5 kph and a sign will be displayed on the DG compound fence.</p> <p>There are clearly defined designated parking areas provided at the south of the site, to the east of the office.</p> <p>Warning signage will be provided on the fence of the proposed Narngulu DG compound stating "NO PARKING OR STANDING WITHIN 15 METRES OF COMPOUND" and there is also signage at the site entrance stating "WARNING – RESTRICTED AREA / AUTHORISED ENTRY ONLY", "ALL VISITORS MUST REPORT TO, AND OR, CONTACT THE SITE MANAGER OR WEIGHBRIDGE OPERATOR".</p> <p>As above, AIP blankets will be stored in closed packages (i.e. gas-tight foil pouches inside steel drums) within an adequately ventilated freight container (Store PS2) and vehicles will not be required to enter the store. Although GP vehicles will enter the proposed DG compound intermittently, the proposed AIP Waste Storage Area (Store PS3) and Gas Cylinder Store (Store PS1) will also be well-ventilated and, hence, it is considered that a HA will not exist inside the compound (<i>refer under AS/NZS 5026 Cl. 9.2.3 in Table D.11 of Addendum D</i>).</p>	✓	Add. A (Photos 1, 4, 6, 7, 8, 10, 13, 14, 16, 18, 19, 20, 21, 22, 23 & 29 & DWG. 2025-307-0575 & Narngulu Traffic Flow Map), Add. E & Att. 2 (DGRA)

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Ventilation	AS/NZS 5026 Cl. 9.2.5 (a)(b) & AS 4452 Cl. 9.3.2 (a)(c)	Store to be provided with adequate natural or mechanical ventilation appropriate to the nature of the DG stored. Ventilation to be sufficient to maintain ambient concentrations of any vapours / dusts as low as practicable and below any assigned workplace exposure levels.	As the Division 4.3 DGs (AIP blankets) will be stored in sealed packages that are not opened within the store (<i>refer to Section 13.10.1 of the CBH 'DG and Chemical Management Plan'</i>), generation of any vapours / dusts is not considered to be credible. However, adequate natural ventilation will be provided for the AIP Freight Container (Store PS2) via vents (upper and lower) in opposite side walls.	✓	Add. A (Photos 6, 7, 8, 10 & 18), Att. 2 (DGRA) & DG and Chemical Management Plan
	AS/NZS 5026 Cl. 9.2.5 (c) & AS 4452 Cl. 9.3.2 (d)	Mechanical ventilation system (e.g. general / local exhaust ventilation) to comply with the requirements of AS 1668.2 and exhaust flow rates determined by a suitably qualified engineer. For toxic substances, local exhaust ventilation is most effective.	N/A – As immediately above, the AIP Freight Container (Store PS2) within the proposed Narngulu DG compound will be provided with adequate natural ventilation and, hence, a mechanical ventilation system is not required.	N/A	
	AS/NZS 5026 Cl. 9.2.5 (d) & AS 4452 Cl. 9.3.2 (e)	Mechanical ventilation system not to introduce an active or potential ignition source.			
Introduction of ignition sources	AS/NZS 5026 Cl. 9.2.6	Work permit to be obtained prior to introducing an active / potential ignition source into a restricted area.	Any hot work within Store PS2 and the proposed Narngulu DG compound will be managed in accordance with the CBH 'Permit to Work' (PTW) Group Procedure' (STORE- 473931053-244096) and associated Hot Work SOP. Also, as per Section 13.7.2 of the 'DG and Chemical Management Plan', a detailed job safety analysis (JSA) must be completed prior to any non-routine works being undertaken within a CBH DG compound and all DGs must be removed from the immediate area.	✓	Att. 2 (DGRA), PTW Group Procedure, Hot Work SOP & DG and Chemical Management Plan
Site upkeep	AS/NZS 5026 Cl. 9.2.7 (a) (d) & AS 4452 Cl. 9.4.1	Area within a compound, or within 3 m of it, to be kept clear of extraneous matter / combustible materials. Vegetation to be kept short if it could present a fire hazard.	The proposed Narngulu DG compound will be built upon a concrete pad and all stores and other infrastructure (e.g. fences and gates) will be constructed from steel, i.e. all materials of construction for the DG compound will be non-combustible. The condition of the proposed DG compound, including build-up of combustible materials and vegetation will be regularly checked as part of the CBH 'DG Compound Weekly Inspection' in ROAM.	✓	Add. A (Photos 2, 3, 4, 6, 7, 8, 10, 13, 14, 16, 18, 19, 21, 22 & 23 & DWG. 307-ENG-CI-DAL-0030 & 2025-307-0575) & Att. 2 (DGRA)

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Site upkeep (cont'd)	AS/NZS 5026 Cl. 9.2.7	(b) Specified clearance distances to be maintained at all times	A 15 m exclusion zone will be maintained around the proposed Narngulu DG compound and appropriate signage will be displayed (e.g. "NO PARKING OR STANDING WITHIN 15 METRES OF COMPOUND") to ensure required clearance / separation distances are maintained at all times. This requirement will be regularly checked as part of the CBH 'DG Compound Weekly Inspection' in ROAM.	✓	Add. A (Photo 2) & Att. 2 (DGRA)
Bulk storage installations	AS/NZS 5026 Cl. 9.2.10 & AS 4452 Cl. 9.4.2	Access to bulk storage compounds (e.g. ladders, stairs, catwalks and platforms) to be kept in a safe condition. Hatches, tank opening, manholes or similar to be kept closed when not in use.	N/A – The AIP Freight Container (Store PS2) within the proposed Narngulu DG compound will be a package store and not a bulk storage installation.	N/A	Add. A (Photos 3, 6, 7, 10 & 18)
Package stores	AS 4452 Cl. 9.4.3 (a) to (d)	Segregation requirements for each toxic substance to be determined and documented in a procedure. Any toxic substance not already addressed in the procedure to be included and temporarily held in a separate area prior to assessing segregation requirements. Procedure to list toxic substances that may be stored in each nominated area.	N/A – The AIP Freight Container (Store PS2) within the proposed Narngulu DG compound will only contain AIP blankets and no other toxic substances, hence segregation within the store is not relevant. However, procedures related to AIP storage and handling are included in Section 13.10 of the CBH 'DG and Chemical Management Plan'.	N/A	Att. 1 (Site DG Manifest) & DG and Chemical Management Plan
	AS/NZS 5026 Cl. 9.2.11 (a) & AS 4452 Cl. 9.4.3 (e)	Aisles inside the store to be kept clear.	There are no aisles within Store PS2 at the proposed Narngulu DG compound, as will be a small (10 ft) freight container with a width of 2.35 m and a length of 2.84 m. As per Cl. 5.9 in Table C.7 above, there will be a 800 mm accessway within the store and, where possible, this area will be kept clear of drums. However, due to the method of storage of AIP drums and the dimensions of the freight container, CBH personnel will be able to easily and safely access the drums at all times.	✓	Add. A (Photos 6 & 7)
	AS/NZS 5026 Cl. 9.2.11 (b) & AS 4452 Cl. 9.4.3 (g)	Packages regularly inspected and, if any signs of leakage from damaged packages, should be repackaged.	The AIP Freight Container (Store PS2) within the proposed Narngulu DG compound will be regularly inspected as part of the CBH 'DG Compound Weekly Inspection' in ROAM, which will ensure that any damaged packages and signs of leakage are identified. The procedure to be followed in the unlikely event that damaged or contaminated AIP packages are discovered is included in the Section 13.10.1 of the CBH 'DG and Chemical Management Plan'.	✓	DG and Chemical Management Plan
	AS/NZS 5026 Cl. 9.2.11 (c)	Any contamination of outer package removed prior to storage.			

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Package stores (cont'd)	AS/NZS 5026 Cl. 9.2.11 (d) & AS 4452 Cl. 9.4.3 (h)	Minor spills treated - prevent leaks and spills from occurring, and clean up action to be initiated immediately.	As per Table B.3 in Addendum B , a spill from new AIP blankets is not considered credible, as they will be stored in sealed packages within a freight container (Store PS2) and will not be opened within the store (<i>refer to Section 13.10.1 of the CBH 'DG and Chemical Management Plan'</i>).	✓	Add. A (Photos 3, 6, 7 & 10), Add. B & DG and Chemical Management Plan
	AS/NZS 5026 Cl. 9.2.11 (e) & AS 4452 Cl. 9.4.3 (j)	Any packages opened or partially used to be clearly identified and used first.	When AIP blankets are removed from a drum, the number of blankets remaining should be clearly written on the drum. This requirement is formalised in Section 13.10.1 of the CBH 'DG and Chemical Management Plan'.	✓	Add. A (Photos 6, 7 & 17) & DG and Chemical Management Plan
	AS/NZS 5026 Cl. 9.2.11 (f)(g) & AS 4452 Cl. 9.4.3 (k)(l)	Labels retained on empty containers until decontaminated, after which labels should be removed or obscured. Unless decontaminated, empty Class 4 / SR Division 6.1 containers to be treated as containing Class 4 / SR 6.1 DGs except bunding not required.	Section 13.12.2 of the CBH 'DG and Chemical Management Plan' details the requirements for safe disposal of the empty AIP containers, including: triple rinsing of the steel drums; physically removing the labels; and recycling (by Waste Wise).	✓	DG and Chemical Management Plan
Safety information	AS/NZS 5026 Cl. 9.2.12 & AS 4452 Cl. 9.2.6	Copies of SDS, detailing hazardous properties and appropriate first-aid measures, to be kept in an easily accessible location and must be kept up to date.	SDSs for some hazardous chemicals to be stored and handled at the Narngulu site are available electronically via ChemAlert. However, copies of the manufacturer's / supplier's SDSs for DGs used by GP personnel are not all available in ChemAlert. Consequently, CBH's GP team has developed an SDS Register of all chemicals approved for use in the 'Protect Grain Procedure' / 'DG and Chemical Management Plan', which is accessible to all GP personnel via STORE links in these GP documents. Hard copy SDSs for DGs stored and handled within the proposed Narngulu DG compound will be provided in EICs at the Narngulu site entrance and outside the DG compound. Relevant SDS are also provided in Attachment 3 of this report.	✓	Add. A (Photos 2 & 18), Att. 3 (SDS), Protect Grain Procedure & DG and Chemical Management Plan
Inspection of plant and equipment	AS 4452 Cl. 9.4.4	Plant and equipment to be inspected periodically to ensure that it is in a serviceable condition, including (a) visual inspection, non-destructive testing (NDT) or simulation of operating conditions for tanks, piping, valves, pumps, gauges, alarms, etc.; and (b) inspection of vents and any relief valves to ensure that they are clear of obstructions and operable. Records of inspections to be kept.	N/A – The AIP Freight Container (Store PS2) within the proposed Narngulu DG compound will be a package store and not a bulk storage (e.g. not a fixed tank with associated piping and equipment).	N/A	Add. A (Photos 3, 6, 7, 10 & 18)

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Operating procedures	AS/NZS 5026 Cl. 9.3	Safe systems of work, including written procedures to be developed and implemented, e.g. emergency procedures, site plan indicating locations of stores, operating procedures and construction / maintenance procedures. Procedures to be readily available / easily accessible.	CBH has developed formal plans, Standard Operating Procedures (SOPs) / procedures and work instructions (WIs) for performing work at CBH sites, including procedures related to ER and operations work management (OWM). These documents form part of CBH's Integrated Management System (IMS) and are readily accessible electronically via SharePoint (SHARE).	✓	Document Control, Content and Records Management Group Procedure & Document Control WI
		Regular review and update of procedures, particularly following facility modifications or organisational changes.	Creation, review and revision of IMS documents, as well as records management and retention, is managed in accordance with CBH's Group Procedure 'Document Control, Content and Records Management' (STORE-1473931053-253) and associated 'Document Control' WI (STORE-1473931053-243914). Review frequency is specified at the back of the IMS documents, however SOPs / procedures and WIs are normally reviewed and, if required, updated on an annual basis.	✓	Document Control, Content and Records Management Group Procedure & Document Control WI
		All site personnel to be trained in, and comply with, appropriate procedures; and an audit system to be developed and implemented to ensure compliance.	All CBH Narngulu site personnel will be provided with training in accordance with the 'Training, Awareness and Competency' Group Procedure (STORE-1473931053-395), some of which includes an observational assessment (OA). Compliance with procedures is assessed in accordance with the IMS 'Audit and Verification' Group Procedure (STORE-1473931053-149) and includes layered audits, Critical Control Verifications (CCVs) and safety interactions.	✓	Training, Awareness and Competency Group Procedure & Audit and Verification Group Procedure
Effluent control	AS/NZS 5026 Cl. 9.4 & AS 4452 Cl. 9.5	Effluent lines to be monitored to ensure compliance with regulatory requirements and no discharge of harmful effluent prior to appropriate treatment. Records to be kept of any monitoring.	N/A – There will be no effluent lines directly associated with the AIP Freight Container (Store PS2) at the proposed Narngulu DG compound, as it will only be used for static storage of solid Division 4.3 (SR 6.1) DGs in packages. The concrete slab of the DG compound will slope to a wastewater collection area (an HDPE-lined bund) outside the compound, which will include an isolation point (i.e. PVC pipe with cap). As per Section 13.11 of the 'DG and Chemical Management Plan', the purpose of this area is to capture any stormwater / FW after an incident so that it can be drained away as needed, following a visual inspection, to ensure no contamination.	N/A	Add. A (Photos 3, 6, 7, 10 & 18 & DWG. 307-ENG-CI-DAL-0030 & 2025-307-0575) & DG and Chemical Management Plan

PROPOSED NARNGULU DG COMPOUND

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Construction and maintenance work	AS/NZS 5026 Cl. 9.5 & AS 4452 Cl. 9.6	Construction and maintenance not carried out in the store without written authorization.	Any construction or maintenance work related to Store PS2 or any other store within the proposed Narngulu DG compound would be planned and conducted under CBH's SAP System, as detailed in the OWM Group Procedure	✓	Att. 2 (DGRA) & OWM Group Procedure (STORE-1473931053-795)
		If any doubt about safety, toxic substances to be moved to another location prior to starting work.	As under Cl. 9.2.6 above, any high-risk work must be planned, controlled and completed in accordance with the CBH 'PTW Group Procedure' and associated SOPs, which will include a risk assessment. Also, as per Section 13.7.2 of the CBH 'DG and Chemical Management Plan', a detailed JSA must be completed prior to any non-routine works being undertaken within any CBH DG compound and all DGs must be removed from the immediate area.	✓	Att. 2 (DGRA), OWM Group Procedure, PTW Group Procedure & DG and Chemical Management Plan
		Any routine work for which a work permit is not required to be supervised to ensure that it is performed safely			
		Work within a restricted area (except routine, non-hazardous work) to be authorised under a work permit and management of change (MoC) procedures.			
Records	AS/NZS 5026 Cl. 9.7	Records for training, equipment testing, emergency drills, maintenance, inspections and incidents, SDS, and site chemical inventory to be kept.	<p>CBH retains records electronically. As above, records of training are kept on the 'Success Factors Learning Management System.</p> <p>As per the CBH 'Incident Management' Group Procedure', all incidents, including DG related incidents, are reported / recorded in the CBH SharePoint (Cintellate / SHARE) system on a daily basis and communicated to all CBH personnel via email. Incident records are kept in SHARE.</p> <p>Records of emergency drills / exercises, including any improvement opportunities / Actions, as well as DG compound inductions and weekly inspections recorded in ROAM, are kept in CBH's SHARE System.</p> <p>As per Cl. 9.2.12 above, electronic copies of SDSs are accessible either via ChemAlert or the GP SDS Register in STORE365. Hard copies of relevant SDS will also be provided at strategic locations around the Narngulu site, i.e. in EICs at the site entrance and outside the proposed DG compound.</p> <p>Records of equipment testing / inspections and maintenance are maintained in CBH's SAP System.</p> <p>Quantities of DGs to be stored and handled (above placarding quantities under Schedule 1 of the DG Regs) are recorded in the Draft Narngulu Site DG Manifest (Attachment 1).</p>	✓	Att. 1 (Site DG Manifest), Training, Awareness and Competency Group Procedure (STORE-1473931053-395), Incident Management Group Procedure (STORE-1473931053-243706), OWM Group Procedure (STORE-1473931053-795), Protect Grain Procedure, DG and Chemical Management Plan & CBH SHARE System



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Dangerous Goods Risk Assessment

Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Personnel training	AS/NZS 5026 Cl. 9.6 & AS 4452 Cl. 9.7	<p>Personnel handling Class 4 (SR 6.1) DGs to be aware of properties / hazards, safe handling methods, use of PPE, personal hygiene, first-aid and emergency response.</p> <p>Emergency drills and use of firefighting equipment to be provided as part of training.</p>	<p>All CBH personnel are provided with training in accordance with the 'Training, Awareness and Competency' Group Procedure, some of which includes an OA. Training of personnel is managed electronically / online through the 'Success Factors: Learning Management System', which includes a detailed online HSE Induction and identifies requirements for refresher training.</p> <p>Site-specific inductions, including site hazards, PPE and ER requirements, are also provided to personnel, contractors and visitors to CBH sites. A special induction will also be given to persons required to enter the proposed Narngulu DG compound for the first time. This induction will be completed electronically in ROAM and records are kept in SHARE.</p> <p>Job-specific training is provided to GP personnel, where required, including, but not limited to: forklift training / licensing, manual handling, PTW and isolation, fumigation in the workplace, SCBA, use of portable FEs and FHRs (i.e. responding to minor emergencies), and comprehensive work-based training in the handling of DGs (e.g. Fintran stewardship for AIP and Solvay stewardship for PH₃ gas).</p> <p>As stated in Section 12.2 of the Protect Grain Procedure, there is a requirement for CBH DG sites to conduct an annual drill related to transport, storage and fumigation processes and one of these should include a site evacuation and involve the local DFES. Annual ER exercises and training will also be mentioned in EP that will be developed for the proposed Narngulu DG compound (<i>refer to SHARE Action ACT-37372</i>).</p> <p>Daily toolbox / pre-start meetings are held at the Narngulu site and include HSE topics. All drivers delivering DGs to site will be appropriately trained and DG licensed, where required.</p> <p>Many CBH personnel (all frontline staff), including those currently working at the Narngulu site, have been provided with appropriate Advanced First Aid training. All licensed GP personnel must have first aid training, including use of a bag valve mask (BVM).</p>	✓	Att. 2 (DGRA), Training, Awareness and Competency Group Procedure (STORE-1473931053-395), Protect Grain Procedure, DG and Chemical Management Plan & CBH SHARE System

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Personal Protective Equipment (PPE)	AS/NZS 5026 Cl. 9.8 & AS 4452 Cl. 9.8	All personnel to be provided with correct PPE, which should be easily accessible and in good working order. Personnel to be trained in correct use of PPE. PPE to be selected in accordance with the relevant AS.	<p>Requirements regarding PPE selection, use and maintenance are detailed in Section 13 of the CBH 'Personal Health and Safety' Standard. Appropriate PPE is provided to CBH personnel on employment and additional PPE (e.g. gloves, ear plugs and safety glasses) is also provided at CBH sites. Correct use of PPE is addressed in the CBH online HSE Induction and, for GP personnel, during SCBA training, fumigation training and fit testing.</p> <p>As a minimum, all personnel entering the proposed Narngulu DG compound must wear safety boots, high visibility shirt, long trousers, safety glasses and a personal gas monitor (e.g. PAC-8000 or ToxiPro). When carrying out specific work activities, or for ER, additional PPE (e.g. chemical resistant overalls, full-face respirators or SCBA) may also be required. PPE requirements for specific GP activities are detailed in the Protect Grain Procedure and associated Work Instructions (WIs), and the 'GP Chemical PPE Guide'.</p> <p>A sign will be displayed on the front of the proposed Narngulu DG compound stating "PERSONAL GAS MONITOR MUST BE WORN IN THIS AREA".</p>	✓	Add. A (Photos 1, 2 & 12), Att. 2 (DGRA), Personal Health and Safety' Standard (STORE-1473931053-521), Protect Grain Procedure & GP Chemical PPE Guide (STORE-1473931053-299)
First Aid	AS/NZS 5026 Cl. 9.9 & AS 4452 Cl. 9.9	<p>First Aid station to be provided in a clean area, and should contain first aid kit, instructions and relevant SDS.</p> <p>List of trained first aiders to be displayed on notice boards and at each first aid station.</p>	<p>As shown on the Narngulu Traffic Flow Map in Addendum A, first aid kits are provided in nearby weighbridges. A first-aid kit will also be installed within the Vehicle Parking Shelter of the proposed Narngulu DG compound.</p> <p>Electronic copies of SDSs are accessible either via ChemAlert or the GP SDS Register in STORE365. Hard copies of relevant SDS will also be provided in the EICs at the Narngulu site entrance and outside the proposed DG compound.</p> <p>All front line CBH personnel (approximately 90%) are provided with appropriate Advanced First Aid training (hence, not identified on notice boards) and licensed GP personnel are also trained in use of BVMs.</p>	✓	Add. A (Photos 2 & 18 & Narngulu Traffic Flow Map) & Att. 2 (DGRA)
	AS/NZS 5026 Cl. 9.9 & AS 4452 Cl. 9.2.5 & Cl. 9.9	Eyewash facilities complying with AS 4775 to be provided.	A safety shower / eyewash facility will be provided inside the proposed Narngulu DG compound. The condition and operability of the safety shower / eyewash will be checked on a weekly basis as part of the 'DG Compound Weekly Inspection' in ROAM.	✓	Add. A (Photo 9 & DWG. 2025-307-0575)

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Table C.12 Emergency Management

Refer also to details provided in Table B.3 in Addendum B.

Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Planning for emergencies	AS/NZS 5026 Cl. 10.2.1 & AS 4452 Cl. 10.2	Design and layout of premises to ensure suitable distances between bund walls, storage areas and other structures to allow access for maintenance and during emergencies; installation of alarms; water supplies; fire protection equipment; evacuation and access routes; containment of leaks, spills and run-off of firewater; and location of EP.	As detailed in Tables B.3, C.6, C.7, C.10 and C.13, the design and layout of the Narngulu site, including the proposed DG compound, is appropriate to effectively manage any potential emergencies that could arise. Details of emergency management, evacuation / access requirements and ER actions will be provided in a new EP to be developed for the proposed Narngulu DG compound (<i>refer to SHARE Action ACT-37372</i>).	✓	Add. B, Att. 2 (DGRA) & CBH SHARE System
Manifest	AS/NZS 5026 Cl. 10.3 & AS 4452 Cl. 10.3	Manifest to be provided in accordance with regulatory requirements. Manifest to include emergency contact information, an inventory of hazardous materials and a site plan. Manifest to be provided in a location near the main site entrance.	As mentioned in Addendum B , a Draft Site DG Manifest (including a Draft Site Plan) has been developed for the proposed Narngulu DG compound. The Draft Manifest is provided in Attachment 1 and hard copies will be available in the EICs at the Narngulu site entrance and outside the proposed DG compound.	✓	Add. A (Photos 2 & 18), Add. B, Att. 1 (Site DG Manifest) & Att. 2 (DGRA)
Placarding - stores	AS/NZS 5026 Cl. 10.4.1 & AS 4452 Cl. 10.4	Stores to be placarded in accordance with regulatory requirements, e.g. ADG Code & DG Regs. (i.e. r. 70 & Schedule 4). Placards to be legible and reflect actual storage situation.	As detailed under AS/NZS 5026 Cl. 4.10.2 in Table C.6 above, appropriate package store DG placards / diamonds will be displayed on the AIP Freight Container (Store PS2) at the proposed Narngulu DG compound.	✓	Table C.6, Add. A (Photos 3, 10 & 18) & Att. 2 (DGRA)
Signs and notices / other signage	AS/NZS 5026 Cl. 4.10.2 (a) & 10.4.2(a)	Store to display a warning sign to prohibit smoking and exclude other ignition sources, e.g. "DANGER: NO SMOKING, NO IGNITION SOURCES".	Appropriate warning signage will be displayed around the proposed Narngulu DG compound stating "DANGER – NO SMOKING, NO IGNITION SOURCES".	✓	Add. A (Photos 1, 2, 11, 14 & 21) & Att. 2 (DGRA)
	AS/NZS 5026 Cl. 4.10.2 (b) & 10.4.2(b)	Store to display a warning sign to restrict entry, e.g. "WARNING - RESTRICTED AREA, AUTHORISED PERSONNEL ONLY".	Appropriate warning signage, i.e. "RESTRICTED AREA – AUTHORISED PERSONNEL ONLY" will be displayed on the security fencing around the proposed Narngulu DG compound.	✓	
Management of leaks and spills	AS/NZS 5026 Cl. 10.5 / 10.6 & AS 4452 Cl. 10.5	Prevent leaks and spills from occurring and clean up action to be initiated immediately. Adequate spill clean-up equipment and materials (including chemicals for neutralizing spills, where applicable, and absorbent materials) to be provided in DG storage and handling areas. EP to be implemented and consideration given to notifying emergency services.	<i>Refer to Table B.3 in Addendum B above.</i>	✓	Add. B

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Table C.13 Fire Protection

Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
General considerations	AS/NZS 5026 Cl. 11.2	Some Class 4 DGs may react violently with water and may generate flammable gas or dust and toxic gases. Run-off from fires may be hazardous to people and the environment.	Based on the SDS, AIP blankets can react with moisture / water to generate a toxic and flammable gas (PH ₃) which may ignite spontaneously. AIP is also classified as very toxic to aquatic life.	✓	Att. 3 (SDS)
	AS 4452 Cl. 11.2	Consideration to be given to reaction of chemical with water or other chemicals; potential to give off toxic fumes / smoke; and run-off from fires / firewater.			
HAZCHEM	ADG Code	Based on the SDS and ADG Code, the HAZCHEM code for AIP is '4WE': '4' – Dry agent. Water MUST NOT be allowed to come into contact with the product. 'W' – Risk of violent reaction or explosion. Liquid-tight chemical protective clothing and breathing apparatus required. Contain. 'E' – Public safety hazard may exist outside the immediate area. Evacuation to be considered.	Based on the SDS, dry chemical powder and carbon dioxide (CO ₂) should be used for fighting fires involving AIP, and water MUST NOT be allowed to come into contact with the product. There will be several 9 kg dry chemical powder FEs provided inside the proposed Narngulu DG compound, which could be used for fighting small fires involving AIP. There will also be a FHR installed inside the proposed DG compound, as well as a deluge water sprinkler system in Store PS1, to cool down gas cylinders in the event of a fire (<i>refer to Table F.9 in Addendum F</i>). However, water should not be used for AIP and appropriate warning signage will be displayed on Store PS2.	✓	Add. A (Photos 3, 4, 9, 15, 18, 19, 27 & 28 & DWG. 2025-307-0575 & 251011-LAY / BLK-0001), Att. 2 (DGRA) & Att. 3 (SDS)
Fire protection requirements	AS/NZS 5026 Cl. 11.3.1 (a)	Where Division 4.1 or 4.2 DGs have a Class 3 SR, the fire protection requirements of AS 1940 shall apply.	N/A – The AIP blankets to be stored and handled in Store PS2 within the proposed Narngulu DG compound are a Division 4.3 DG with a SR of 6.1 (not a Class 3 SR).	N/A	Att. 1 (Site DG Manifest) & Att. 3 (SDS)
	AS 4452 Cl. 11.3.2(b)	Where toxic substance has a Class 3 SR, the fire protection requirements of AS 1940 to apply.			
	AS/NZS 5026 Cl. 11.3.1 (c) & AS 4452 Cl. 11.3.2(a)	Firefighting equipment designed, installed, operated, tested and maintained according to relevant AS and any other regulatory requirements.	Firefighting equipment (e.g. FEs and FHR) to be installed within the proposed Narngulu DG compound has been designed, and will be installed and operated, as per the relevant AS (e.g. AS 2444 and AS 2441). Firefighting equipment will be inspected and serviced / maintained 6-monthly (as per AS 1851) by a specialist contractor (Mitchell & Brown Fire Services).	✓	Att. 2 (DGRA)
	AS/NZS 5026 Cl. 11.3.1 (d) & AS 4452 Cl. 11.3.2(c)	All firefighting equipment to be readily accessible at all times.	The dry powder FEs and FHR inside the proposed Narngulu DG compound will be clearly identified by signage and easily accessible. As it is unlikely that the FHR could be safely accessed in a fire, a deluge water sprinkler system will be installed inside Store PS1 (<i>although not relevant to Store PS2</i>).	✓	Add. A (Photos 3, 4, 9, 15, 19, 27 & 28 & DWG. 251011-LAY / BLK-0001), Add. E & Att. 2 (DGRA)

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Fire protection requirements (cont'd)	AS/NZS 5026 Cl. 11.3.1 (e) & AS 4452 Cl. 11.3.2(d)	Firefighting connectors / booster connections compatible with local fire authority.	N/A - There are no fire hydrants (FHs) installed at the CBH Narngulu site and, as stated previously, water should not be used to fight fires involving AIP stores.	N/A	Site Inspection & Att. 2 (DGRA)
	AS/NZS 5026 Cl. 11.3.1 (f) & AS 4452 Cl. 11.3.2(g)	Portable fire extinguishers installed in accordance with AS 2444.	The portable dry chemical powder FEs to be provided inside the proposed Narngulu DG compound will be installed in accordance with AS 2444 and, as stated above, will be inspected / maintained every 6 months by a specialist contractor (Mitchell & Brown Fire Services).	✓	Add. A (Photos 3, 4, 15 & 19) & Att. 2 (DGRA)
	AS/NZS 5026 Cl. 11.3.1 (g) & AS 4452 Cl. 8.3.2(f)	Firefighting media to be compatible with the Class 4 / toxic substances stored.	As discussed under 'HAZCHEM' above, according to the SDS, dry chemical powder is a compatible media for fighting fires involving AIP. However, water should not be used, and appropriate warning signage ("IN CASE OF FIRE, DO NOT USE WATER") will be displayed on Store PS2.	✓	Add. A (Photos 3, 10 & 18) & Att. 3 (SDS)
	AS 4452 Cl. 11.3.2 (e)	Pressurised water or CO ₂ type FEs not to be kept within 30 m of storage areas for cyanide compounds.	N/A – The AIP Freight Container (Store PS2) within the proposed Narngulu DG compound will contain AIP blankets and not cyanide compounds.	N/A	Att. 1 (Site DG Manifest) & Att. 3 (SDS)
	AS 4452 Cl. 11.3.2 (h)	SCBA to be used when approaching a fire involving toxic substances.	As per Section 12.2 of the Protect Grain Procedure, SCBA must be worn when approaching a fire involving toxic substances / gases and/or an uncontrolled toxic gas release with concentrations greater than 15 ppm. However, in the unlikely event of a large fire impinging on the proposed Narngulu DG compound, the area would be evacuated and DFES contacted to manage the emergency.	✓	Protect Grain Procedure
Equipment compatibility	AS/NZS 5026 Cl. 11.3.2	Fire protection system to be compatible with the DGs stored and local fire authority equipment at essential interfaces.	As above, the FEs inside the proposed Narngulu DG compound will be compatible with the AIP blankets stored. However, water (e.g. the FHR) is not compatible and should not be used, and appropriate warning signage will be displayed on Store PS2.	✓	Add. A (Photos 3, 9, 10 & 18), Att. 2 (DGRA) & Att. 3 (SDS)
Location of firefighting equipment	AS/NZS 5026 Cl. 11.3.3	Firefighting equipment to be located so it is reasonably adjacent to the risk and can be easily and safely accessed in an emergency.	As above, the dry powder FEs to be installed inside the proposed Narngulu DG compound will be easily and safely accessible in the event of a small fire, however, the FHR may not and, hence, a deluge water sprinkler system will be installed within Store PS1 (<i>although not relevant to Store PS2</i>).	✓	Add. A (Photos 3, 4, 9, 15, 19, 27 & 28 & DWG. 251011-LAY / BLK-0001) & Att. 2 (DGRA)

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
System integration	AS/NZS 5026 Cl. 11.3.4	Fire protection equipment to be an independent system or integrated with other fire protection systems.	The FEs, FHR and deluge water sprinkler system to be provided for the proposed Narngulu DG compound will be independent and not integrated with other fire protection systems.	✓	Add. A (Photos 3, 4, 9, 15, 19, 27 & 28 & DWG. 251011-LAY / BLK-0001) & Att. 2 (DGRA)
Weather protection	AS/NZS 5026 Cl. 11.3.5	Firefighting equipment susceptible to corrosion or weather to be protected by a sheltered location or protective enclosure.	The dry chemical powder FEs and FHR inside the proposed Narngulu DG compound will be provided with plastic covers for weather protection. The valves and controls for the water sprinkler system will be located in a cabinet within the Vehicle Parking Shelter, which will provide weather protection.	✓	Add. A (Photos 3, 4, 9, 15, 19 & 27) & Att. 2 (DGRA)
Labelling of firefighting equipment	AS/NZS 5026 Cl. 11.3.6	All firefighting equipment to be clearly marked or labelled as per the relevant AS.	The FEs and FHR provided inside the proposed Narngulu DG compound will be appropriately labelled and clearly identified with signage.	✓	
Impact protection	AS/NZS 5026 Cl. 11.3.8	Firefighting equipment, piping and valves to be adequately supported and protected against impact (e.g. vehicles and projectiles).	The location of the firefighting equipment (e.g. FEs, FHR and deluge water sprinkler system) within a fenced DG compound, as well as the installation of bollards inside the compound, will adequately protect it from potential impact damage.	✓	Add. A (Photos 2, 3, 4, 9, 15 & 19)
Metallic powders	AS/NZS 5026 Cl. 11.4	<p>Metallic powders can react violently with water, burn fiercely and generate flammable and toxic gases.</p> <p>A notice stating water should not be used and a "USE NO WATER" supplementary fire symbol to be clearly displayed in the storage area.</p>	As stated under Cl. 4.2.2 (d) in Table C.6 above, AIP can react violently with moisture / water to generate flammable and toxic PH ₃ gas (although this highly unlikely due to the nature of the packaging for the AIP blankets). Although AIP is not strictly a metallic powder, signage will be displayed on the outside of the AIP Freight Container (Store PS2) stating "IN CASE OF FIRE, DO NOT USE WATER" and including a "Use No Water" supplementary fire symbol.	✓	Add. A (Photos 3, 10 & 18) & Att. 3 (SDS)
Calcium carbide	AS/NZS 5026 Cl. 11.5	Clause provides specific firefighting requirements related to calcium carbide.	N/A – Calcium carbide will not be stored in the AIP Freight Container (Store PS2) within the proposed Narngulu DG compound.	N/A	Att. 1 (Site DG Manifest)
Action in the event of fire	AS/NZS 5026 Cl. 11.6 & AS 4452 Cl. 11.4	Emergency plan to include action in the event of a fire.	Fire and spill scenarios associated with AIP storage and handling at the proposed Narngulu DG compound will be covered in a new EP to be developed for the site (<i>refer to SHARE Action ACT-37372</i>).	✓	Add. B, Att. 2 (DGRA) & CBH SHARE System

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Table C.14 Waste Storage and Disposal

Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Storage of wastes	AS/NZS 5026 Cl. 12.2	Facilities to be provided for storage of wastes and items contaminated with Class 4 DGs. Waste packages to be clearly marked.	As detailed in Addendum D below, there will be a dedicated Waste Storage Area (Store PS3) in the proposed Narngulu DG compound for storage of spent AIP blankets and other wastes. This shed / smartlocker will be clearly marked "CAUTION – Waste Storage Area" and provided with appropriate DG placarding / signage.	✓	Add. A (Photos 4, 16, 19 & 20) & Add. D
	AS 4452 Cl. 12.2	Facilities to be provided for storage of wastes and items contaminated with toxic substances. Waste packages to be clearly marked.			
Items for disposal	AS/NZS 5026 Cl. 12.3	Correct disposal of Class 4 containers, residues, and contaminated materials, empty containers and washings / chemical treatment products used for cleaning empty containers.	<p>As mentioned previously, AIP blankets will be stored in gas-tight foil pouches inside steel drums in a dedicated freight container (Store PS2) within the proposed Narngulu DG compound. When required for use, the drums will be taken out of the store and taken to the point of use. Only the quantity of blankets required for the fumigation will be taken and, if a full drum is not required, the blankets in their foil pouches will be removed and placed in another drum. The original AIP drum will be returned to Store PS2 and the number of blankets remaining clearly written on the drum (<i>refer to Section 13.10.1 of the CBH 'DG and Chemical Management Plan'</i>).</p> <p>Spent blankets, empty drums and empty foil pouches will be taken back to site. The empty drums will be stored inside Store PS2 or PS3. Spent AIP blankets will be stored in raised, open steel cages inside Store PS3 and the quantity recorded on an 'AIP Residue Log'. Empty foil packaging should no longer be stored in garbina bags (combustible) within Store PS3 and, based on discussions with Fintran, should be placed in the open steel cages with the spent AIP blankets.</p> <p>As detailed below, spent AIP blankets and empty foil pouches will be routinely collected by the supplier (Fintran). The empty steel drums should be collected and recycled by Fintan's contractor (Waste Wise), rather than re-use or disposal at landfill. The requirements for management of AIP wastes are detailed in Section 13.12 of the CBH 'DG and Chemical Management Plan'.</p> <p>Appropriate DG placarding will be provided on the outside of the Waste Storage Area (Store PS3) to warn that it contains Division 4.3 (SR 6.1) waste.</p>	✓	Add. A (Photos 2, 3, 4, 6, 7, 10, 16, 17, 18, 19 & 20) & DG and Chemical Management Plan
	AS 4452 Cl. 12.3	Appropriate waste disposal of toxic residues, spilled toxic substances, empty storage containers and contaminated materials (e.g. spill clean-up equipment / materials that that cannot be returned to service).			

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Pre-disposal treatment of empty containers	AS/NZS 5026 Cl. 12.4.1	Except for Division 4.3 DGs, prior to disposal, empty containers for Class 4 DGs to be decontaminated by: triple rinsing with an appropriate solvent (washings added to material for use or collected for disposal) or chemical neutralization.	N/A – The AIP blankets to be stored in the AIP Freight Container (Store PS2) within the proposed Narngulu DG compound are a Division 4.3 DG with a Division 6.1 SR.	N/A	Att. 1 (Site DG Manifest) & Att. 3 (SDS)
	AS 4452 Cl. 12.4	Empty containers for toxic substances to be rendered safe / decontaminated by triple rinsing with an appropriate solvent; or chemical neutralisation. Except when containers will be refilled with same toxic substance, labels to be removed or destroyed. Containers not for re-use to be drained, and punctured / crushed to prevent re-use.	As stated above, spent AIP blankets and empty foil pouches will be collected by the supplier (Fintran) for appropriate treatment and disposal by a licensed waste management contractor. Section 13.12 of the CBH 'DG and Chemical Management Plan' details the requirements for safe disposal of the empty AIP containers, i.e. collection and recycling by Waste Wise.	✓	Att. 3 (SDS) & DG and Chemical Management Plan
Disposal treatment for Division 4.3 DGs	AS/NZS 5026 Cl. 12.4.2	Where permitted by local environmental authority, empty Division 4.3 containers should be decontaminated by exposing the residual dust to atmospheric water vapour and allowing gas evolved to disperse by natural ventilation. Except when containers will be refilled with same substance, labels to be removed or destroyed, and containers crushed so that they cannot be re-used. SDS to be consulted for advice on decontamination and disposal of empty containers.			
Methods of disposal	AS/NZS 5026 Cl. 12.5 & AS 4452 Cl. 12.5	All hazardous substances to be disposed of by a method that renders it no longer hazardous. Relevant SDS, local waste disposal authority, environmental protection authority (EPA) and health department (as appropriate) to be consulted on acceptability of proposed methods of disposal.			



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Table C.15 Areas of Non-Conformance and Action Plan

No.	Description	Action Plan	Actionee	Due date	Date Completed	Actionee Comments
-	-	-	-	-	-	-

Refer to SHARE Actions ACT-37372 and ACT-18536.

Compliance Check Summary

This **proposed** – Flammable Solids (Division 4.3, SR 6.1) Package Store - **complies with** AS/NZS 5026 - 2012 and AS 4452-2025.

Compliance is subject to CBH implementing commitments based on the SHARE Actions outlined within this checklist.

Name of assessor: Paul Hathway

Date: 08/05/2026

Signature: _____



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ADDENDUM D

ALP WASTE STORAGE AREA (STORE PS3)



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Table D.1 Storage and Accreditation Details

Storage No:	Proposed Narngulu DG Compound – AIP Waste Storage Area (Store PS3)		
Material stored			
UN No.	1397		
shipping name	ALUMINIUM PHOSPHIDE		
common name	Aluminum phosphide (AIP)		
Division (SR) / PG	Class 4.3 (6.1) / PG I		
Storage quantity	<p>Typical maximum storage quantity of spent AIP blankets in Store PS3 will be 1,000 kg.</p> <p>Maximum total storage quantity of AIP in the proposed Narngulu DG compound (<i>for DG licensing</i>) will be 2,000 kg, which includes new AIP blankets kept within Store PS2 – refer to Addendum C.</p>		
Other details	<p>Store PS3 will be a shed / smartlocker for storage of spent (used) AIP blankets (approx. 95% spent) and some other AIP wastes (e.g. empty foil packaging / pouches). As the spent AIP blankets will not have been completely deactivated (i.e. they may still be generating PH₃ gas), they are still classified as Division 4.3 (SR 6.1) DGs.</p> <p>The spent AIP blankets and empty foil pouches will be stored within raised, open steel cages inside Store PS3. As above, the maximum storage quantity on the proposed Narngulu DG Licence will include new AIP blankets stored in a dedicated freight container (Store PS2) enclosed within the same secured, fenced DG compound (<i>refer to Addendum C</i>).</p> <p>The maximum quantity of Division 4.3 PG I (Category B) DGs to be stored will be greater than 5 kg per 100 m² floor area and greater than 10 kg for Division 6.1 PG I DGs on 'all other premises' (minor storage quantity threshold), hence the storage will be considered a bulk store under AS/NZS 5026 and AS 4452.</p> <p>NOTE: This store will be relocated from West End to the proposed new Narngulu location and, hence, the design / construction is identical.</p>	Auditor / Assessor	Paul Hathway
		Accreditation No.	6IM-106
		Date Assessed	08 May 2026
		Method of Assessment	AS/NZS 5026-2012: The storage and handling of Class 4 dangerous goods was utilised for this assessment as per the requirements of the DG Regs. Additional elements of AS 4452-2025 were also incorporated where applicable, as AIP has a SR of Division 6.1.

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Table D.2 Scope and General

Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Scope	AS/NZS 5026 Cl. 1.1	Standard applies to flammable solids, substances liable to spontaneous combustion, and substances that in contact with water evolve flammable gases that in Australia are classified under the ADG Code as Division 4.1, 4.2 or 4.3, respectively.	AIP is classified as a Division 4.3 (Category B) DG with a Division 6.1 SR under the ADG Code and, therefore, AS/NZS 5026 and AS 4452 standards apply.	✓	Att. 1 (Site DG Manifest) & Att. 3 (SDS)
	AS 4452 Cl. 1.1	Standard applies to DGs that are classified as Division 6.1 in the ADG Code or assigned a Division 6.1 subsidiary risk, except where of Class 2 or where more stringent requirements apply.			

Table D.3 Hazard Identification and Risk Assessment

Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Hazard identification	2.4	Undertake a HAZID assessment or have copies of HAZID reports in place.	A site-wide DGRA has been undertaken for the proposed Narngulu DG compound, as required under r. 48 of the DG Regs (<i>refer to Attachment 2</i>). A Flammable Solids HAZID / RA, complying with the requirements of Section 2 of AS/NZS 5026: 2012, has also been undertaken for the Class 4 DG Stores (PS2 & PS3) within the proposed Narngulu DG compound (<i>refer to Addendum E</i>).	✓	Add. E (Flammable Solids HAZID / RA) & Att. 2 (DGRA)
Risk assessment	2.5	Undertake a risk assessment (quantitative or qualitative) for the identified hazards.			
Risk review	2.6	Review risk assessment if any major changes have been made, incidents occurring and if 5 years have passed.			

Table D.4 Minor Storage

Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Scope of section & minor storage classification	AS/NZS 5026 Cl. 3.2 & Table 3.1	Specifies criteria for 'minor storage' of Class 4 DGs. For Class 4.3 PG I (Category B) substances stored in a laboratory, factory or workshop to be classified as minor storage, the maximum storage quantity in any 100 m ² floor area is 5 kg.	N/A – The AIP Waste Storage Area (Store PS3) within the proposed Narngulu DG compound is not considered a minor store, as the total maximum quantity of Division 4.3 PG 1 (Category B) (SR 6.1) substances to be stored (i.e. ~1,000 kg) exceeds 5 kg (for Division 4.3) and 10 kg (Division 6.1 SR).	N/A	Att. 1 (Site DG Manifest)
	AS 4452 Cl. 3.2	Specifies criteria for 'minor storage' classification for toxic substances and requirements of such storage. For toxic substances of PG I in "all other premises", maximum storage quantity for a minor store is 10 kg			
Precautions applying to minor storage	AS/NZS 5026 Cl.3.3	Clause 3.3 lists requirements for Minor stores of Class 4 DGs.			
	AS 4452 Cl. 3.3 & 3.4	Details precautions / requirements applicable to minor storage of toxic substances.			

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Table D.5 Transit Storage

Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Definition & scope of section	AS/NZS 5026 1.4.70 & 4.11.1	Unopened packages / IBCs stored for not less than 12 hours and not more than 5 consecutive days.	N/A - The AIP Waste Storage Area (Store PS3) within the proposed Narngulu DG compound is not considered a transit store, as the storage time for spent AIP blankets will be greater than 5 days.	N/A	Att. 1 (Site DG Manifest)
	AS 4452 Cl. 1.4.46	Unopened packages / IBCs stored for a time duration of not less than 12 hours and not more than 5 consecutive days.			
Delineation of transit storage areas	AS/NZS 5026 4.11.2	Transit stores of Class 4 DGs deemed separate areas if separated from each other and other storage areas, buildings or amenities by at least 15 m.			
	AS 4452 Cl. 4.2	Transit storage of toxic substances deemed to be separate storage areas if at least 15 m apart.			
Requirements of transit storage	AS/NZS 5026 4.11.3	Clause lists requirements for transit stores of Class 4 DGs.			
	AS 4452 Cl. 4.3	Details requirements applicable to transit storage of toxic substances.			

Table D.6 General Requirements (Class 4)

Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Scope of section	4.1	Section provides general requirements and recommendations for Class 4 DGs stored in quantities greater than minor storage.	As per Table D.4 above, the AIP Waste Storage Area (Store PS3) within the proposed Narngulu DG compound is not considered a minor store and, therefore, Section 4 of AS/NZS 5026 is applicable.	✓	Att. 1 (Site DG Manifest)
Design safety and suitability	4.2.1	Risk assessment to be undertaken considering factors listed in Clause 4.2.1.	As per Table D.3 above, a Flammable Solids HAZID / RA and a site-wide DGRA have been undertaken for the proposed Narngulu DG compound (<i>refer to Addendum E and Attachment 2, respectively</i>).	✓	Add. E & Att. 2 (DGRA)
Operational requirements	4.2.2	(a) High housekeeping standards.	Based on the condition of the store (in its current West End location), good housekeeping standards will be kept inside and around Store PS3 and this will be checked on a weekly basis.	✓	Add. A (Photos 4, 16, 19 & 20), Add. E, Att. 2 (DGRA) & Fintran email (dated 25/03/21)
		(b) Protection from weather, heat, temperature changes.	Spent AIP blankets will be stored in a shed / smartlocker (Store PS3) within the proposed Narngulu DG compound, which will shade them from the sun and also provide adequate ventilation (via small vents in the side walls and a whirlybird vent in the roof). Dedicated temperature control will not be provided, however there have been no previous incidents at CBH related to AIP being exposed to high temperatures.	✓	

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Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Operational requirements (cont'd)	4.2.2	(c) Stock control to avoid prolonged storage.	N/A – Store PS3 within the proposed Narngulu DG compound will contain spent AIP blankets and empty foil pouches, and not new AIP stock. These wastes will be routinely collected by the supplier (Fintran), i.e. when they deliver new stock.	N/A	Add. A (Photos 4, 16, 19 & 20) & Att. 2 (DGRA)
		(d) Metallic powders not stored in areas where water ingress is possible.	N/A – Based on the SDS, although AIP is not considered to be a metallic powder, it reacts with water to generate toxic and flammable gas (i.e. PH ₃). However, the design / layout of Store PS3 (e.g. gutter pipe, whirlybird vent and storage of spent AIP blankets within raised, open steel cages), as well as slope of the proposed DG compound slab away from the store, should prevent water ingress (Note – there have been no historical incidents related to this at CBH DG compounds).	N/A	Add. A (Photos 4, 16, 19 & 20), Add. E, Att. 2 (DGRA) & Att. 3 (SDS)
		(e) Routine inspection and testing regime for DGs that require an inhibitor or stabiliser.	N/A – The spent AIP blankets contained within Store PS3 at the proposed Narngulu DG compound will not require the addition of an inhibitor or stabiliser.	N/A	
Emergency provisions	4.2.3	Facility designed to facilitate management of emergency.	The Narngulu site and proposed DG stores will be designed to facilitate emergency management, and ER requirements will be provided in the new Narngulu EP to be developed (<i>refer to SHARE Action ACT-37372</i>).	✓	Add. B, Att. 2 (DGRA) & CBH SHARE System
Hazardous areas	4.2.4	Hazardous area (HA) to not extend beyond boundary.	As mentioned previously, small quantities of spent (approximately 95% spent) AIP blankets and empty foil pouches within Store PS3 will be kept in raised, open steel cages to allow any residual AIP to slowly de-activate. Adequate natural ventilation will be provided via small vents in the side and back walls and a whirlybird vent in the roof, which will facilitate dilution and dispersion of any PH ₃ gas generated. Persons accessing the proposed Narngulu DG compound (including Store PS3) will be required to wear a personal gas monitor (e.g. PAC-8000 or ToxiPro), which would alert them to any PH ₃ gas concentrations above 0.3 ppm (Note – lower explosive limit (LEL) for PH ₃ is 17,900 ppm). Based on gas dispersion modelling undertaken for CBH's KGT site, a HA associated with Store PS3 extending beyond the site boundary, or even existing within the proposed Narngulu DG compound, is not considered possible.	✓	Add. A (Photos 2, 4, 12, 16, 19 & 20), Add. E & Att. 2 (DGRA)



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Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Separation distances	4.2.5	Separation distances to property boundary, protected places, ignition sources, combustible materials and other DGs to be in accordance with Table 5.1.	For details related to separation distances for the AIP Waste Storage Area (Store PS3) within the proposed Narngulu DG compound, refer under Cl. 5.4.2 in Table D.7 below.	✓	Table D.7
Electrical installations and equipment	4.3	Equipment and installation in accordance with AS/NZS 3000 for HAs classified under AS 60079.	As discussed under Cl. 4.2.4 above, it has been demonstrated (through gas dispersion modelling undertaken for CBH's KGT site) that it is not possible for a HA associated with Store PS3 to exist within or outside the proposed Narngulu DG compound. Regardless, there will be no fixed electrics within Store PS3, and no combustion engines or electric forklifts will be used inside the store.	✓	Add. E & Att. 2 (DGRA)
Internal combustion engines	4.4	Internal combustion engines used in HAs must be in accordance with AS 2359.			
Lighting	4.5(a)	Sufficient light for safe work to be conducted.	Store PS3 at the proposed Narngulu DG compound will not be provided with any fixed lighting (inside), as the store (and compound) will not normally be accessed outside daylight hours. However, the proposed DG compound will be provided with some motion-activated security lighting and a light within the Vehicle Parking Shelter. There are some floodlights to the north-west of the proposed Narngulu DG compound near the weighbridges, as well as some floodlights around the site office / amenities.	✓	Add. A (Photos 2, 4, 9, 16, 20 & 30) & Att. 2 (DGRA)
	4.5(b)	Sufficient lighting on internal site roads.			
Restricted usage	4.6	Only Class 4 DGs being stored and handled at store, unless compatible DGs.	As per Table D.1 above, only spent AIP blankets (Class 4 DG) and other wastes (e.g. empty foil pouches) will be stored within Store PS3. Class 2 gas cylinders will also be stored within the proposed Narngulu DG compound, however, based on the SDSs, these are not incompatible with AIP.	✓	Att. 1 (Site DG Manifest) & Att. 3 (SDS)
Firewalls and vapour barriers	4.7	Any firewall to be of a FRL 240/240/240 rating. Vapour barriers to be impervious and non-combustible.	N/A – No firewalls or vapour barriers will be installed within the AIP Waste Storage Area (Store PS3) at the proposed Narngulu DG compound.	N/A	Add. A (Photos 4, 16, 19 & 20)
Explosion venting	4.8	Explosion vents to be installed if DGs are stored in an enclosed area and are capable of producing flammable gases, vapours or combustible dusts. Explosion vent to: (a) provide relief when internal pressure exceeds 1 kPag pressure; (b) be a panel on a wall or free opening; (c) no installed in a store enclosed within another building; and each storage area within a building to be separately vented.	N/A – An internet search regarding explosion venting only stressed the requirement to provide adequate ventilation to prevent build-up of flammable gases and was not prescriptive on design details for explosion venting. The AIP Waste Storage Area (Store PS3) within the Proposed Narngulu DG compound will be a shed / smartlocker with small vents in the side and back walls and a whirlybird vent in the roof. As adequate ventilation will be provided, no explosion venting is considered necessary for the store.	N/A	

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Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Temperature controls	4.9	<p>Roof insulation and vents to be provided (to prevent build-up of dangerous vapours), and electrical temperature regulating equipment to be outside and at least 3 m away from store opening.</p> <p>Maximum safe storage temperature noted on outside of store.</p> <p>Alternative cooling devices available.</p> <p>Temperature indication with high temperature alarm.</p> <p>Keyed switches or switch board to prevent electricity supply from being turned off.</p>	<p>As stated previously, Store PS3 will be provided with adequate ventilation (i.e. small vents in the side and back walls and a whirlybird vent in the roof). The SDS for AIP blankets recommends storage in a cool, dry and well-ventilated area away from direct sunlight, however Section 10 of the SDS states the storage should preferably be <30°C. The supplier (Fintran) stated that temperature control is not required for their product and that current storage conditions at CBH's DG compounds are suitable and, for transparency / traceability reasons, Fintran provided this advice in writing (<i>refer to close-out of SHARE Action ACT-18536</i>). Note - there have been no previous incidents at CBH sites related to overheating of AIP blankets.</p>	✓	<p>Add. A (Photos 4, 16, 19 & 20), Add. E, Att. 2 (DGRA), Att. 3 (SDS) & CBH SHARE System</p>
Signs and notices	4.10.2	(a) Signs at the entrance to the store: "DANGER – NO SMOKING, NO NAKED FLAMES".	<p>Although not provided on the outside of the AIP Waste Storage Area (Store PS3), there will be warning signs on the fence of the proposed Narngulu DG compound, and on the front of the Gas Cylinder Store (Store PS1), stating "DANGER - NO SMOKING, NO IGNITION SOURCES".</p>	✓	<p>Add. A (Photos 11, 14 & 21) & Att. 2 (DGRA)</p>
		<p>(b) Class label and SR label (if any). Placards in accordance with the regulations (i.e. DG Regs, r. 70 & Schedule 4)</p> <p style="text-align: center;">Required placard</p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div>	<p>Appropriate package store DG placards for AIP (i.e. Division 4.3 (Dangerous When Wet) and Division 6.1 (Toxic) DG diamonds), will be displayed on the outside of the proposed AIP Waste Storage Area (Store PS3), as per the requirements of r. 70 and Schedule 4 (Cl. 5) of the DG Regs. To aid in identification of the DG stored, a sign stating "ALUMINIUM PHOSPHIDE" will also be displayed on the outside of Store PS3.</p> <p>DG diamonds will also be displayed on the main entrance gate to the proposed Narngulu DG compound.</p>	✓	<p>Add. A (Photos 2, 4, 12, 16 & 19) & Att. 2 (DGRA)</p>
Control of access	4.10.1	Installation to be properly secured against unauthorised access.	<p>As per Addendum B, there is no security fencing around the Narngulu site, only ring lock fence. The proposed DG compound, in which Store PS2 will be located, will be a secured fenced area with locked gates (and restricted key access). Store PS3 will also be locked when not in use.</p>	✓	<p>Site Inspection, Add. A (Photos 2, 4, 16 & 19), Add. B & Att. 2 (DGRA)</p>
Ignition sources	4.12	Vehicles to be suitable for the HA given in AS/NZS 60079 or a hot work permit must be issued.	<p>As per Cl. 4.2.4 above, it has been confirmed (through gas dispersion modelling undertaken for CBH's KGT site) that a HA associated with Store PS3 could not exist within or outside the proposed Narngulu DG compound.</p>	✓	<p>Att. 2 (DGRA)</p>

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Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Storage in tanks	4.13	Section details requirements for storage and handling of Class 4 DGs in tanks.	N/A – The spent AIP blankets at the proposed Narngulu DG compound will be stored in open containers (e.g. open steel cages) inside a shed / smartlocker (Store PS3), and not within tanks.	N/A	Add. A (Photos 4, 16, 19 & 20)
Bunds and compounds for tanks	4.14	Section details requirements for bunds and compounds for tanks containing Class 4 DGs.			

Table D.7 Package Storage and Handling Areas

Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Scope of section	AS/NZS 5026 Cl. 5.1	Section sets out general requirements for storage and handling of Class 4 DGs in quantities greater than those classified as minor storage in Section 3.	Spent AIP blankets within the proposed Narngulu DG compound will be stored in raised, open steel cages inside a shed / smartlocker (Store PS3), in quantities greater than those classified as minor storage. Although the spent AIP blankets would not strictly fit the classification of a packaged DG, Section 5 of AS/NZS 5026 and Section 6 of AS 4452 were still deemed to be applicable.	✓	Add. A (Photos 4, 16, 19 & 20), Att. 1 (Site DG Manifest) & Att. 2 (DGRA)
	AS 4452 Cl. 6.1	Section applies to storage and handling of toxic substances in packages and intermediate bulk containers (IBCs) with a capacity of less than 1.5 m ³ .			
Types of stores	AS/NZS 5026 Cl. 5.2 & AS 4452 Cl. 6.2	<p>A package store may be:</p> <ul style="list-style-type: none"> • open air storage, if appropriate; • outdoor area with security fence; • freestanding, roofed building; • roofed area or room external to another building but attached to an external wall of that building; • room, enclosure or area within a building, one wall which is part of the external wall of the building; or • fire-resistant or indoor storage cabinet. 	It is proposed that spent AIP blankets and other wastes (e.g. foil packaging) will be stored at the Narngulu site within a shed / smartlocker (Store PS3), located inside a secure, fenced DG compound.	✓	Add. A (Photos 4, 16, 19 & 20) & Att. 2 (DGRA)
Location of store - General	AS 4452 Cl. 6.3.1	Store to be located above the highest recorded flood level, away from accumulations of flammable / combustible materials, and not within close proximity to watercourses, open stormwater channels, houses, schools, hospitals and similar congested areas.	<p>The concrete slab for the proposed Narngulu DG compound will be raised slightly to prevent flooding, and a concrete apron provided. The concrete slab of the DG compound will slope to an HDPE-lined detention basin to the south-east.</p> <p>Store PS3 will be located away from accumulations of flammable / combustible materials and will not be in close proximity to any watercourses, open stormwater channels, public places / offsite protected works.</p>	✓	Add. A (Photos 4, 16, 19 & 20 & DWG. 307-ENG-CI-DAL-0030 & 2025-307-0575)
Separation and segregation	AS/NZS 5026 Cl. 5.4.1	Where the DG has a SR, reference to be made to relevant AS for those risks and greatest separation and segregation distances applied.	AIP is classified as a Division 4.3 DG with a Division 6.1 SR and, hence, the separation distances in AS/NZS 5026 and AS 4452 have been identified below to ensure compliance with the more stringent requirements.	✓	Att. 1 (Site DG Manifest) & Att. 3 (SDS)

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Separation and segregation (cont'd)	AS/NZS 5026 Cl. 5.4.2 & Table 5.1	Minimum separation distance of 10 m to the site boundary for Category B DGs in quantities between 250 kg and 2,000 kg. However, as per Note 5 of Table 5.1, the separation distance in Cl. 8.5.2 (i.e. 15 m) takes precedence.	The distance from the AIP Waste Storage Area (Store PS3) at the proposed Narngulu DG compound to the nearest site boundary (west) will be 104 m, which is greater than the 15 m separation distance required by AS/NZS 5026 and 5 m required by AS 4452.	✓	Add. A (DWG. 2025-307-0572 / 0573 & 2025-307-0575)
	AS 4452 Cl. 2.4.1, Cl. 2.4.2, Cl. 6.3.2 & Table 1 (A to C)	Minimum separation distance of 5 m to the premise boundary for package stores with maximum storage quantity of ≤1 t of PG I toxic substances where packages are opened or filled. Also, as per Cl. 1.9.1, a minimum separation distance of 5 m applies for PG I substances.			
	AS/NZS 5026 Cl. 5.4.2 & Table 5.1	Minimum separation distance of 10 m to protected places for Category B DGs in quantities between 250 kg and 2,000 kg. However, as per Note 5 of Table 5.1, the separation distance in Cl. 8.5.2 (i.e. 15 m) takes precedence.	The distance from the AIP Waste Storage Area (Store PS3) at the proposed Narngulu DG compound to the nearest on-site protected place (Pest Control Shed) will be 25 m, which is significantly greater than the 15 m separation distance required by AS/NZS 5026 and 10 m required by AS 4452.	✓	Add. A (Photos 1, 2 & 39 & DWG. 2025-307-0573 / 0575), Add. F, Att. 2 (DGRA) & DEMIRS / CBH emails dated 17/04/20 (STORE-1383563609-244314)
	AS 4452 Cl. 2.4.1, Cl. 2.4.2, Cl. 6.3.2 & Table 1 (A to C)	Minimum separation distance of 10 m to protected places for package stores with maximum storage quantity of ≤1 t of PG I toxic substances where packages are opened or filled. For an onsite protected place, this may be reduced to 5 m subject to appropriate risk identification, assessment and control.	It should be noted that, as per email discussions with DEMIRS (now LGIRS) in April 2020, it was considered that the proposed Gas Cylinder Store (Store PS1) will be part of the same onsite DG storage compound and, therefore, not a 'protected place' under the definitions provided under Cl. 1.4.37 and 1.4.47 of AS/NZS 5026. However, separation of Store PS1 and the AIP storages (Stores PS3 and PS2) is addressed under Cl. 4.4.2 in Table F.6 of Addendum F below.		
	AS 4452 Cl. 2.4.3.2	Foodstuffs, containers for foodstuffs, products for human or animal consumption / application and medical / veterinary materials not to be kept in the same room / store as PG I toxic substances.	There will be no foodstuffs, containers for foodstuffs, products for human or animal consumption / application and medical / veterinary materials stored within Store PS3 at the proposed Narngulu DG compound.	✓	Add. A (Photos 4, 16, 19 & 20 & DWG. 2025-307-0573 / 0575)
	AS/NZS 5026 Cl. 5.4.2.4	Separation from foodstuffs, foodstuff containers, products for human or animal consumption / application and medical / veterinary materials by at least 5 m. However, as per Note 5 of Table 5.1, the distance in Cl. 8.5.2 (i.e. 15 m) takes precedence.	There will be no foodstuffs, containers for foodstuffs, products for human or animal consumption / application and medical / veterinary materials inside or within 15 m of the AIP Waste Storage Area (Store PS3) at the proposed Narngulu DG compound.	✓	
AS/NZS 5026 Cl. 5.4.2.4	Class 4 DGs contained within a fire-resistant cabinet to be separated from any potential ignition sources by at least 3 m.	N/A – Spent AIP blankets and other wastes (e.g. foil packaging) will be stored in raised, open steel cages within a shed / smartlocker (Store PS3), and not in a fire-resistant cabinet.	N/A	Add. A (Photos 4, 16, 19 & 20) & Att. 2 (DGRA)	

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Separation and segregation (cont'd)	AS/NZS 5026 Cl. 5.4.2.5	(b) For Class 4 DGs capable of generating flammable gas, the requirements of AS/NZS 60079 series to apply.	As per Cl. 4.2.4 in Table D.6 above, based on gas dispersion modelling undertaken for CBH's KGT site, it is not possible that a HA associated with Store PS3 would exist within or outside the proposed Narngulu DG compound.	✓	Add. A (Photos 4, 16, 19 & 20) & Att. 2 (DGRA)
		(c) All other Class 4 DG stores to be separated from any potential ignition sources by at least 8 m.	There will be no fixed ignition sources located inside, or within 8 m of, Store PS3 at the proposed Narngulu DG compound.		
	AS/NZS 5026 Cl. 5.4.3	Segregation of Class 4 DGs from incompatible substances or substances with which they may react dangerously by: (a) at least 5 m where packages are kept closed; (b) at least 8 m where containers are opened; and (c) kept in separate compounds that do not share a common drainage system.	As above, Store PS3 will only contain spent AIP blankets and empty foil pouches in raised, open steel cages. Although other DGs will be stored within the same proposed DG compound, these will be new AIP blankets in closed packages (Store PS2) and Class 2 (predominantly Division 2.3) gas cylinders (Store PS1). Store PS1 will be located approximately 12 m away from Store PS3 and the gases to be stored are not incompatible with / will not react dangerously with spent AIP blankets (based on SDSs). However, as per Table D.13 below, the firefighting requirements for the AIP stores (PS2 / PS3) and Store PS1 are very different and incompatible.	✓	Add. A (Photos 3, 4, 6, 7, 10, 14, 16, 18, 19, 20, 21, 22 & 23 & DWG. 2025-307-0575), Add. F, Att. 2 (DGRA), Att. 3 (SDS) & CBH SHARE System
	AS 4452 Cl. 1.4.18, Cl. 2.4.3.1 & Cl. 6.3.2.2	Incompatible substances to be kept in separate compounds; or segregated by at least 5 m. Substances that can react dangerously to be segregated by at least 5 m and not kept in the same compound or share a common drainage system. Even if not incompatible and will not react dangerously, DG storage areas to be separate for housekeeping reasons.	Stores PS1, PS2 and PS3 within the proposed Narngulu DG compound will be appropriately separated to allow good housekeeping.		
AS 4452 Cl. 2.4.3.4	Minor quantities of Division 6.1 / SR 3 and Class 3 / SR 6.1 may be stored with other Class 3 DGs, as long as the store also meets the relevant requirements of AS 1940.	N/A – The AIP Waste Storage Area (Store PS3) within the proposed Narngulu DG compound will only contain spent AIP blankets (Division 4.3, SR 6.1) and no DGs of Class 3 or SR 3.	N/A	Add. A (Photos 4, 16, 19 & 20) & Att. 1 (Site DG Manifest)	
Construction of / General requirements for, package stores	AS/NZS 5026 Cl. 5.5.1 & AS 4452 Cl. 6.4.1	(a) Stores to be located on ground floor with immediate access for emergency personnel.	All DG stores within the proposed Narngulu DG compound will be located at ground level (although the ground / concrete slab will be raised slightly to prevent flooding and a concrete apron provided) and there will be immediate / easy access for emergency personnel (once the compound gate is unlocked).	✓	Add. A (Photos 2, 4, 16, 19 & 20 & DWG. 2025-307-0575 & 307-ENG-CI-DAL-0030)
		(b) At least two means of access for stores with a floor area greater than 25 m ² .	N/A – Store PS3 will be a shed / smartlocker with one means of access (front roller door), however, it will have a floor area of only 5.12 m ² (based on dimensions of 3.655 m x 1.4 m).		

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Construction of / General requirements for, package stores (cont'd)	AS/NZS 5026 Cl. 5.5.1 & AS 4452 Cl. 6.4.1	(c) Stores to be designed, constructed and operated to allow for effective housekeeping.	The layout of the proposed AIP Waste Storage Area (Store PS3), i.e. large front roller door and store dimensions, will allow for effective housekeeping.	✓	Add. A (Photos 4, 16, 19 & 20)
		(d) All materials of construction of the store to be non-combustible and resistant to attack by materials stored.	Store PS3 will be a shed / smartlocker comprising a steel frame and corrugated steel sheeting, and raised, open steel cages will be located on a concrete floor. Steel and concrete are non-combustible and resistant to attack by the Division 4.3 DG stored (i.e. spent AIP blankets).	✓	Add. A (Photos 4, 16, 19 & 20) & Att. 3 (SDS)
		(e) Adequate lighting provided as per Cl. 4.5 and Cl. 9.2.4 of AS/NZS 5026 and Cl. 9.2.4 of AS 4452.	As per Table D.6 above, Store PS3 at the proposed Narngulu DG compound will not be provided with any fixed lighting (inside), as the store (and compound) will not normally be accessed outside daylight hours. However, the proposed DG compound will be provided with some motion-activated security lighting and a light within the Vehicle Parking Shelter.	✓	Add. A (Photos 2, 4, 9, 19 & 20) & Att. 2 (DGRA)
		(f) Adequate natural or mechanical ventilation to be provided for storage and handling areas. Mechanical ventilation to be as per AS 1668.2.	Adequate natural ventilation will be provided for the proposed AIP Waste Storage Area (Store PS3) via small vents in the back and side walls and a whirlybird vent in the roof.	✓	Add. A (Photos 4, 16, 19 & 20) & Att. 2 (DGRA)
		(g) Store provided with a means of containing a spill. For toxic liquids of PG I, compound capacity to be 100% of the aggregate volume and for PG II / III liquids, 25% of aggregate volume but, in any case, at least the capacity of the largest container kept.	N/A – The Division 4.3 DGs (spent AIP blankets) within Store PS3 will be in solid form and will be contained within raised, open steel cages. As liquid DGs will not be stored, a dedicated compound / bund is not required.	N/A	Add. A (Photo 20), Att. 2 (DGRA) & Att. 3 (SDS)
		(h) Areas used for decanting to have floors able to contain a spill or divert it to a compound within the premise boundary.	N/A – Spent AIP blankets are a solid Division 4.3 waste that will be stored within raised, open steel cages and, hence, no decanting will take place in Store PS3 at the proposed Narngulu DG compound.	N/A	
		(i) Packages to be stored so they cannot fall and cause spillage outside the compound.	Spent AIP blankets will be stored in raised, open steel cages within a closed shed / smartlocker. Hence, the AIP packages could not fall and cause any spillage outside the store or proposed Narngulu DG compound.	✓	Add. A (Photos 4, 16, 19 & 20) & Att. 2 (DGRA)
		(j) Storages areas to be secured against unauthorised entry.	As per Addendum B above, there is no security fencing around the Narngulu site, only ring lock fence. The proposed DG compound, in which Store PS3 will be located, will be a secure fenced area with locked gates (and restricted key access). Store PS3 will also be locked when not in use.	✓	Add. A (Photos 2, 4, 16 & 19), Add. B & Att. 2 (DGRA)

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Construction of / General requirements for, package stores (cont'd)	AS/NZS 5026 Cl. 5.5.1 & AS 4452 Cl. 6.4.1	(k) Unless designed as spill trays or compounds, racks or shelves to be designed to prevent accumulation or pooling of liquids (l) The layout of shelves / racking to allow clear passage for escape of personnel. Racking to be constructed of compatible material; structurally sound and designed to allow easy access to packages. Permitted loading of racking to be indicated by signage.	N/A – The spent AIP blankets within the Waste Storage Area (Store PS3) at the proposed Narngulu DG compound will be stored in raised, open steel cages located on a concrete floor, and no shelving or racking will be provided.	N/A	Add. A (Photos 4, 19 & 20)
	AS/NZS 5026 Cl. 5.5.1	(m) Where a package store is adjacent to another building, forms part of another building or is enclosed by another building, it should be separated by walls of FRL of at least 240/240/240. The ceiling and floor to have a FRL of at least 180/180/180.	N/A - The AIP Waste Storage Area (Store PS3) will be situated within the proposed Narngulu DG compound, but will be a separate store, i.e. it will not be adjacent to another building, will not form part of another building and will not be enclosed by another building.	N/A	Add. A (Photos 4, 16 & 19 & DWG. 2025-307-0573 / 0575)
		(n) Doors into package store must not open inwards.	Access to Store PS3 will be via a roller door at the front, i.e. there will be no doors that open inwards.	✓	Add. A (Photos 4, 19 & 20)
	AS/NZS 5026 Cl. 5.5.1 (o) AS 4452 Cl. 6.4.1 (m)	Stacking of packages to minimise the potential for stack collapse and damage to packages in lower layers. 205 L drums containing Class 4 DGs not to be stacked more than 3 high and IBCs not more than 2 high.	Spent AIP blankets in Store PS3 will be stored in raised, open steel cages, at ground level within a closed smartlocker, and there will be no stacking of packages. Based on this storage method, there will be no potential for stack collapse or damage to packages in lower layers.	✓	Add. A (Photos 4, 19 & 20) & Att. 2 (DGRA)
	AS/NZS 5026 Cl. 5.5.1 (p) & AS 4452 Cl. 6.4.1 (o)	Where combustible dusts or flammable gases / vapours may be generated and a HA may exist, all electrical equipment to be suitable for use in a hazardous zone (refer AS/NZS IEC 60079.10).	As discussed under Cl. 4.2.4 in Table D.6 above, based on gas dispersion modelling undertaken for CBH's KGT site, a HA associated with Store PS3 could not exist within or outside the proposed Narngulu DG compound.	✓	Att. 2 (DGRA)
	AS 4452 Cl. 6.4.1 (p) & AS/NZS 5026 Cl. 5.5.1 (q)	A safety shower and eyewash facilities complying with AS 4775 and water for washing hands is required within 2 m to 7 m of a store where Class 4 (and SR 6.1) packages are opened (except for Division 4.3 DGs). Where Division 4.3 DGs are stored and handled, locations of safety shower, eyewash and water supply to be determined by risk assessment (taking into account water-reactive properties).	There will be a safety shower / eyewash provided within the proposed Narngulu DG compound, approximately 9 m away from the AIP Waste Storage Area (Store PS3). Given that the spent AIP blankets in Store PS3 will be kept in raised, open steel cages, within a locked shed / smartlocker, the proposed location of the safety shower / eyewash does not pose a significant risk.	✓	Add. A (Photos 4, 9, 16, 19 & 20 & DWG. 2025-307-0575) & Att. 2 (DGRA)

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Construction of / General requirements for, package stores (cont'd)	AS/NZS 5026 Cl. 5.5.1 (r) & AS 4452 Cl. 6.4.1 (q)	Clothes rooms / lockers and eating / drinking areas (e.g. lunchrooms / cribsrooms) to be located away from store.	There will be no clothes rooms / lockers or eating / drinking areas located inside, or within close proximity to, the proposed AIP Waste Storage Area (Store PS3) or associated Narngulu DG compound.	✓	Add. A (Photos 4, 16, 19 & 20 & DWG. 2025-307-0573 / 0575)
	AS/NZS 5026 Cl. 5.5.1 (s)	Freight containers not to be used for storage unless suitably designed or modified to comply with AS/NZS 5026.	N/A - As stated above, the spent AIP blankets will be stored in a shed / smartlocker (Store PS3) within the proposed Narngulu DG compound, and not in a freight container.	N/A	Add. A (Photos 4, 16, 19 & 20)
Bunds and compounds	AS/NZS 5026 Cl. 5.6.1 & 5.6.2	Ability to contain any spill or leakage within the premises to prevent environmental contamination. If Class 4 DGs are liquid or molten, capacity of the compound to be 100% of volume of PG I or PG II substances stored or 25% of volume of PG III, and at least the capacity of the largest container stored. Compound to be impervious to allow spillage recovery, designed to withstand hydrostatic head when full and provided with means of safe access / egress if >1.5 m in height Where an automatic sprinkler is installed, compound capacity to be increased by a volume equal to output of water / foam over 20 mins.	NA – The spent AIP blankets to be kept within Store PS3 will be in solid form and will be contained inside raised, open steel cages. As liquid / molten DGs will not be stored, a compound / bund is not required. No automatic sprinkler system will be installed within Store PS3. In the extremely unlikely event of an incident leading to an AIP spill or generation of phosphorous pentoxide / phosphoric acid, any contaminated run-off from the proposed Narngulu DG compound would be directed (via slope of the concrete slab) to a wastewater collection area (an HDPE-lined bund) outside the compound to the south-east, which will include an isolation point (i.e. PVC pipe with cap).	N/A	Add. A (Photos 4, 16, 19 & 20 & DWG. 2025-307-0575 & 307-ENG-CI-DAL-0030), Add. E, Att. 1 (Site DG Manifest), Att. 2 (DGRA) & Att. 3 (SDS)
	AS/NZS 5026 Cl. 5.6.3	Class 4 DG packages to be set back from the inner edge of the bund by a distance equal to half the stack height or 1 m, whichever is greater.			
Storage in cabinets	AS/NZS 5026 Cl. 5.7	Clause applies to storage of Class 4 DGs in cabinets. Class 4 DGs that are incompatible or may react dangerously not to be stored in the same cabinet.	N/A – The spent AIP blankets will be stored inside raised, open steel cages in a shed / smartlocker (Store PS3) within the proposed Narngulu DG compound, and not in storage cabinets.	N/A	Add. A (Photos 4, 16, 19 & 20) & Att. 2 (DGRA)
Indoor storage cabinets	AS 4452 Cl. 6.4.2	Clause applies to storage of toxic substances in indoor storage cabinets.			
Storage of IBCs	AS/NZS 5026 Cl. 5.8	IBCs of ≤1,500 L capacity that comply with ADG Code may be stored in a package store if not connected to piping or delivery system, have adequate ventilation and are not stacked more than 2 high.	N/A – The spent AIP blankets within Store PS3 at the proposed Narngulu DG compound will be kept inside raised, open steel cages and not IBCs.		

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Storage in freight containers	AS/NZS 5026 Cl. 5.9	Except for transit storage or loading / unloading, Class 4 DGs not to be stored in freight containers unless modified to comply with Section 5.9.	N/A - As stated above, the spent AIP blankets and other AIP wastes (e.g. empty foil pouches) will be stored in a shed / smartlocker (Store PS3) within the proposed Narngulu DG compound, and not in a freight container. Hence, Section 5.9 of AS/NZS 5026 is not applicable.	N/A	Add. A (Photos 4, 16, 19 & 20)
		(a) Freight container not to be used for storage & workshop.			
		(b) Materials of construction of the floor to be compatible with the Class 4 DGs to be stored.			
		(c) Prior to use, floorboards to be inspected to ensure no contamination from previous spills / leaks.			
		(d) Where pedestrian access is required, a clear, demarcated (e.g. painted yellow lines) passageway to be provided inside container.			
		(e) No electrical equipment installed inside the freight container unless it is suitable for use in the HA zone			
		(f) Doors openable from the inside and any external locks deactivated.			
		(g) No point within container to be >6 m from an exit door.			
Package filling operations	AS/NZS 5026 Cl. 5.10 & AS 4452 Cl. 6.5	Cluses apply to package filling operations for Class 4 DGs with SR 6.1.	N/A – Although spent AIP blankets will be placed inside containers (i.e. raised, open steel cages) within PS3, this is for static storage and dry de-activation prior to collection by the product supplier (Fintran). Hence, this activity does not appear to fit the definition of ‘package filling operations’ under AS/NZS 5026 or AS 4452.	N/A	Add. A (Photos 4, 16, 19 & 20) & Att. 2 (DGRA)
Activities in package stores	AS/NZS 5026 Cl. 5.11	Activities other than those in Cl. 5.10 are not to be conducted unless a risk assessment has been conducted and a risk management plan prepared and implemented.	N/A - No activities other than static storage and dry de-activation of spent AIP blankets / wastes will be undertaken in Store PS3 within the proposed Narngulu DG compound.	N/A	
Offices within package stores	AS/NZS 5026 Cl. 5.12	Clause applies to offices located within a Class 4 DG store.	N/A – There will be no office within the proposed Store PS3 or associated DG compound at CBH’s Narngulu site.	N/A	Add. A (Photos 4, 16, 19 & 20 & DWG. 2025-307-0573 / 0575)

Table D.8 Additional Requirements for Division 4.1 DGs

Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Scope & application of section	6.1, 6.2 & 6.3	Section 6 sets out additional requirements of AS/NZS 5026 specific to different types of Division 4.1 DGs stored in cabinets, packages or IBCs.	N/A - Section 6 of AS/NZS 5026 is not applicable to Store PS3 at the proposed Narngulu DG compound, as AIP is classified as a Division 4.3 (SR 6.1) DG.	N/A	Att. 1 (Site DG Manifest) & Att. 3 (SDS)

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Table D.9 Additional Requirements for Division 4.2 DGs

Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Scope & application of section	7.1 & 7.2	Section 7 sets out additional requirements of AS/NZS 5026 specific to different types of Division 4.2 DGs stored in packages / IBCs or tanks.	N/A - Section 7 of AS/NZS 5026 is not applicable to the AIP Waste Storage Area (Store PS3) at the proposed Narngulu DG compound, as AIP is classified as a Division 4.3 (SR 6.1) DG.	N/A	Att. 1 (Site DG Manifest) & Att. 3 (SDS)

Table D.10 Additional Requirements for Division 4.3 DGs

Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Scope & application of section	8.1 & 8.2	Section sets out additional requirements of AS/NZS 5026 specific to Division 4.3 DGs, which take precedence of requirements specified elsewhere in the standard.	Section 8 of AS/NZS 5026 is applicable to the AIP Waste Storage Area (Store PS3) at the proposed Narngulu DG compound, as AIP is classified as a Division 4.3 (SR 6.1) DG.	✓	Att. 1 (Site DG Manifest) & Att. 3 (SDS)
Essential requirements	8.3	Store design, construction and operation to ensure that Division 4.3 DGs are protected from exposure to water in any form (including atmospheric moisture).	The proposed AIP Waste Storage Area (Store PS3) has been designed to minimise the potential for direct contact with water (e.g. heavy gauge corrugated steel sheeting, gutters with downpipe, wastes stored within raised, open steel cages, and ventilation design (small vents in the side and back walls and a whirlybird vent on the roof)). As well as preventing ingress of rainwater, the whirlybird vent is also designed to remove hot air and moisture from the store. The concrete slab for the proposed Narngulu DG compound will also slope away from the store to a HDPE-lined wastewater collection area outside the compound.	✓	Add. A (Photos 4, 16, 19 & 20) & Att. 2 (DGRA)
Storage of packages and IBCs	8.4.1	Where packages or IBCs of Division 4.3 DGs are not opened within a store:			
		(a) Where the store is part of a building: (i) at least one side to be an external wall with ventilation to outside of the building and no ventilation into the building; or (ii) at least one wall to be open to outdoors (e.g. steel mesh gate or louvred wall) with no ventilation into the building. Ventilation to prevent ingress of water.	N/A – The AIP Waste Storage Area (Store PS3) within the proposed Narngulu DG compound will be a shed / smartlocker and not part of a building. Also, the spent AIP blankets will be stored in raised, open steel cages (not closed / sealed containers) to allow any residual AIP to slowly de-activate. The ventilation system (i.e. small vents in the side and back walls and a whirlybird vent on the roof) is designed to prevent water ingress.	N/A	
		(b) If storage cabinets are used, they should be located indoors.	N/A – The spent AIP blankets will be stored within raised, open steel cages inside a shed / smartlocker (Store PS3) and not within a storage cabinet.	N/A	

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Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Storage of packages and IBCs (cont'd)	8.4.1	(c) Division 4.3 packages and IBCs to be protected from contact with, and ingress of, moisture.	N/A - The spent AIP blankets will be stored within raised, open steel cages inside Store PS3. However, as under Cl. 8.3 above, the proposed store has been designed and constructed to minimise potential exposure of AIP to water / moisture.	N/A	Add. A (Photos 4, 16, 19 & 20) & Att. 2 (DGRA)
		(d) Any fixed electrical equipment to be: (i) suitable for the HA designated in AS/NZS 60079.10 series (i.e. Zone 1 for PG I and Zone 2 for PG II / III); (ii) installed as per AS/NZS 3000; and approved for use with any gas that may be generated by DG stored.	N/A - As above, spent AIP blankets will be stored in raised, open steel cages (not closed / sealed containers) within Store PS3 and, based on modelling undertaken for the KGT site, there will be no HA associated with the store. Regardless, there will be no fixed electrical equipment inside the store.	N/A	
		(e) Firefighting equipment / media, compatible with the Division 4.3 DGs stored and capable of extinguishing any potential fire, to be provided.	N/A - As above, spent AIP blankets will be stored in raised, open steel cages (not closed / sealed containers) within Store PS3. However, as detailed in Table D.13 below, several dry chemical powder FEs will be provided outside Store PS3 and, based on the SDS, dry chemical powder is suitable for fighting fires involving AIP.	N/A	
	8.4.2	Division 4.3 DG stores to be separated from protected places and boundaries by a least 5 m (which can be measured around a firewall with a FRL of at least 240/ 240/240.	N/A – As per Cl. 8.5.2 below, package stores containing Division 4.3 DGs of PG I must be separated from protected places and site boundaries by a least 15 m (i.e. greater than the 5 m required by AS/NZS 5026 Cl. 8.4.2).	N/A	Att. 1 (Site DG Manifest) & Att. 3 (SDS)
Division 4.3 PG I	8.5.1	(a) Store to be located within a bunded compound, complying with Cl. 5.6 and of adequate strength and capacity, to: (i) contain the DGs in a fire (if the DGs are liquids or will liquify in a fire); and (ii) prevent water entering the store at ground level.	The AIP Waste Storage Area (Store PS3) will be situated within the proposed Narngulu DG compound, but the area around the store will not be bunded. The concrete slab will slope to a wastewater collection area (an HDPE-lined bund) outside the DG compound to the south-east. As mentioned previously (e.g. Cl. 8.3 above), spent AIP blankets will be stored in raised, open steel cages on a concrete floor within a closed shed / smartlocker (Store PS3) constructed from heavy duty corrugated steel sheeting. Due to the design of the shed / smartlocker (including ventilation and gutters) and drainage within the DG compound preventing water pooling / collecting, water entering Store PS3 at ground level is considered extremely unlikely.	✓	Add. A (Photos 4, 16, 19 & 20 & DWG. 2025-307-0575 & 307-ENG-CI-DAL-0030) & Att. 2 (DGRA)

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Aspect	Cl.	AS/NZS 5026 Specification	Proposed	Status (✓ or ✗)	Ref.
Division 4.3 PG I (cont'd)	8.5.2	(b) Combustible materials and DGs of other classes not to be stored in the same storage area as Division 4.3 PG I DGs.	The AIP Waste Storage Area (Store PS3) within the proposed Narngulu DG compound will only contain spent AIP blankets, which are a Division 4.3 (SR 6.1) DG of PG I. There will be no combustible materials stored inside or around Store PS3. Previously, empty foil packaging had been stored in garbina bags (combustible material) within Store PS3 at other CBH sites, however, based on discussions with Fintran, they are now to be stored in the open steel cages.	✓	Add. A (Photos 4, 16, 19 & 20), Att. 2 (DGRA) & Att. 3 (SDS)
		Package stores and tanks containing Division 4.3 PG I DGs to be separated from foodstuffs, protected places and site boundaries by at least 15 m.	As detailed under AS/NZS 5026 Cl. 5.4.2 in Table D.7 above, greater than 15 m separation distance will be provided from the proposed AIP Waste Storage Area (Store PS3) to foodstuffs, protected places and the nearest site boundary.	✓	Table D.7 & Add. A (DWG. 2025-307-0573)
Division 4.3 PG II	8.6	Combustible materials and DGs of other classes not to be stored in the same storage area as Division 4.3 PG II DGs.	N/A – As per Cl. 8.5 above, the AIP Waste Storage Area (Store PS3) within the proposed Narngulu DG compound will only contain spent AIP blankets (a Division 4.3 DG of PG I) and empty foil pouches.	N/A	Att. 1 (Site DG Manifest) & Att. 3 (SDS)
Division 4.3, SR 3	8.7	Division 4.3 DGs with a Class 3 SR to be stored as per the more stringent requirements of AS 1940 or AS/NZS 5026, must not be stored with other Class 3 DGs, and selection of fire protection equipment to be based on a risk assessment and the Division 4.3 classification in addition to the Class 3 hazard.	N/A – The spent AIP blankets to be kept in Store PS3 within the proposed Narngulu DG compound are a Division 4.3 DG with a Division 6.1 SR (i.e. not a Class 3 SR).	N/A	

Table D.11 Operational and Personnel Safety

Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Control of entry	AS/NZS 5026 Cl. 9.2.1 & AS 4452 Cl. 9.2.2	Control of entry to prevent unauthorised access to the site / any restricted areas.	As per Addendum B above, there is no security fencing around the Narngulu site, only ring lock fence. The proposed DG compound, in which the AIP Waste Storage Area (Store PS3) will be located, will be a secured fenced area with locked gates (and restricted key access). Store PS3 will also be locked when not in use.	✓	Site Inspection, Add. A (Photos 2, 4, 16 & 19), Add. B & Att. 2 (DGRA)

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Clear access	AS/NZS 5026 Cl. 9.2.2	Entry into / exit from Class 4 DG store to be kept clear at all times; and easy access to be provided at all times to PPE; firefighting equipment; spill clean-up materials & equipment, and DG manifest.	Store PS3 within the proposed Narngulu DG compound will be located at ground level (although the ground / concrete slab will be raised slightly to prevent flooding and a concrete apron provided) and there will be clear / easy access to / egress from the store (once the compound gate is unlocked).	✓	Add. A (Photos 2, 4, 9, 15, 18, 19 & 20 & DWG. 2025-307-0573 / 0575) & Att. 2 (DGRA)
	AS 4452 Cl. 9.2.3	Entry into / exit from areas where toxic substances are stored or handled to be kept clear at all times. Access to be provided at all times to PPE; firefighting equipment; spill clean-up materials & equipment and DG manifest.	Clear access (marked with yellow paint) will be provided around the outside of PS3 and, due to the method of storage of the AIP wastes and the dimensions of the smartlocker (i.e. only 3.65 m in length and 1.4 m wide), CBH personnel will be able to easily and safely access the waste storage containers (open steel cages) at all times. Access will be regularly checked using the 'DG Compound Weekly Inspection' in ROAM. Within the proposed DG compound, clear access will also be provided to firefighting equipment, safety equipment (e.g. safety shower / eyewash), SDSs, first-aid kit and the Site DG Manifest.		
Lighting	AS/NZS 5026 Cl. 9.2.4 (a) AS 4452 Cl. 9.2.4 (a) (b)	Sufficient lighting to provide safe working conditions and allow people to read signs, markings, instruments and other necessary items. Interior lighting to be of at least the luminance specified in AS/NZS 1680.	As per Table D.6 above, Store PS3 at the proposed Narngulu DG compound will not be provided with any fixed lighting (inside), as the store (and compound) will not normally accessed outside daylight hours. However, the proposed DG compound will be provided with some motion-activated security lighting and a light within the Vehicle Parking Shelter.	✓	Add. A (Photos 2, 4, 9, 16, 19 & 20) & Att. 2 (DGRA)
	AS/NZS 5026 Cl. 9.2.4 (e) AS 4452 Cl. 9.2.4 (c)	Sufficient lighting to be provided on internal site roads.	There are some floodlights to the north-west of the proposed Narngulu DG compound near the weighbridges, as well as some floodlights around the site office / amenities.	✓	Site Inspection, Add. A (Photo 30) & Att. 2 (DGRA)
	AS/NZS 5026 Cl. 9.2.4	(b) Where there is risk of a flammable gas being generated, lighting to comply with AS/NZS 60079.10.1.	As detailed above, motion-activated security lighting (and a light within the Vehicle Parking Shelter) will be provided within the proposed Narngulu DG compound. Due to adequate natural ventilation and the nature of the DG packages stored, and based on modelling conducted for the KGT site, it is considered that a HA cannot exist inside the DG compound.	✓	Add. A (Photos 2, 4, 9, 16, 19 & 20) & Att. 2 (DGRA)
	AS/NZS 5026 Cl. 9.2.4	(c) Where combustible dusts are present, relevant requirements of AS/NZS 61241 to apply.	N/A – There will be no combustible dusts associated with storage of spent AIP blankets and other AIP wastes within Store PS3 at the proposed Narngulu DG compound.	N/A	Att. 2 (DGRA) & Att. 3 (SDS)

PROPOSED NARNGULU DG COMPOUND

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Vehicular access	AS/NZS 5026 Cl. 9.2.3	Vehicle access and movement to be controlled; only compliant vehicles to be used in hazardous zones; speed limits imposed and displayed; parking of vehicles only in designated areas.	<p>As per the CBH 'Vehicle and Traffic Management' Procedure (STORE ID 17619110), traffic movements around the Narngulu site are controlled (<i>refer to the 'Narngulu Traffic Flow Map' in Addendum A</i>). Although there is no security fencing around the Narngulu site, ring lock fencing is provided.</p> <p>The speed limit for the main site is 20 kph, which is signposted around the Narngulu site. The speed limit for the proposed DG compound will be 5 kph and a sign will be displayed on the DG compound fence.</p> <p>There are clearly defined designated parking areas provided at the south of the site, to the east of the office.</p> <p>Warning signage will be provided on the fence of the proposed Narngulu DG compound stating "NO PARKING OR STANDING WITHIN 15 METRES OF COMPOUND" and there is also signage at the site entrance stating "WARNING – RESTRICTED AREA / AUTHORISED ENTRY ONLY", "ALL VISITORS MUST REPORT TO, AND OR, CONTACT THE SITE MANAGER OR WEIGHBRIDGE OPERATOR".</p> <p>As above, spent AIP blankets will be stored in raised, open steel cages within an adequately ventilated shed / smartlocker (Store PS3) and vehicles will not be required to enter the store. Although GP vehicles will enter the proposed Narngulu DG compound intermittently, the AIP Freight Container (Store PS2) and Gas Cylinder Store (Store PS1) will also be well-ventilated and, based on modelling undertaken for the KGT site, it is considered that a HA cannot exist inside the compound.</p>	✓	Site Inspection, Add. A (Photos 1, 4, 7, 8, 10, 13, 14, 16, 18, 19, 20, 21, 22, 23 & 29 & DWG. 2025-307-0573 & Narngulu Traffic Flow Map), Add. E & Att. 2 (DGRA)
Ventilation	AS/NZS 5026 Cl. 9.2.5 (a)(b) & AS 4452 Cl. 9.3.2 (a)(c)	<p>Store to be provided with adequate natural or mechanical ventilation appropriate to the nature of the DG stored.</p> <p>Ventilation to be sufficient to maintain ambient concentrations of any vapours / dusts as low as practicable and below any assigned workplace exposure levels.</p>	<p>As mentioned previously, the spent AIP blankets within Store PS3 will be kept in raised, open steel cages to allow any residual AIP to slowly de-activate. Adequate natural ventilation will be provided via small vents in the side and back walls and a whirlybird vent in the roof, which would facilitate dilution and dispersion of any PH₃ gas generated.</p> <p>Persons accessing the proposed Narngulu DG compound (including Store PS3) will be required to wear a personal gas monitor (e.g. PAC-8000 or ToxiPro), which would alert them to any PH₃ gas levels above 0.3 ppm (8-hour TWA).</p>	✓	Add. A (Photos 2, 4, 12, 16, 19 & 20) & Att. 2 (DGRA)

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Ventilation (cont'd)	AS/NZS 5026 Cl. 9.2.5 (c)(d) & AS 4452 Cl. 9.3.2 (d)(e)	Mechanical ventilation system (e.g. general / local exhaust ventilation) to comply with the requirements of AS 1668.2 and exhaust flow rates determined by a suitably qualified engineer. For toxic substances, local exhaust ventilation is most effective.	N/A – As immediately above, the AIP Waste Storage Area (Store PS3) within the proposed Narngulu DG compound will be provided with adequate natural ventilation and, hence, a mechanical ventilation system will not be required.	N/A	Add. A (Photos 4, 16, 19 & 20) & Att. 2 (DGRA)
		Mechanical ventilation system not to introduce an active or potential ignition source.			
Introduction of ignition sources	AS/NZS 5026 Cl. 9.2.6	Work permit to be obtained prior to introducing an active / potential ignition source into a restricted area.	Any hot work within the proposed AIP Waste Storage Area (Store PS3) and associated Narngulu DG compound will be managed in accordance with the CBH 'PTW Group Procedure' (STORE-1473931053-244096) and associated Hot Work SOP (STORE -1473931053-244102). Also, as per Section 13.7.2 of the CBH 'DG and Chemical Management Plan', a detailed JSA must be completed prior to any non-routine works being undertaken within the DG compound and all DGs must be removed from the immediate area.	✓	Att. 2 (DGRA), PTW Group Procedure, Hot Work SOP & DG and Chemical Management Plan
Site upkeep	AS/NZS 5026 Cl. 9.2.7 (a) (d) & AS 4452 Cl. 9.4.1	Area within a compound, or within 3 m of it, to be kept clear of extraneous matter / combustible materials. Vegetation to be kept short if it could present a fire hazard.	The proposed Narngulu DG compound will be built upon a concrete pad and all stores and other infrastructure (e.g. fences and gates) will be constructed from steel, i.e. all materials of construction for the DG compound will be non-combustible. The area around the proposed DG compound will be kept clear of dry vegetation and other combustible materials for at least 15 m. The condition of the proposed DG compound, including build-up of combustible materials and vegetation will be regularly checked as part of the CBH 'DG Compound Weekly Inspection' in ROAM.	✓	Add. A (Photos 2, 4, 10, 13, 14, 16, 19, 20, 21, 22 & 23 & DWG. 2025-307-0575 & 307-ENG-CI-DAL-0030) & Att. 2 (DGRA)
	AS/NZS 5026 Cl. 9.2.7	(b) Specified clearance distances to be maintained at all times.	A 15 m exclusion zone will be maintained around the proposed Narngulu DG compound and appropriate signage will be displayed (e.g. "NO PARKING OR STANDING WITHIN 15 METRES OF COMPOUND") to ensure required clearance / separation distances are maintained at all times. This requirement will be regularly checked as part of the CBH 'DG Compound Weekly Inspection' in ROAM.	✓	Add. A (Photo 2 & DWG. 2025-307-0573) & Att. 2 (DGRA)

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.	
Bulk storage installations	AS/NZS 5026 Cl. 9.2.10 & AS 4452 Cl. 9.4.2	Access to bulk storage compounds (e.g. ladders, stairs, catwalks and platforms) to be kept in a safe condition. Hatches, tank opening, manholes or similar to be kept closed when not in use.	N/A – The AIP Waste Storage Area (Store PS3) within the proposed Narngulu DG compound will be a package / waste store and not a bulk storage installation.	N/A	Add. A (Photos 4, 16, 19 & 20 & DWG. 2014-000-0010)	
Package stores	AS 4452 Cl. 9.4.3 (a) to (d)	Segregation requirements for each toxic substance to be determined and documented in a procedure. Any toxic substance not already addressed in the procedure to be included and temporarily held in a separate area prior to assessing segregation requirements. Procedure to list toxic substances that may be stored in each nominated area.	N/A – The AIP Waste Storage Area (Store PS3) within the proposed Narngulu DG compound will only contain spent AIP blankets and no other toxic substances, hence segregation within the store is not relevant. However, procedures related to AIP storage and handling are included in Section 13.10 of the CBH 'DG and Chemical Management Plan'.	N/A	Att. 1 (Site DG Manifest) & DG and Chemical Management Plan	
	AS/NZS 5026 Cl. 9.2.11 (a) & AS 4452 Cl. 9.4.3 (e)	Aisles inside the store to be kept clear.	There will be no aisles within Store PS3 at the proposed Narngulu DG compound, as it will be a small shed / smartlocker with a width of 1.4 m and a length of 3.65 m. CBH personnel will be able to easily and safely access the AIP waste storage containers (open steel cages) at all times.	✓	Add. A (Photos 4, 16, 19 & 20 & DWG. 2014-000-0010)	
	AS/NZS 5026 Cl. 9.2.11 (b) & AS 4452 Cl. 9.4.3 (g)	Packages regularly inspected and, if any signs of leakage from damaged packages, should be repackaged.	The spent AIP blankets will be stored in raised, open steel cages. The proposed AIP Waste Storage Area (Store PS3) will be regularly inspected as part of the CBH 'DG Compound Weekly Inspection' in ROAM, which would identify any damaged blankets and signs of leakage.	✓	Add. A (Photos 19 & 20) & Att. 2 (DGRA)	
	AS/NZS 5026 Cl. 9.2.11	(c) Any contamination of outer package removed prior to storage.				
	AS/NZS 5026 Cl. 9.2.11 (d) & AS 4452 Cl. 9.4.3 (h)	Minor spills treated - prevent leaks and spills from occurring, and clean up action to be initiated immediately.	As per Table B.3 in Addendum B , a spill from spent AIP blankets in Store PS3 is highly unlikely, as they will be stored in raised, open steel cages within a closed shed / smartlocker. However, a shovel, broom and dustpan / brush will be provided inside the proposed Narngulu DG compound. Any AIP spills will be contained, cleaned-up and disposed of in accordance with the new Narngulu EP to be developed (<i>refer to Table B.3 in Addendum B and SHARE Action ACT-37372</i>), the SDS and CBH Spill Response WI.	✓	Add. A (Photos 4, 16, 19 & 20), Add. B, Att. 2 (DGRA), CBH Spill Response WI (STORE-1473931053-244028) & CBH SHARE System	
	AS/NZS 5026 Cl. 9.2.11 (e) & AS 4452 Cl. 9.4.3 (j)	Any packages opened or partially used to be clearly identified and used first.	N/A – Store PS3 within the proposed Narngulu DG compound will be used for temporary storage of spent AIP blankets in raised, open steel cages, and not new AIP packages.	N/A	Add. A (Photos 4, 16, 19 & 20)	

PROPOSED NARNGULU DG COMPOUND

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Package stores <i>(cont'd)</i>	AS/NZS 5026 Cl. 9.2.11 (f)(g) & AS 4452 Cl. 9.4.3 (k)(l)	Labels retained on empty containers until decontaminated, after which labels should be removed or obscured.	N/A to the spent AIP blankets and other waste in Store PS3, however, Section 13.12.2 of the CBH 'DG and Chemical Management Plan' details the requirements for safe disposal of the empty AIP containers, including: triple rinsing of the steel drums; physically removing the labels; and recycling (by Waste Wise).	✓	DG and Chemical Management Plan
		Unless decontaminated, empty Class 4 / SR Division 6.1 containers to be treated as containing Class 4 / SR 6.1 DGs except bunding not required.			
Safety information	AS/NZS 5026 Cl. 9.2.12 & AS 4452 Cl. 9.2.6	Copies of SDS, detailing hazardous properties and appropriate first-aid measures, to be kept in an easily accessible location and must be kept up to date.	SDSs for some hazardous chemicals to be stored and handled at the Narngulu site are available electronically via ChemAlert. However, copies of the manufacturer's / supplier's SDSs for DGs used by GP personnel are not all available in ChemAlert. Consequently, CBH's GP team has developed an SDS Register of all chemicals approved for use in the 'Protect Grain Procedure' / 'DG and Chemical Management Plan', which is accessible to all GP personnel via STORE links in these GP documents. Hard copy SDSs for DGs stored and handled within the proposed DG compound will be provided in EICs at the Narngulu site entrance and outside the DG compound. Relevant SDS are also provided in Attachment 3 .	✓	Add. A (Photos 2 & 18), Att. 3 (SDS), Protect Grain Procedure & DG and Chemical Management Plan
Inspection of plant and equipment	AS 4452 Cl. 9.4.4	Plant and equipment to be inspected periodically to ensure that it is in a serviceable condition, including (a) visual inspection, or simulation of operating conditions for tanks, piping, valves, pumps, gauges, alarms, etc.; and (b) inspection of vents and any relief valves to ensure that they are clear of obstructions and operable. Records of inspections to be kept.	N/A – The AIP Waste Storage Area (Store PS3) within the proposed Narngulu DG compound will be a waste / package store in a dedicated shed / smartlocker and not a bulk storage (i.e. not a fixed tank with associated piping and equipment).	N/A	Add. A (Photos 4, 16, 19 & 20)
Operating procedures	AS/NZS 5026 Cl. 9.3	Safe systems of work, including written procedures to be developed and implemented, e.g. emergency procedures, site plan indicating locations of stores, operating procedures and construction / maintenance procedures. Procedures to be readily available / easily accessible.	CBH has developed formal plans SOPs / procedures and WIs for performing work at CBH sites, including procedures related to ER and OWM. These documents form part of CBH's IMS and are readily accessible electronically via CBH's SharePoint (SHARE) system.	✓	CBH IMS (SharePoint)
		All site personnel to be trained in, and comply with, appropriate procedures; and an audit system to be developed and implemented to ensure compliance.	All CBH site personnel are provided with training in accordance with the 'Training, Awareness and Competency' Group Procedure, some of which includes an OA. Compliance with procedures is assessed in accordance with the IMS 'Audit and Verification' Group Procedure and includes layered audits, CCVs and safety interactions.	✓	Training, Awareness and Competency Procedure & Audit and Verification Group Procedure

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Operating procedures (cont'd)	AS/NZS 5026 Cl. 9.3	Regular review and update of procedures, particularly following facility modifications or organisational changes.	Creation, review and revision of IMS documents, as well as records management and retention, is managed in accordance with CBH's Group Procedure 'Document Control, Content and Records Management' and associated 'Document Control' WI. Review frequency is specified at the back of the IMS documents, however plans, SOPs / procedures and WIs are normally reviewed and, if required, updated on an annual basis.	✓	CBH Document Control, Content and Records Management Group Procedure & Document Control WI (STORE-1473931053-243914)
Effluent control	AS/NZS 5026 Cl. 9.4 & AS 4452 Cl. 9.5	Effluent lines to be monitored to ensure compliance with regulatory requirements and no discharge of harmful effluent prior to appropriate treatment. Records to be kept of any monitoring.	N/A – There will be no effluent lines directly associated with the AIP Waste Storage Area (Store PS3) at the proposed Narngulu DG compound, as it is only used for temporary storage of spent AIP blankets in raised, open steel cages. The concrete slab of the DG compound will slope to a wastewater collection area (an HDPE-lined bund) outside the compound, which will include an isolation point (i.e. PVC pipe with cap). As per Section 13.11 of the 'DG and Chemical Management Plan', the purpose of this area will be to capture any stormwater / FW in the event of an incident so that it can be drained away as needed, following a visual inspection, to ensure no contamination.	N/A	Add. A (Photos 4, 16, 19 & 20 & DWG. 2025-307-0575 & 307-ENG-CI-DAL-0030) & DG and Chemical Management Plan
Construction and maintenance work	AS/NZS 5026 Cl. 9.5 & AS 4452 Cl. 9.6	Construction and maintenance not carried out in the store without written authorization.	Any construction or maintenance work related to Store PS3, or any other store within the proposed Narngulu DG compound, will be planned and conducted under CBH's SAP System, as detailed in the OWM Group Procedure.	✓	Att. 2 (DGRA) & OWM Group Procedure (STORE-1473931053-795)
		If any doubt about safety, toxic substances to be moved to another location prior to starting work.	As under Cl. 9.2.6 above, any high-risk work must be planned, controlled and conducted as per the CBH 'PTW Group Procedure' and associated SOPs, which includes a RA. Also, as per Section 13.7.2 of the CBH 'DG and Chemical Management Plan', a detailed JSA must be completed prior to any non-routine works being undertaken in the proposed Narngulu DG compound and all DGs removed from the immediate area.	✓	OWM Group Procedure, PTW Group Procedure & DG and Chemical Management Plan
		Any routine work for which a work permit is not required to be supervised to ensure that it is performed safely.			
		Work within a restricted area (except routine, non-hazardous work) to be authorised under a work permit and MoC procedures.			



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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Personnel training	AS/NZS 5026 Cl. 9.6 & AS 4452 Cl. 9.7	<p>Personnel handling Class 4 (SR 6.1) DGs to be aware of properties / hazards, safe handling methods, use of PPE, first-aid and emergency response.</p> <p>Emergency drills and use of firefighting equipment to be provided as part of training.</p>	<p>All CBH site personnel are provided with training in accordance with the 'Training, Awareness and Competency' Group Procedure, some of which includes an OA. Training of CBH personnel is managed electronically / online through the 'Success Factors: Learning Management System', which includes a detailed online HSE Induction and identifies requirements for refresher training.</p> <p>Site-specific inductions, including site hazards, PPE and ER requirements, are also provided to personnel, contractors and visitors to CBH sites. A special induction will also be given to persons required to enter the proposed Narngulu DG compound for the first time. This induction will be completed electronically in ROAM and records are kept in SHARE.</p> <p>Job-specific training is provided to GP personnel, where required, including, but not limited to: forklift training / licensing, manual handling, PTW and isolation, fumigation in the workplace, SCBA, use of portable FEs and FHRs (i.e. responding to minor emergencies), and comprehensive work-based training in the handling of DGs (e.g. Fintran stewardship for AIP and Solvay stewardship for PH₃ gas).</p> <p>As stated in Section 12.2 of the Protect Grain Procedure, there is a requirement for CBH DG sites to conduct an annual drill related to transport, storage and fumigation processes and one of these should include a site evacuation and involve the local DFES. Annual ER exercises and training will also be included in the new EP to be developed for the proposed Narngulu DG compound (refer to <i>SHARE Action ACT-37372</i>).</p> <p>Daily toolbox / pre-start meetings are held at the Narngulu site and include HSE topics. All drivers delivering DGs to site will be appropriately trained and DG licensed, where required.</p> <p>Many CBH personnel (all frontline staff), including those at the Narngulu site have been provided with appropriate Advanced First Aid training. All licensed GP personnel must have first aid training, including use of a BVM.</p>	✓	Att. 2 (DGRA), Training, Awareness and Competency Group Procedure (STORE-1473931053-395), Protect Grain Procedure, DG and Chemical Management Plan & CBH SHARE System



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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Records	AS/NZS 5026 Cl. 9.7	Records for training, equipment testing, emergency drills, maintenance, inspections and incidents, SDS, and site chemical inventory to be kept.	<p>CBH retains records electronically. As above, records of training are kept on the 'Success Factors Learning Management System.</p> <p>As per the CBH 'Incident Management' Group Procedure (STORE-1473931053-243706), all incidents, including DG related incidents, are reported / recorded in the CBH SharePoint (Cintellate / SHARE) system on a daily basis and communicated to all CBH personnel via email. Incident records are kept in SHARE.</p> <p>Records of emergency drills / exercises, including any improvement opportunities / Actions, as well as DG compound inductions and weekly inspections recorded in ROAM, are kept in CBH's SHARE System.</p> <p>As per Cl. 9.2.12 above, electronic copies of SDSs are accessible either via ChemAlert or the GP SDS Register in STORE365. Hard copies of relevant SDS will also be provided at strategic locations around the Narngulu site, i.e. in EICs at the site entrance and outside the proposed DG compound.</p> <p>Records of equipment testing / inspections and maintenance are maintained in CBH's SAP System.</p> <p>Quantities of DGs to be stored and handled (above placarding quantities under Schedule 1 of the DG Regs) are recorded in the Draft Narngulu Site DG Manifest (Attachment 1).</p>	✓	Att. 1 (Site DG Manifest), Training, Awareness and Competency Group Procedure, Incident Management Group Procedure, OWM Group Procedure, Protect Grain Procedure, DG and Chemical Management Plan & CBH SHARE System

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
PPE	AS/NZS 5026 Cl. 9.8 & AS 4452 Cl. 9.8	All personnel to be provided with correct PPE, which should be easily accessible and in good working order. Personnel to be trained in correct use of PPE. PPE to be selected in accordance with the relevant AS.	<p>Requirements regarding PPE selection, use and maintenance are detailed in Section 13 of the CBH 'Personal Health and Safety' Standard.</p> <p>Appropriate PPE is provided to CBH personnel on employment and additional PPE (e.g. gloves, ear plugs and safety glasses) is also provided at CBH sites. Correct use of PPE is addressed in the CBH online HSE Induction and, for GP personnel, during SCBA training, fumigation training and fit testing.</p> <p>As a minimum, all personnel entering the proposed Narngulu DG compound must wear safety boots, high visibility shirt, long trousers, safety glasses and a personal gas monitor (e.g. PAC-8000 or ToxiPro). When carrying out specific work activities, or for ER, additional PPE (e.g. chemical resistant overalls, full-face respirators or SCBA) may also be required. PPE requirements for specific GP activities are detailed in the Protect Grain Procedure and associated WIs, and the 'GP Chemical PPE Guide'.</p> <p>A sign will be displayed on the front of the proposed Narngulu DG compound stating "PERSONAL GAS MONITOR MUST BE WORN IN THIS AREA".</p>	✓	Add. A (Photos 1, 2 & 12), Att. 2 (DGRA), Personal Health and Safety' Standard (STORE-1473931053-521), Protect Grain Procedure & GP Chemical PPE Guide (STORE-1473931053-299)
First Aid	AS/NZS 5026 Cl. 9.9 & AS 4452 Cl. 9.9	<p>First Aid station to be provided in a clean area, and should contain first aid kit and instructions, and relevant SDS.</p> <p>List of trained first aiders to be displayed on notice boards and at each first aid station.</p>	<p>As shown on the Narngulu Traffic Flow Map in Addendum A, first aid kits are provided in nearby weighbridges. A first-aid kit will also be installed within the Vehicle Parking Shelter of the proposed Narngulu DG compound.</p> <p>Electronic copies of SDSs are accessible either via ChemAlert or the GP SDS Register in STORE365. Hard copies of relevant SDS will also be provided in EICs at the Narngulu site entrance and outside the proposed DG compound.</p> <p>All front line CBH personnel (approximately 90%) are provided with appropriate Advanced First Aid training (hence, not identified on notice boards) and licensed GP personnel are also trained in use of BVMs.</p>	✓	Add. A (Photos 2 & 18 & Narngulu Traffic Flow Map) & Att. 2 (DGRA)

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
First Aid (cont'd)	AS/NZS 5026 Cl. 9.9 & AS 4452 Cl. 9.2.5 & Cl. 9.9	Eyewash facilities complying with AS 4775 to be provided.	A safety shower / eyewash facility will be provided inside the proposed Narngulu DG compound. The condition and operability of the safety shower / eyewash will be checked on a weekly basis as part of the CBH 'DG Compound Weekly Inspection' in ROAM.	✓	Add. A (Photo 9 & DWG. 2025-307-0575)

Table D.12 Emergency Management

Refer also to details provided in Table B.3 in Addendum B.

Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Planning for emergencies	AS/NZS 5026 Cl. 10.2.1 & AS 4452 Cl. 10.2	Design and layout of premises to ensure suitable distances between bund walls, storage areas and other structures to allow access for maintenance and during emergencies; installation of alarms; water supplies; fire protection equipment; evacuation and access routes; containment of leaks, spills and run-off of firewater; and location of EP.	As detailed in Tables B.3, D.6, D.7, D.10 and D.13, the design and layout of the CBH Narngulu site, including the proposed DG compound, is appropriate to effectively manage any potential emergencies that could arise. Details of emergency management, evacuation / access requirements and ER actions will be provided in a new EP to be developed for the proposed Narngulu DG compound (<i>refer to Table B.3 of Addendum B and SHARE Action ACT-37372</i>).	✓	Add. B, Att. 2 (DGRA) & CBH SHARE System
Manifest	AS/NZS 5026 Cl. 10.3 & AS 4452 Cl. 10.3	Manifest to be provided in accordance with regulatory requirements. Manifest to include emergency contact information, an inventory of hazardous materials and a site plan. Manifest to be provided in a location near the main site entrance.	As mentioned in Addendum B , a Draft Site DG Manifest (including a Draft Site Plan) has been developed for the proposed Narngulu DG compound. The Draft Manifest is provided in Attachment 1 and hard copies will be available in the EICs at the Narngulu site entrance and outside the proposed DG compound.	✓	Add. A (Photos 2 & 18), Add. B, Att. 1 (Site DG Manifest) & Att. 2 (DGRA)
Placarding - stores	AS/NZS 5026 Cl. 10.4.1 & AS 4452 Cl. 10.4	Stores to be placarded in accordance with regulatory requirements, e.g. ADG Code & DG Regs. (i.e. r. 70 & Schedule 4). Placards to be legible and reflect actual storage situation.	As detailed under AS/NZS 5026 Cl. 4.10.2 in Table D.6 above, appropriate package store DG placards / diamonds (Division 4.3 and SR 6.1) will be displayed on the AIP Waste Storage Area (Store PS3) at the proposed Narngulu DG compound.	✓	Table D.6, Add. A (Photos 16 & 19) & Att. 2 (DGRA)
Signs and notices / other signage	AS/NZS 5026 Cl. 4.10.2 (a) & 10.4.2(a)	Store to display a warning sign to prohibit smoking and exclude other ignition sources, e.g. "DANGER: NO SMOKING, NO IGNITION SOURCES".	Appropriate warning signage will be displayed around the proposed Narngulu DG compound stating "DANGER – NO SMOKING, NO IGNITION SOURCES".	✓	Add. A (Photos 2, 11, 14 & 21) & Att. 2 (DGRA)
	AS/NZS 5026 Cl. 4.10.2 (b) & 10.4.2(b)	Store to display a warning sign to restrict entry, e.g. "WARNING - RESTRICTED AREA, AUTHORISED PERSONNEL ONLY".	Appropriate warning signage, i.e. "RESTRICTED AREA – AUTHORISED PERSONNEL ONLY" will be displayed on the security fencing around the proposed Narngulu DG compound.	✓	

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Management of leaks and spills	AS/NZS 5026 Cl. 10.5 / 10.6 & AS 4452 Cl. 10.5	Prevent leaks and spills from occurring and clean up action to be initiated immediately. Adequate spill clean-up equipment and materials (including chemicals for neutralizing spills, where applicable, and absorbent materials) to be provided in DG storage and handling areas. EP to be implemented and consideration given to notifying emergency services.	<i>Refer to Table B.3 in Addendum B above.</i>	✓	Add. B

Table D.13 Fire Protection

Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
General considerations	AS/NZS 5026 Cl. 11.2	Some Class 4 DGs may react violently with water and may generate flammable gas or dust and toxic gases. FW run-off may be hazardous to people and the environment.	Based on the SDS, AIP blankets can react with moisture / water to generate a toxic and flammable gas (PH ₃) which may ignite spontaneously. AIP is also classified as very toxic to aquatic life.	✓	Att. 3 (SDS)
	AS 4452 Cl. 11.2	Consideration to be given to reaction of chemical with water or other chemicals; potential to give off toxic fumes / smoke; and run-off from fires / FW.			
HAZCHEM	ADG Code	Based on the SDS and ADG Code, the HAZCHEM code for AIP is '4WE' : '4' – Dry agent. Water MUST NOT be allowed to come into contact with the product. 'W' – Risk of violent reaction or explosion. Liquid-tight chemical protective clothing and breathing apparatus required. Contain. 'E' – Public safety hazard may exist outside the immediate area. Evacuation to be considered.	Based on the SDS, dry chemical powder and CO ₂ should be used for fighting fires involving AIP, and water MUST NOT be allowed to come into contact with the product. There will be several 9 kg dry chemical powder FEs provided inside the proposed Narngulu DG compound, which could be used for fighting small fires involving AIP. There will also be a FHR installed inside the proposed DG compound, as well as a deluge water sprinkler system in Store PS1, to cool down gas cylinders in the event of a fire (<i>refer to Table F.9 in Addendum F</i>). However, water should not be used for AIP and appropriate warning signage will be displayed on Store PS3.	✓	Add. A (Photos 4, 9, 15, 19, 27 & 28 & DWG. 2014-000-0010, 2014-305-0081 & 251011-LAY / BLK-0001), Att. 2 (DGRA) & Att. 3 (SDS)
Fire protection requirements	AS/NZS 5026 Cl. 11.3.1 (a)	Where Division 4.1 or 4.2 DGs have a Class 3 SR, the fire protection requirements of AS 1940 shall apply.	N/A – The spent AIP blankets to be stored and handled in Store PS3 within the proposed Narngulu DG compound are classified as a Division 4.3 DG with a SR of 6.1 (not a Class 3 SR).	N/A	Att. 1 (Site DG Manifest) & Att. 3 (SDS)
	AS 4452 Cl. 11.3.2(b)	Where toxic substance has a Class 3 SR, the fire protection requirements of AS 1940 to apply.			

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Fire protection requirements (cont'd)	AS/NZS 5026 Cl. 11.3.1 (c) & AS 4452 Cl. 11.3.2(a)	Firefighting equipment designed, installed, operated, tested and maintained according to relevant AS and any other regulatory requirements.	Firefighting equipment (e.g. FEs and FHR) to be provided within the proposed Narngulu DG compound has been designed, and will be installed and operated, as per the relevant AS (e.g. AS 2444 and AS 2441). This firefighting equipment will be inspected and serviced / maintained on a 6-monthly basis (as per AS 1851) by a specialist contractor (Mitchell & Brown Fire Services).	✓	Att. 2 (DGRA)
	AS/NZS 5026 Cl. 11.3.1 (d) & AS 4452 Cl. 11.3.2(c)	All firefighting equipment to be readily accessible at all times.	The dry powder FEs and FHR inside the proposed Narngulu DG compound will be clearly identified by signage and easily accessible. As it is unlikely that the FHR could be safely accessed in a fire, a deluge water sprinkler system (manual and automatic operation) will also be installed inside Store PS1 (<i>although not relevant to Store PS3</i>).	✓	Add. A (Photos 3, 4, 9, 15, 19, 27 & 28 & DWG. 251011-LAY / BLK-0001), Add. F & Att. 2 (DGRA)
	AS/NZS 5026 Cl. 11.3.1 (e) & AS 4452 Cl. 11.3.2(d)	Firefighting connectors / booster connections compatible with local fire authority.	N/A - There are no fire hydrants (FHs) installed at the CBH Narngulu site and, as stated previously, water should not be used to fight fires involving AIP stores.	N/A	Site Inspection & Att. 2 (DGRA)
	AS/NZS 5026 Cl. 11.3.1 (f) & AS 4452 Cl. 11.3.2(g)	Portable fire extinguishers installed in accordance with AS 2444.	The portable dry chemical powder FEs to be provided inside the proposed Narngulu DG compound will be installed in accordance with AS 2444 and, as stated above, will be inspected / maintained every 6 months by a specialist contractor (Mitchell & Brown Fire Services).	✓	Add. A (Photos 4, 15 & 19), & Att. 2 (DGRA)
	AS/NZS 5026 Cl. 11.3.1 (g) & AS 4452 Cl. 8.3.2(f)	Firefighting media to be compatible with the Class 4 / toxic substances stored.	As discussed under 'HAZCHEM' above, according to the SDS, dry chemical powder is a compatible media for fighting fires involving AIP. However, water should not be used, and appropriate warning signage ("IN CASE OF FIRE, DO NOT USE WATER") will be displayed on Store PS3.	✓	Add. A (Photo 4) & Att. 3 (SDS)
	AS 4452 Cl. 11.3.2 (e)	Pressurised water or CO ₂ type FEs not to be kept within 30 m of storage areas for cyanide compounds.	N/A – Store PS3 within the proposed Narngulu DG compound will contain spent AIP blankets and empty foil pouches, and not cyanide compounds.	N/A	Att. 1 (Site DG Manifest) & Att. 3 (SDS)
	AS 4452 Cl. 11.3.2 (h)	SCBA to be used when approaching a fire involving toxic substances.	As per Section 12.2 of the Protect Grain Procedure, SCBA must be worn when approaching a fire involving toxic substances / gases and/or an uncontrolled toxic gas release with concentrations greater than 15 ppm. However, in the unlikely event of a large fire impinging on the proposed Narngulu DG compound, the area would be evacuated and DFES contacted to manage the emergency.	✓	Protect Grain Procedure

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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Equipment compatibility	AS/NZS 5026 Cl. 11.3.2	Fire protection system to be compatible with the DGs stored and local fire authority equipment at essential interfaces.	As above, the FEs to be provided inside the proposed Narngulu DG compound are compatible with the spent AIP blankets stored. However, water (e.g. FHR) is not compatible and should not be used, and appropriate warning signage will be provided on Store PS3.	✓	Add. A (Photos 4 & 19), Add. F, Att. 2 (DGRA) & Att. 3 (SDS)
Location of firefighting equipment	AS/NZS 5026 Cl. 11.3.3	Firefighting equipment to be located so it is reasonably adjacent to the risk and can be easily and safely accessed in an emergency.	As above, the dry powder FEs to be provided inside the proposed Narngulu DG compound will be easily and safely accessible in the event of a small fire, however, the FHR may not and, hence, a water sprinkler system will be installed within Store PS1 (<i>although not relevant to Store PS3</i>).	✓	Add. A (Photos 3, 4, 9, 15, 19, 27 & 28 & DWG. 251011-LAY / BLK-0001) & Att. 2 (DGRA)
System integration	AS/NZS 5026 Cl. 11.3.4	Fire protection equipment to be an independent system or integrated with other fire protection systems.	The FEs, FHR and sprinkler system in the proposed Narngulu DG compound will be independent and not integrated with other fire protection systems.	✓	
Weather protection	AS/NZS 5026 Cl. 11.3.5	Firefighting equipment susceptible to corrosion or weather protected by a sheltered location or enclosure.	The dry chemical powder FEs and FHR provided inside the proposed Narngulu DG compound will be provided with plastic covers for weather protection. The valves and controls for the sprinkler system will be located in a cabinet within the Vehicle Parking Shelter, which will provide weather protection.	✓	
Labelling of firefighting equipment	AS/NZS 5026 Cl. 11.3.6	All firefighting equipment to be clearly marked or labelled as per the relevant AS.	The FEs and FHR to be provided in the proposed Narngulu DG compound will be appropriately labelled and clearly identified with signage.	✓	Add. A (Photos 4, 9, 15 & 27) & Att. 2 (DGRA)
Impact protection	AS/NZS 5026 Cl. 11.3.8	Firefighting equipment, piping and valves to be adequately supported and protected against impact (e.g. vehicles and projectiles).	Location of the firefighting equipment (e.g. FEs, FHR and sprinkler system) within a fenced DG compound, as well as the installation of bollards inside the compound, will adequately protect it from potential impact damage.	✓	Add. A (Photos 2, 4, 9, 19 & 27)
Metallic powders	AS/NZS 5026 Cl. 11.4	<p>Metallic powders can react violently with water, burn fiercely and generate flammable and toxic gases.</p> <p>A notice stating water should not be used and a "USE NO WATER" supplementary fire symbol to be clearly displayed in the storage area.</p>	As per Cl. 4.2.2 (d) in Table D.6 above, AIP can react violently with moisture / water to generate flammable and toxic PH ₃ gas (although this is unlikely within Store PS3 as the AIP blankets will be used / spent). Although AIP is not strictly a metallic powder, signage will be displayed on the outside of Store PS3 stating "IN CASE OF FIRE, DO NOT USE WATER", including a "Use No Water" supplementary fire symbol.	✓	Add. A (Photo 4) & Att. 3 (SDS)
Calcium carbide	AS/NZS 5026 Cl. 11.5	Clause provides specific firefighting requirements related to calcium carbide.	N/A – Calcium carbide will not be kept in Store PS3 within the proposed Narngulu DG compound.	N/A	Att. 1 (Site DG Manifest)
Action in the event of fire	AS/NZS 5026 Cl. 11.6 & AS 4452 Cl. 11.4	Emergency plan to include action in the event of a fire.	Fire and spill scenarios associated with AIP storage and handling will be covered in a new EP to be developed for the proposed Narngulu DG compound (<i>refer to SHARE Action ACT-37372</i>).	✓	Add. B & CBH SHARE System

PROPOSED NARNGULU DG COMPOUND

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Table D.14 Waste Storage and Disposal

Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Storage of wastes	AS/NZS 5026 Cl. 12.2	Facilities to be provided for storage of wastes and items contaminated with Class 4 DGs. Waste packages to be clearly marked.	Store PS3 within the proposed Narngulu DG compound will be a dedicated area for storage of spent AIP blankets and other AIP wastes (e.g. empty foil pouches). This shed / smartlocker will be clearly marked "CAUTION – Waste Storage Area" and provided with appropriate DG placarding and signage.	✓	Add. A (Photos 4, 16 & 19)
	AS 4452 Cl. 12.2	Facilities to be provided for storage of wastes and items contaminated with toxic substances. Waste packages to be clearly marked.			
Items for disposal	AS/NZS 5026 Cl. 12.3	Correct disposal of Class 4 containers, residues, and contaminated materials, empty containers and washings / chemical treatment products used for cleaning empty containers.	<p>When required for use, the AIP drums will be taken out of Store PS2 (<i>refer to Addendum C</i>) and taken to the point of use. Only the quantity of blankets required for the fumigation will be taken and, if a full drum is not required, the blankets in their foil pouches will be removed and placed in another drum. The original AIP drum will be returned to Store PS2 and the number of blankets remaining will be clearly written on the drum (<i>refer to Section 13.10.1 of the CBH 'DG and Chemical Management Plan'</i>).</p> <p>Spent blankets, empty drums and empty foil pouches will be taken back to site. The empty drums will be stored inside Store PS2 or PS3. Spent AIP blankets will be stored in raised, open steel cages inside Store PS3 and the quantity recorded on an 'AIP Residue Log'. Empty foil packaging should no longer be stored in garbina bags (combustible) within Store PS3 and, based on discussions with Fintran, should be placed in the open steel cages with the spent AIP blankets.</p> <p>As detailed below, spent AIP blankets and empty foil pouches will be routinely collected by the supplier (Fintran). The empty steel drums will be collected and recycled by Fintan's contractor (Waste Wise), rather than re-use or disposal at landfill. The requirements for management of AIP wastes are detailed in Section 13.12 of the CBH 'DG and Chemical Management Plan'.</p> <p>Appropriate DG placarding will be provided on the outside of the Waste Storage Area (Store PS3) to warn that it contains Division 4.3 (SR 6.1) waste.</p>	✓	Add. A (Photos 3, 4, 6, 7, 10, 16, 17, 18, 19 & 20) & DG and Chemical Management Plan
	AS 4452 Cl. 12.3	Appropriate waste disposal of toxic residues, spilled toxic substances, empty storage containers and contaminated materials (e.g. spill clean-up equipment / materials that that cannot be returned to service).			



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Aspect	Cl.	Specification	Proposed	Status (✓ or ✗)	Ref.
Pre-disposal treatment of empty containers	AS/NZS 5026 Cl. 12.4.1	Except for Division 4.3 DGs, prior to disposal, empty containers for Class 4 DGs to be decontaminated by: triple rinsing with an appropriate solvent (washings added to material for use or collected for disposal) or chemical neutralization.	N/A – The spent AIP blankets to be stored in Store PS3 within the proposed Narngulu DG compound are a Division 4.3 DG with a Division 6.1 SR.	N/A	Att. 1 (Site DG Manifest) & Att. 3 (SDS)
	AS 4452 Cl. 12.4	Empty containers for toxic substances to be rendered safe / decontaminated by triple rinsing with an appropriate solvent; or chemical neutralisation. Except when containers will be refilled with same toxic substance, labels to be removed or destroyed. Containers not for re-use to be drained, and punctured / crushed to prevent re-use.	As stated above, spent AIP blankets and empty foil pouches will be collected by the supplier (Fintran) for appropriate treatment and disposal by a licensed waste management contractor. Section 13.12 of the CBH 'DG and Chemical Management Plan' details the requirements for safe disposal of the empty AIP containers, i.e. collection and recycling by Waste Wise.	✓	Att. 3 (SDS) & DG and Chemical Management Plan
Disposal treatment for Division 4.3 DGs	AS/NZS 5026 Cl. 12.4.2	Where permitted by local environmental authority, empty Division 4.3 containers should be decontaminated by exposing the residual dust to atmospheric water vapour and allowing gas evolved to disperse by natural ventilation. Except when containers will be refilled with same substance, labels to be removed or destroyed, and containers crushed so that they cannot be re-used. SDS to be consulted for advice on decontamination and disposal of empty containers.			
Methods of disposal	AS/NZS 5026 Cl. 12.5 & AS 4452 Cl. 12.5	All hazardous substances to be disposed of by a method that renders it no longer hazardous. Relevant SDS, local waste disposal authority, EPA and health department (as appropriate) to be consulted on acceptability of proposed methods of disposal.			



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Table D.15 Areas of Non-Conformance and Action Plan

No.	Description	Action Plan	Actionee	Due date	Date Completed	Actionee Comments
-	-	-	-	-	-	-

Refer to SHARE Actions ACT-18536 and ACT-37372.

Compliance Check Summary

This **proposed** – Flammable Solids (Division 4.3, SR 6.1) Waste Storage Area – **complies with** AS/NZS 5026 -2012 and AS 4452-2025.

Compliance is subject to CBH implementing commitments based on the SHARE Actions outlined within this checklist.

Name of assessor: Paul Hathway

Date: 08/05/2026



Signature: _____



PROPOSED NARNGULU DG COMPOUND

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ADDENDUM E



FLAMMABLE SOLIDS HAZID / RISK ASSESSMENT (RA)



PROPOSED NARNGULU DG COMPOUND

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CLASS 4 DANGEROUS GOODS (FLAMMABLE SOLIDS) STORE HAZID / RISK ASSESSMENT – CBH Narngulu <i>(In accordance with the requirements of AS/NZS 5026:2012, Section 2)</i>		DATE: 08 May 2026
		MATERIALS STORED: ALUMINIUM PHOSPHIDE (UN 1397, Division 4.3 / SR 6.1, PG I)
		QUANTITY: 2 t
PREPARED BY Paul Hathway (DG Specialist, CBH Group)		
APPROVED BY: James Newman (Grain Protection Manager, CBH Group)		
GENERAL DESCRIPTION: Store PS2 will be a package store of Aluminium Phosphide (AIP) blankets in closed steel drums (of capacity 20.4 kg, i.e. 12 AIP half blankets (1.7 kg) per drum), within a dedicated 10-foot (ft) freight container. Store PS3 will be a shed / smartlocker for storage of spent AIP blankets (approx. 95% spent) and some other AIP wastes (i.e. empty foil pouches). As the spent AIP blankets will not have been completely de-activated (i.e. they may still be generating PH ₃ gas), they will be classified as Division 4.3 (SR 6.1) DGs. Spent AIP blankets will be stored in open steel cages. Based on advice from Fintran, the empty foil pouches should also be stored in the steel cages and not, as previously, in garbina bags (combustible). The maximum storage quantity on the proposed Narngulu DG Licence will include new AIP blankets and spent AIP blankets within Stores PS2 and Store PS3, respectively, which will both be enclosed within a secured, fenced DG compound. It should be noted that, for risk ranking purposes, the Risk Matrix in the site-wide DGRA (Attachment 2) was used.		

GUIDEWORD	POSSIBLE CAUSES	CONSEQUENCES	Inherent Risk Ranking			EXISTING SAFEGUARDS	Residual Risk Ranking			ACTION REQUIRED	
			L	C	R		L	C	R	DETAILS	BY
NATURE AND QUANTITY											
Toxic gas generation	Highly toxic and potentially flammable gas, phosphine (PH ₃), can be generated during decomposition of AIP as a result of a fire and/or reaction with water.	Fire / explosion and/or inhalation of toxic gases and decomposition products could result in illness / injury or fatality.	3	5	MH(15)	<ul style="list-style-type: none"> AIP packages within Store PS2 will comprise blankets (with Tyvek coating) contained inside gas-tight aluminium foil pouches within closed steel drums. These packages will be stored in a dedicated freight container, which will be provided with adequate natural ventilation (i.e. covered vents in the side walls) and will be painted with an internal anti-condensation coating. Packages will not be opened within the store (<i>refer to Section 13.10.1 of the 'DG and Chemical Management Plan'</i>) and, hence, contact with water / moisture is not considered possible. Spent AIP blankets within Store PS3 may generate PH₃ gas during de-activation, however concentrations are expected to be extremely low (i.e. significantly lower than the LEL for PH₃) and the gas will be diluted / dispersed through natural ventilation of the store (small vents in the side and back walls and a whirlybird vent in the roof). Persons accessing the proposed Narngulu DG compound and associated AIP stores will be required to wear a personal gas monitor (e.g. PAC-8000 or ToxiPro), which would alert them to any PH₃ gas concentrations above 0.3 ppm (8-hour TWA). As per Section 12.2 of the Protect Grain Procedure, in an emergency, GP personnel must wear SCBA when approaching a fire involving toxic substances / gases and/or when there is an uncontrolled PH₃ gas release with concentrations greater than 15 ppm. Warning signs will be provided on the outside of Stores PS2 and PS3 at the proposed Narngulu DG compound stating "IN CASE OF FIRE, DO NOT USE WATER" and including the "USE NO WATER" supplementary fire symbol. Comprehensive work-based DG training (e.g. Fintran stewardship training) is provided to GP personnel, where required, to ensure that they are aware of all hazards and precautions related to AIP. 	1	5	ML(5)		

GUIDEWORD	POSSIBLE CAUSES	CONSEQUENCES	Inherent Risk Ranking			EXISTING SAFEGUARDS	Residual Risk Ranking			ACTION REQUIRED	
			L	C	R		L	C	R	DETAILS	BY
Stability and reactivity	Based on the SDS, AIP blankets should be stored in a cool, dry and well-ventilated area away from direct sunlight, preferably below 30°C.	Potential rupture of AIP packages (steel drums) due to toxic gas release and pressure build up from high temperatures, potentially resulting in personnel illness, injury or fatality	2	5	M(10)	<ul style="list-style-type: none"> AIP packages within Store PS2 will comprise blankets (with Tyvek coating) contained inside gas-tight aluminium foil pouches within a closed steel drum and, hence, rupture / failure is considered extremely unlikely / rare. These AIP packages will not be opened within the store (refer to Section 13.10.1 of the 'DG and Chemical Management Plan'). Although dedicated temperature control will not be provided in Store PS2, there have been no previous incidents at CBH sites related to packages of AIP blankets rupturing and releasing PH₃ gas due to overheating. The supplier (Fintran) stated that temperature control is not required for their product and that current storage conditions at CBH's DG compounds are suitable and, for transparency / traceability reasons, Fintran provided this advice in writing (refer to close-out of SHARE Action ACT-18536). Store PS2 will be a modified, rigid steel freight container with adequate ventilation (i.e. vents in opposite side walls), which would remove any toxic PH₃ gas generated in the extremely unlikely / rare event of package failure (multiple layers of failure) and subsequent reaction of AIP with moisture. There will be limited personnel access to Stores PS2 and PS3, and the proposed Narngulu DG compound generally, and appropriate PPE will be worn when accessing the compound / store, including a personal gas monitor (e.g. PAC-8000 or ToxiPro). 	1	5	ML(5)	Refer to SHARE Action ACT-18536.	
Container capacity and quantities stored and handled	Larger storage quantities resulting in greater impacts and knock-on effects in the event of decomposition / fire.	Greater potential for personnel illness, injury / fatality due to fire / explosion and generation of toxic fumes / PH ₃ gas.	3	5	MH(15)	<ul style="list-style-type: none"> AIP blankets within the proposed AIP Freight Container (Store PS2) will be stored in small packages (i.e. 12 AIP half blankets, of 1.7 kg each, in gas-tight aluminium foil pouches – total 20.4 kg per steel drum). These packages will remain closed at all times within the store (refer to Section 13.10.1 of the 'DG and Chemical Management Plan'). Storage quantities of AIP blankets will be kept to a minimum, where possible. The AIP stores (Stores PS2 and PS3) will be appropriately isolated from other DGs within the proposed Narngulu DG compound (i.e. the Division 2.3 / SR 2.1 gas cylinders in Store PS1) by suitable separation / segregation distances, thereby reducing potential knock-on effects to other stores. Separation distances, including to the site boundary and protected places (onsite / offsite) will be greater than the minimum distances required by AS/NZS 5026 and AS 4452. There will be limited personnel access to Stores PS2 and PS3, and the proposed Narngulu DG compound generally, and appropriate PPE will be worn when accessing the compound / store (including personal PH₃ gas monitors (e.g. PAC-8000 or ToxiPro)). As detailed in Addendum B, CBH will develop an EP for the proposed Narngulu DG compound (refer to SHARE Action ACT-37372), which will include response actions in the event of fires, toxic gas releases and spills. 	1	5	ML(5)	Refer to SHARE Action ACT-37372.	
MANNER OF STORAGE											
Hazardous Area Classification (HAC)	Fixed electrical equipment within the store not rated for correct HAC zones.	Fixed ignition source within the store, potentially igniting flammable gas (PH ₃) causing fire / explosion and release of toxic gas, resulting in personnel illness, injury or fatality.	3	5	MH(15)	<ul style="list-style-type: none"> AIP may generate flammable PH₃ gas however, PH₃ has a LEL of 17,900 ppm and is pyrophoric and, in the event of a loss of containment (LoC) at or above its LEL, would ignite spontaneously on contact with air (without the presence of an ignition source), producing dense white fumes of toxic phosphorous pentoxide. The AIP storage areas (Stores PS2 and PS3) within the proposed Narngulu DG compound will be provided with adequate natural ventilation and there will be no fixed electrics provided inside the stores. 	1	5	ML(5)		

GUIDEWORD	POSSIBLE CAUSES	CONSEQUENCES	Inherent Risk Ranking			EXISTING SAFEGUARDS	Residual Risk Ranking			ACTION REQUIRED	
			L	C	R		L	C	R	DETAILS	BY
Ignition sources (storage and handling)	Portable lighting, mobile phones, forklifts, static electricity, etc.	Portable ignition source within the store, potentially igniting flammable gas (PH ₃) causing fire / explosion and release of toxic gas, resulting in personnel illness, injury or fatality.	3	5	MH(15)	<ul style="list-style-type: none"> Due to the fact that the AIP packages stored within Store PS2 will comprise blankets (with Tyvek coating) contained inside gas-tight aluminium foil pouches within closed steel drums, these packages will not be opened within the store (<i>refer to Section 13.10.1 of the 'DG and Chemical Management Plan'</i>) and adequate natural ventilation will be provided, generation of a HA within the store is not considered credible. The spent AIP blankets within Store PS3 may generate PH₃ gas during de-activation, however concentrations are expected to be extremely low (i.e. significantly lower than the LEL for PH₃) and the gas will be diluted / dispersed through natural ventilation of the store (small wall vents and a whirlybird vent in the roof). Based on gas dispersion modelling undertaken for CBH's KGT site, a HA associated with Store PS3 extending beyond the site boundary, or even existing within the proposed Narngulu DG compound, is not considered possible. As above, AIP may generate flammable PH₃ gas however, PH₃ has a LEL of 17,900 ppm and is pyrophoric and, in the event of a LoC at or above its LEL, would ignite spontaneously on contact with air (without the presence of an ignition source), producing dense white fumes of toxic phosphorous pentoxide. Any hot work within the proposed Narngulu DG compound will be managed in accordance with the CBH Hot Work SOP. Also, as per Section 13.7.2 of the 'DG and Chemical Management Plan', a detailed JSA must be completed prior to any non-routine works being undertaken within the proposed DG compound and all DGs must be removed from the immediate area. As per Section 13.7 of the 'DG and Chemical Management Plan', generation of a HA within the proposed Narngulu DG compound is not considered credible and, hence, there will be no restrictions on carrying or using portable electrical equipment (e.g. cameras and mobile phones). Smoking will be prohibited within the proposed Narngulu DG compound and appropriate warning signage will be provided stating "DANGER – NO SMOKING, NO IGNITION SOURCES". HSE inductions and job-specific training, where required, including training in the handling of DGs (e.g. Fintran stewardship for AIP), ensures that GP personnel are aware of site hazards (including hazardous areas and ignition sources). 	1	5	ML(5)		
Mechanical impact (shock)	Rough handling, dropped packages, vehicle collision, etc.	Shock / friction to AIP packages causing decomposition, potentially causing fire / explosion and generation of toxic gas, resulting in personnel illness, injury or fatality.	3	5	MH(15)	N/A - Based on the SDS and Fintran stewardship training, AIP is not a self-reactive substance that is susceptible to shock / friction.	-	-	-		
Dust combustion	Accumulation of flammable solid / dust on surfaces during handling.	Spontaneous combustion of flammable solids / dusts, potentially causing fire / explosion and generation of toxic gas, resulting in personnel illness, injury or fatality.	3	5	MH(15)	N/A – Although AIP can react with water / moisture to emit toxic and flammable PH ₃ gas, it is not considered to be a flammable solid or self-reactive solid (Division 4.1) or a substance liable to spontaneous combustion (Division 4.2). Also, Stores PS2 and PS3 will only be used for static storage of new AIP blankets and spent (~95%) AIP blankets, respectively, and hence, generation of any AIP solid / dust is considered extremely unlikely.	-	-	-		

GUIDEWORD	POSSIBLE CAUSES	CONSEQUENCES	Inherent Risk Ranking			EXISTING SAFEGUARDS	Residual Risk Ranking			ACTION REQUIRED	
			L	C	R		L	C	R	DETAILS	BY
Contamination during handling	Package opened, unused and returned to the store.	Potential for contamination of AIP blankets (e.g. exposure to moisture / water or incompatible substances) leading to decomposition reaction and release of toxic / flammable gas (PH ₃) resulting in personnel illness, injury or fatality.	3	5	MH(15)	<ul style="list-style-type: none"> AIP blankets will be stored in gas-tight foil pouches inside steel drums within a dedicated freight container (Store PS2). When required for use, the drums will be taken out of the store and taken to the point of use. Only the quantity of blankets required for the fumigation will be taken and, if a full drum is not required, the blankets in their foil pouches will be removed and placed in another drum for transport. The original AIP drum will be tightly closed and returned to Store PS2 and the number of blankets remaining will be clearly written on the drum (refer to Section 13.10.1 of the CBH 'DG and Chemical Management Plan'). As per Section 13.10.1 of the CBH 'DG and Chemical Management Plan', when opening AIP drums, there must be 2 persons present and the person opening the drum must wear a full-face respirator. No AIP contamination incidents have occurred at CBH DG compounds to date. 	1	5	ML(5)		
OPERATIONAL PROCEDURES											
Substance specific operating procedures	GP personnel unfamiliar with procedures / WIs related to storage and handling of DGs (i.e. AIP blankets).	Incorrect storage and handling of AIP blankets leading to exposure to moisture / water and release of toxic / flammable gas (PH ₃) resulting in personnel illness, injury or fatality.	3	5	MH(15)	<ul style="list-style-type: none"> CBH has developed formal plans, SOPs / procedures and WIs for performing work at CBH sites, including plans / procedures related to ER and work management (including the 'DG and Chemical Management Plan', 'Protect Grain Procedure' and associated documentation, which incorporate requirements for AIP storage and handling). These documents form part of CBH's IMS and are readily accessible electronically via CBH's SharePoint (SHARE) system. All CBH site personnel are provided with training in accordance with the 'Training, Awareness and Competency' Group Procedure (STORE-1473931053-395), some of which includes an OA. Training of CBH personnel is managed electronically / online through the 'Success Factors: Learning Management System', which includes a detailed online HSE Induction and identifies requirements for refresher training. Comprehensive work-based DG training (e.g. Fintran stewardship training and DG driver / transport training) is provided to GP personnel, where required, to ensure that they are aware of all hazards and precautions related to AIP. Any persons (including CBH employees, contractors and visitors) required to enter the proposed Narngulu DG compound for the first time must undergo a brief induction specific to the DG compound to advise them of hazards / precautions and ER actions. This induction will be completed electronically in ROAM and records kept in SHARE. There will be limited personnel access to Stores PS2 and PS3, and the proposed Narngulu DG compound generally, and appropriate PPE must be worn when accessing the compound / stores. This will include a personal gas monitor (e.g. PAC-8000 or ToxiPro), which would alert GP personnel to any PH₃ gas concentrations above 0.3 ppm (8-hour TWA). As detailed in Addendum B, CBH will develop an EP for the proposed Narngulu DG compound (refer to SHARE Action ACT-37372), which will include response actions in the event of fires, toxic gas releases and spills, as well as requirements related to evacuation. Refer also to close-out of SHARE Action ACT-18580 regarding development and implementation of a process to ensure that the findings of ER drills / exercises are communicated to all GP personnel. 	1	5	ML(5)	Refer to SHARE Actions ACT-18580 and ACT-37372.	
Training	GP personnel not suitability trained in safe operating procedures / hazard awareness related to storage and handling of DGs (i.e. AIP blankets).										

GUIDEWORD	POSSIBLE CAUSES	CONSEQUENCES	Inherent Risk Ranking			EXISTING SAFEGUARDS	Residual Risk Ranking			ACTION REQUIRED	
			L	C	R		L	C	R	DETAILS	BY
Inspection and Maintenance	Inspections and preventative maintenance not undertaken frequently or not effective.	AIP stores and associated packages in poor condition, leading to exposure to moisture / water and release of toxic / flammable gas (PH ₃) resulting in personnel illness, injury or fatality.	2	5	M(10)	<ul style="list-style-type: none"> The condition of the proposed AIP stores (Stores PS2 and PS3) will be checked on a weekly basis as part of the CBH 'DG Compound Weekly Inspection' in ROAM, which would identify any damage to stores and associated packages. The condition of firefighting equipment within the DG compound, as well as operability of the FHR and safety shower / eyewash, will also be checked on a weekly basis as part of the CBH 'DG Compound Weekly Inspection' in ROAM. Other routine workplace inspections and audits (e.g. Take5, layered audits, CCVs, IMS audits and safety interactions) should also identify any issues related to the condition of the AIP stores and associated packages. Firefighting equipment (e.g. FEs and FHR) at the proposed Narngulu DG compound has been designed, and will be installed and operated, as per the relevant AS (e.g. AS 2444). The firefighting equipment will be inspected and serviced / maintained on a six-monthly basis (as per AS 1851) by a specialist contractor (Mitchell & Brown Fire Services). In the event that any firefighting equipment is found to be damaged / faulty, unserviceable or inoperable, the procedure is to put an "Out of Service" tag on the equipment and report it via the CBH SHARE System. CBH maintenance or GP personnel will then contact Mitchell & Brown Fire Services to repair or replace the equipment. Other unserviceable or inoperable firefighting equipment identified during inspections and testing by Mitchell & Brown Fire Services would also be reported and fixed or replaced by them 	1	5	ML(5)		
		Firefighting equipment or safety equipment (e.g. safety shower / eyewash) unavailable or inoperable in the event of an emergency / fire, leading to inadequate ER and potentially resulting in personnel illness, injury or fatality.	2	5	M(10)		1	5	ML(5)		
Emergency response (ER)	ER procedures, materials and equipment not adequate for dealing with an emergency involving AIP.	Inadequate / ineffective ER in the event of an incident involving AIP, with potential for escalation (e.g. fire / explosion and release of toxic gases) resulting in personnel / public illness, injury or fatality	3	5	MH(15)	<ul style="list-style-type: none"> As detailed in Addendum B, CBH will develop an EP for the proposed Narngulu DG compound, which will include ER actions in the event of fires, toxic gas releases and spills, as well as evacuation requirements (<i>refer to Table B.3 in Addendum B and SHARE Action ACT-37372</i>). Spills (solid) from new AIP blankets in Store PS2 are not considered credible. Spills from spent AIP blankets are possible but highly unlikely, as they will be kept in raised, open steel cages within a closed shed / smartlocker (Store PS3). Any AIP spills will be contained, cleaned-up and disposed of in accordance with the new Narngulu EP (<i>refer to SHARE Action ACT-37372</i>), the SDS and CBH Spill Response WI. The new Narngulu EP (<i>refer to SHARE Action ACT-37372</i>) will list where hard copies of the plan are to be made available and the EP will also be accessible to CBH personnel electronically via SharePoint. The new EP for the proposed Narngulu DG compound will be reviewed and, if required, updated whenever a significant change occurs on site or at least annually. As per Section 12.2 of the Protect Grain Procedure, there is a requirement for CBH DG sites to conduct an annual drill related to transport, storage and fumigation processes and one of these should include a site evacuation and involve the local DFES. Requirements related to annual ER exercises and training will also be included in the new Narngulu EP. Based on the results of toxic gas dispersion modelling conducted for the KGT site (which related to VaporPhos gas cylinder release, not an AIP incident), and due to the remote location of the Narngulu site, it is considered that there is no potential for an incident at the proposed Narngulu DG compound to impact on neighbouring properties. 	1	5	ML(5)	<i>Refer to SHARE Action ACT-37372.</i>	

GUIDEWORD	POSSIBLE CAUSES	CONSEQUENCES	Inherent Risk Ranking			EXISTING SAFEGUARDS	Residual Risk Ranking			ACTION REQUIRED	
			L	C	R		L	C	R	DETAILS	BY
Special PPE for emergency responders	Emergency responders unaware of the special PPE requirements for fighting fires involving AIP (e.g. liquid-tight chemical protective clothing and SCBA) or this special PPE is not readily available.	Potential inhalation of toxic PH ₃ gas fumes during response to an emergency involving AIP, resulting in illness, injury or fatality.	3	5	MH(15)	<ul style="list-style-type: none"> All licensed GP personnel are provided with, and fit tested for, the types of respirators required on site, including SCBA. As per Section 12.2 of the Protect Grain Procedure, in an emergency, GP personnel must wear SCBA when approaching a fire involving toxic substances / gases and/or when there is an uncontrolled PH₃ gas release with concentrations greater than 15 ppm. However, it must be noted that, in the event of a serious emergency involving the proposed Narngulu DG compound, it is possible that the area / site would be evacuated and DFES contacted to manage the incident . DFES personnel would have their own SCBA and appropriate protective firefighting clothing when attending an emergency at the proposed Narngulu DG compound. 	1	5	ML(5)		
Emergency notification to neighbours	Toxic PH ₃ gas plume (due to reaction of AIP blankets with moisture / water) with the potential to impact on a neighbouring site.	Neighbouring site / public not notified of the requirement to evacuate in the event of a toxic gas plume, potentially resulting in illness, injury or fatality of offsite personnel or the public / neighbours.	2	5	M(10)	<ul style="list-style-type: none"> All stores in the proposed Narngulu DG compound will be designed and constructed according to the relevant AS, including meeting required minimum separation distances. Also, due to the proposed method of storage (sealed packages for new blankets and raised, open steel cages for spent blankets) and design / construction of AIP Stores PS2 and PS3 (refer to Addendum C and D, respectively), exposure of AIP blankets to moisture / water and subsequent toxic gas plume with offsite impacts is not considered credible. The new EP for the proposed Narngulu DG compound (refer to <i>Table B.3 in Addendum B and SHARE Action ACT-37372</i>) will include the requirement to notify neighbours in the event of certain emergency scenarios (e.g. where evacuation is required due to fire / toxic gas release) and will provide contact details for neighbours. Based on the results of toxic gas dispersion modelling conducted for the KGT site (which related to VaporPhos gas cylinder release, not an AIP incident), and due to the remote location of the Narngulu site, it is considered that there is no potential for an AIP incident at the proposed Narngulu DG compound to impact on neighbouring properties. 	1	5	ML(5)	Refer to <i>SHARE Action ACT-37372</i> .	
Recovery of spilled product	Dropped / fallen package or any other physical damage to package.	Damage to AIP package, with potential for spill and exposure to moisture / water and release of toxic and flammable gas (PH ₃) resulting in personnel illness, injury or fatality.	2	5	M(10)	<ul style="list-style-type: none"> The new AIP blankets in Store PS2 will have a Tyvek coating and will be contained inside gas-tight aluminium foil pouches within closed steel drums. These drums are rigid packages, which are approved under the ADG Code, and will not be opened within the store (refer to <i>Section 13.10.1 of the 'DG and Chemical Management Plan'</i>). The AIP packages inside Store PS2 will be neatly arranged and stacked (up to 3 high) directly on the steel grating floor and, hence, a spill from new AIP blankets due to dropped or fallen packages is not considered credible. The AIP drums will predominantly be moved by manual handling. Spills from spent AIP blankets due to physical damage are possible but highly unlikely, as they will be stored in raised, open steel cages within a closed shed / smartlocker (Store PS3). Even if damaged, the AIP blankets in Store PS3 will be approximately 95% spent and, therefore, any resulting PH₃ concentrations are expected to be extremely low and would be quickly diluted / dispersed through natural ventilation of the store (small wall vents and a whirlybird vent in the roof). The condition of the AIP stores (Stores PS2 and PS3) within the proposed Narngulu DG compound will be checked on a weekly basis as part of the 'DG Compound Weekly Inspection' in ROAM, which would ensure that any damage to stores and associated packages is identified. In the extremely unlikely event of an AIP spill, it will be contained, cleaned-up and disposed of in accordance with the new Narngulu EP (refer to <i>Table B.3 in Addendum B and SHARE Action ACT-37372</i>), the SDS and CBH Spill Response WI. A shovel, broom and dustpan / brush will be provided inside the proposed Narngulu DG compound. 	1	5	ML(5)	Refer to <i>SHARE Action ACT-37372</i> .	

GUIDEWORD	POSSIBLE CAUSES	CONSEQUENCES	Inherent Risk Ranking			EXISTING SAFEGUARDS	Residual Risk Ranking			ACTION REQUIRED	
			L	C	R		L	C	R	DETAILS	BY
Permit systems	No formal permit to work (PTW) systems (e.g. Hot Work) or PTW systems not followed.	Ignition source introduced within the AIP stores, potentially leading to fire / explosion and personnel injury / fatality.	3	5	MH(15)	<ul style="list-style-type: none"> The AIP packages within Store PS2 will comprise blankets (with Tyvek coating) contained inside gas-tight aluminium foil pouches within closed steel drums, and these packages will not be opened within the store (<i>refer to Section 13.10.1 of the CBH 'DG and Chemical Management Plan'</i>), hence generation of a HA within the store is not considered credible. Also, Store PS2 will be provided with adequate natural ventilation. Spent AIP blankets within Store PS3 may generate PH₃ gas during de-activation, however concentrations are expected to be extremely low (i.e. significantly lower than the LEL for PH₃) and the gas will be diluted / dispersed through natural ventilation of the store (small wall vents and a whirlybird vent in the roof). A HA associated with Store PS3 extending beyond the site boundary, or even existing within the proposed Narngulu DG compound, is not considered possible based on modelling undertaken for the KGT DG compound. Any hot work within the proposed Narngulu DG compound will be managed in accordance with the CBH Hot Work SOP. Also, as per Section 13.7.2 of the CBH 'DG and Chemical Management Plan', a detailed JSA must be completed prior to any non-routine works being undertaken within the compound and all DGs must be removed from the immediate area. As per Section 13.7 of the 'DG and Chemical Management Plan', generation of a HA within the proposed Narngulu DG compound is not considered credible and, hence, there will be no restrictions on carrying or using portable electrical equipment (e.g. cameras and mobile phones). Appropriate warning signage will be provided around the proposed Narngulu DG compound stating "DANGER – NO SMOKING, NO IGNITION SOURCES". HSE inductions and job-specific training, where required, including training in PTW and handling of DGs (e.g. Fintran stewardship for AIP), ensures that GP personnel are aware of site hazards (including hazardous areas and ignition sources). 	1	5	ML(5)		
Alarm system	Reliability of fire / evacuation alarms.	Inability to activate the site fire / evacuation alarm, resulting in site personnel being unaware of an emergency situation (e.g. fire / explosion and toxic gas plume) with potential for personnel illness, injury or fatality.	3	5	MH(15)	<ul style="list-style-type: none"> N/A – There will be no site fire alarm / evacuation siren at the Narngulu site. The new EP to be developed for the proposed Narngulu DG compound (<i>refer to SHARE Action ACT-37372</i>) will include that, in the event that an emergency situation is identified, the alarm can be raised by any person verbally via 2-way radio or telephone and, if deemed necessary, the site evacuation can be ordered by the Emergency Control Manager (ECM). 	1	5	ML(5)	<i>Refer to SHARE Action ACT-37372.</i>	

GUIDEWORD	POSSIBLE CAUSES	CONSEQUENCES	Inherent Risk Ranking			EXISTING SAFEGUARDS	Residual Risk Ranking			ACTION REQUIRED	
			L	C	R		L	C	R	DETAILS	BY
Incompatible materials	Storage of incompatible materials within the store without adequate segregation.	Contamination of AIP blankets with incompatible substances (e.g. acids, oxidising agents and some metals) leading to fire / generation of toxic fumes and potentially resulting in personnel illness, injury or fatality	3	5	MH(15)	<ul style="list-style-type: none"> As part of the DG licensing process, and detailed compliance checks (refer Addendum C and D) in this DGRA, the proposed AIP storages (Stores PS2 and PS3) have been assessed against relevant AS, including compliance with specified minimum segregation and separation distances. Within the proposed Narngulu DG compound, there will be separate / dedicated stores for new AIP blankets in sealed packages inside a modified freight container (Store PS2) and spent AIP blankets in raised, open steel cages inside a closed shed / smartlocker (Store PS3). Only AIP, and no other DGs or incompatible substances, will be stored within Stores PS2 and PS3. Within the proposed Narngulu DG compound, there will also be a separate, dedicated Gas Cylinder Store (Store PS1) containing Class 2 (predominantly Division 2.3) gas cylinders. Based on the SDSs (Section 10), AIP blankets and the gas cylinders to be stored are not incompatible / will not react dangerously, however, VaporPhos (Division 2.3 / SR 2.1) and AIP should not be transported together (Section 14) and the firefighting requirements of AIP and VaporPhos are very different and incompatible (refer to Addendum F). Comprehensive work-based DG training (e.g. Fintran stewardship training and DG driver / transport training) is provided, where required, to GP personnel to ensure that they are aware of all hazards and precautions related to AIP, including incompatibilities. No AIP contamination incidents have occurred at CBH DG compounds. 	1	5	ML(5)		
Safeguards and risk assessment review	Review of DG risk assessment not undertaken when changes occur – hazards / risks not managed SFARP.	Hazards associated with AIP storages are not adequately identified, assessed and controlled, potentially resulting in personnel injury / fatality and non-compliance with regulatory requirements (<i>risk ranking based on Safety</i>).	3	5	MH(15)	<ul style="list-style-type: none"> As per r. 48 of the WA DG Regs, the site DGRA must be reviewed and, if required, updated if there is a significant change to any process or system of work related to DG storage and handling; if there is evidence that the DGRA no longer adequately assesses the risks; if a reportable situation / incident occurs at the DG site; or at least every 5 years. This would involve review of the detailed assessment / compliance checks against the relevant AS (Addenda B, C, D and F; this Class 4 HAZID / RA (Addendum E); and the site-wide DGRA against the DG Regs (Attachment 2). The requirements of r. 48 are clearly stated in Section 12.5 of the CBH 'DG and Chemical Management Plan'. The site DGRA must also be reviewed and updated, as part of the DG Licence Amendment process, whenever there is a change in DG storages (e.g. types, quantities and storage methods) on site. The CBH 'Hazard, Risk and Change Management' Group Procedure (STORE-1473931053-382) also identifies requirements for risk assessments as part of the Change Management process. 	1	5	ML(5)		
ACCESS TO STORE											
Room for access / egress to store during normal and emergency operations	Clear access to / egress from the store is not provided.	Potential for personnel injury (e.g. trips, falls, etc.) when entering or exiting the store.	3	2	ML(6)	<ul style="list-style-type: none"> The AIP stores (Stores PS2 and PS3) in the proposed Narngulu DG compound will be located at ground level (although the ground / concrete slab will be raised slightly to prevent flooding and a concrete apron provided) and there will be clear / easy access to / egress from the stores (once the compound gate is unlocked). Accessways around the DG stores within the compound will be clearly demarcated by yellow painted lines. A 15 m exclusion zone will be maintained around the proposed Narngulu DG compound and appropriate warning signage displayed on the fence (i.e. "NO PARKING OR STANDING WITHIN 15 METRES OF COMPOUND") to ensure that the required clearance is maintained. Any access or housekeeping issues associated with the AIP stores (Stores PS2 and PS3), and proposed Narngulu DG compound generally, would be identified during regular inspections using the CBH 'DG Compound Weekly Inspection' in ROAM. 	2	2	L(4)		
		Inability for emergency personnel to easily access the store to respond during an emergency with potential for escalation (e.g. fire / explosion and release of toxic gases) resulting in personnel illness, injury or fatality.	2	5	M(10)		1	5	ML(5)		

GUIDEWORD	POSSIBLE CAUSES	CONSEQUENCES	Inherent Risk Ranking			EXISTING SAFEGUARDS	Residual Risk Ranking			ACTION REQUIRED	
			L	C	R		L	C	R	DETAILS	BY
Lighting to allow clear access / egress	No / inadequate lighting provided inside and outside the DG store.	Potential for personnel injury (e.g. trips, falls, etc.) while handling DGs in the storage area due to unsafe working conditions (i.e. insufficient lighting).	3	2	ML(6)	<ul style="list-style-type: none"> The AIP stores (Stores PS2 and PS3) within the proposed Narngulu DG compound will not be provided with any fixed lighting (inside), as the stores (and compound) will not normally be accessed outside daylight hours. However, the proposed DG compound will be provided with some motion-activated security lighting (and a light within the Vehicle Parking Shelter). There are some floodlights to the north-west of the proposed Narngulu DG compound near the weighbridges, as well as some floodlights around the site office / amenities. Deliveries of DGs to, and movement of DG packages within, the proposed Narngulu DG compound will not take place outside daylight hours. 	1	2	L(2)		
Access to DGs within store	Difficulty accessing DG packages within the store due to dense stacking or poor housekeeping.	Potential for personnel injury (e.g. trips, falls, muscle strains, etc.) when accessing DG packages within the AIP stores.	3	2	ML(6)	<ul style="list-style-type: none"> AIP packages (blankets in gas-tight foil pouches within steel drums) inside the AIP Freight Container (Store PS2) will be neatly arranged and stacked (up to 3 high) directly on the steel grating floor and, hence, CBH personnel will be able to easily and safely access them at all times. Due to the method of storage of spent AIP blankets within Store PS3 and the dimensions of the shed / smartlocker (i.e. only 3.65 m in length and 1.4 m wide), CBH personnel will be able to easily and safely access the waste storage containers (i.e. raised, open steel cages) at all times. Any access or housekeeping issues associated with the proposed AIP stores (Stores PS2 and PS3) would be identified during regular inspections using the CBH 'DG Compound Weekly Inspection' in ROAM. 	1	2	L(2)		
SURROUNDING LAND USE											
Impact of onsite emergency on neighbouring properties	Fire / toxic PH ₃ gas plume with the potential to impact on a neighbouring site.	Potential for illness, injury or fatality of the public / neighbours.	<i>Refer to 'Emergency notification to neighbours' above</i>			<i>Refer to 'Emergency notification to neighbours' above.</i>	<i>Refer to 'Emergency notification to neighbours' above</i>				
Offsite emergency impacting on CBH site	Incident at a surrounding property impacting (knock on effects) on the proposed Narngulu DG compound and associated AIP stores.	N/A – The CBH Narngulu site is in a remote, rural location and, hence, the proposed Narngulu DG compound will be located at least 800 m from the nearest property (farm north of Arthur Road). Hence, an offsite emergency impacting on the proposed Narngulu DG compound and associated AIP stores is not considered credible.	-	-	-	N/A	-	-	-		
Evacuation / protection of all affected personnel	No formal plan / procedure for evacuation and protection of onsite personnel in an emergency.	Inappropriate ER / site evacuation in the event of a fire / explosion and release of toxic gas (PH ₃), with subsequent personnel illness, injury or fatality.	3	5	MH(15)	<ul style="list-style-type: none"> As detailed in Addendum B, CBH will develop an EP for the proposed Narngulu DG compound, which will include ER actions in the event of fires, toxic gas releases and spills, as well as requirements related to evacuation (<i>refer to Table B.3 in Addendum B and SHARE Action ACT-37372</i>). The new Narngulu EP will list where hard copies of the plan are to be made available and it will also be accessible to CBH personnel electronically via SharePoint. The new Narngulu EP will be reviewed and, if required, updated whenever a significant change occurs on site or at least annually. As stated in Section 12.2 of the Protect Grain Procedure, there is a requirement for CBH DG sites to conduct an annual drill related to transport, storage and fumigation processes and one of these should include a site evacuation and involve the local DFES. Annual ER exercises and training will also be included in the new EP to be developed for the proposed Narngulu DG compound (<i>refer to SHARE Action ACT-37372</i>). 	1	5	ML(5)	<i>Refer to SHARE Action ACT-37372.</i>	

GUIDEWORD	POSSIBLE CAUSES	CONSEQUENCES	Inherent Risk Ranking			EXISTING SAFEGUARDS	Residual Risk Ranking			ACTION REQUIRED	
			L	C	R		L	C	R	DETAILS	BY
Proximity to environmentally sensitive areas	Class 4 DG incident (i.e. spill of solid AIP) impacting on environmentally sensitive areas.	Spills of solid AIP or a release of PH ₃ above its LEL generating phosphorous pentoxide / phosphoric acid, resulting in runoff of contaminated water into environmentally sensitive areas (e.g. lakes and waterways) leading to contamination and potential mortality of aquatic organisms.	2	2	L(4)	<ul style="list-style-type: none"> There appear to be no environmentally sensitive areas within at least 1 km of the proposed Narngulu DG compound. However, any run-off of contaminated stormwater / FW (potentially containing AIP) from the DG compound would be directed to a wastewater collection area (an HDPE-lined bund) outside the compound to the north-east, which will include an isolation point (i.e. PVC pipe with cap). As per Section 13.11 of the 'DG and Chemical Management Plan', the purpose of this area is to capture any stormwater / FW in the event of an incident so that it can be drained away following a visual inspection to ensure no contamination. A spill (solid) from unused AIP blankets is not considered credible, as they will be stored in sealed packages (gas-tight aluminium foil pouches inside steel drums) within a locked freight container (Store PS2) and will not be opened within the store (refer to Section 13.10.1 of the CBH 'DG and Chemical Management Plan'). Spills (solid) from spent AIP blankets are possible but highly unlikely, as they will be kept in raised, open steel cages within a closed shed / smartlocker (Store PS3). A shovel, broom and dustpan / brush will be provided inside the proposed Narngulu DG compound. Also, as above, any run-off of potentially contaminated stormwater / FW from the DG compound would be directed to a HDPE-lined wastewater collection area outside the compound. Any spills will be contained, cleaned-up and disposed of in accordance with the new EP to be developed for the proposed Narngulu DG compound (refer to Table B.3 in Addendum B and SHARE Action ACT-37372), the relevant SDS and CBH 'Spill Response WI'. <p><i>Note</i> - Section 12 of the SDS for AIP blankets indicates that AIP will break down spontaneously in the presence of water to generate PH₃ gas and, hence, poses no risk of contamination to soil, groundwater or surface waters. However, the SDS contradicts this by stating that AIP is very toxic to aquatic organisms.</p>	1	2	L(2)	Refer to SHARE Action ACT-37372.	
Proximity to protected places / boundaries	DG incident involving AIP impacting on protected places or site boundaries.	Potential for personnel or public illness, injury or fatality due to exposure to toxic / flammable gas (PH ₃).	2	5	M(10)	<ul style="list-style-type: none"> As per Tables C.7 and C.10 in Addendum C and Tables D.7 and D.10 in Addendum D, separation distances from the AIP stores (Stores PS2 and PS3) to the site boundary and protected places (onsite / offsite) will be greater than minimum distances required by AS/NZS 5026 and AS 4452. As mentioned above, based on the results of toxic gas dispersion modelling conducted for the KGT site (which related to VaporPhos gas cylinder release, not an AIP incident), and due to the remote location of the Narngulu site, it is considered that there is no potential for an AIP incident at the proposed Narngulu DG compound to impact on neighbouring properties. 	1	5	ML(5)		

Areas of Non-Conformance and Action Plan

No.	Action Plan	Actionee	Due date	Date Completed	Reference / Comments
-	-	-	-	-	-

Notes:

For the risk ranking section of the above tables, the following abbreviations are used:

- C - Consequence
- L - Low (under 'R' column)
- MH - Medium High (under 'R' column)
- ML - Medium Low (under 'R' column)
- L - Likelihood
- M - Medium (under 'R' column)
- R - Risk



PROPOSED NARNGULU DG COMPOUND

Dangerous Goods Risk Assessment

ADDENDUM F

GAS CYLINDER STORE (STORE PS1)



PROPOSED NARNGULU DG COMPOUND

Dangerous Goods Risk Assessment

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Table F.1 Storage and Accreditation Details


Storage No:	Proposed Narngulu DG Compound – Gas Cylinder Store (Store PS1)									
Material stored										
- UN No.	Various (refer to Table F.2 below)									
- shipping name	Various (refer to Table F.2 below)									
- common name	Various (refer to Table F.2 below)									
Division / PG	Various (refer to Table F.2 below)									
Storage quantity	Division 2.2 – 1.8 kL Division 2.3 – 0.8 kL Division 2.3 (SR 2.1) – 1.6 kL									
Other details	<p>Store PS1 will be a store of various types of gases in cylinders (predominantly Division 2.3 – VaporPhos and EcoFume) in locked cages / enclosures within the proposed Narngulu DG compound.</p> <p>The aggregate quantity of gases to be stored will be greater than 2,000 L (minor storage quantity) and the storage quantity of Division 2.3 gases (2,400 L) will be greater than the quantity specified in Table 2.1 of AS 4332 (i.e. 50 L), hence, Store PS1 cannot be considered a minor store in accordance with AS 4332. It should be noted that, as the quantity of Division 2.2 gas (compressed nitrogen (N₂)) to be stored will be less than 'manifest' quantities under Schedule 1 of the WA DG Regs (i.e. 10,000 L) it does not need to be included on the DG Licence. However, N₂ may be stored in quantities greater than 'placarding' levels under Schedule 1 and, hence, it is listed in the Draft Site DG Manifest (Attachment 1).</p> <p>NOTE: This store will be relocated from West End to the proposed new Narngulu location and, hence, the design / construction is identical.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Auditor / Assessor</td> <td>Paul Hathway</td> </tr> <tr> <td>Accreditation No.</td> <td>6IM-106</td> </tr> <tr> <td>Date Assessed</td> <td>08 May 2026</td> </tr> <tr> <td>Method of Assessment</td> <td>AS 4332–2004: The storage and handling of gases in cylinders was used for this assessment as per the requirements of the DG Regs. Compliance with the relevant requirements of the Asia Industrial Gases Association (AIGA) Code of Practice (CoP) for Phosphine (AIGA 051/20) was also verified (refer to Table F.11 below).</td> </tr> </table>	Auditor / Assessor	Paul Hathway	Accreditation No.	6IM-106	Date Assessed	08 May 2026	Method of Assessment	AS 4332–2004: The storage and handling of gases in cylinders was used for this assessment as per the requirements of the DG Regs. Compliance with the relevant requirements of the Asia Industrial Gases Association (AIGA) Code of Practice (CoP) for Phosphine (AIGA 051/20) was also verified (refer to Table F.11 below).
Auditor / Assessor	Paul Hathway									
Accreditation No.	6IM-106									
Date Assessed	08 May 2026									
Method of Assessment	AS 4332–2004: The storage and handling of gases in cylinders was used for this assessment as per the requirements of the DG Regs. Compliance with the relevant requirements of the Asia Industrial Gases Association (AIGA) Code of Practice (CoP) for Phosphine (AIGA 051/20) was also verified (refer to Table F.11 below).									

Table F.2 Store Gas Inventory

Shipping Name	Common Name	UN No.	Division	SR	PG	Maximum Volume (kL)
DIVISION 2.2						
NITROGEN, COMPRESSED	Nitrogen	1066	2.2	-	-	1.8 kL
Total Quantity Division 2.2						1.8 kL
DIVISION 2.3						
PHOSPHINE	Vaporph3os Phosphine Fumigant	2199	2.3	2.1	-	1.6 kL
LIQUEFIED GAS, TOXIC, N.O.S. (Phosphine)	Eco2Fume Fumigant Gas	3162	2.3	-	-	0.8 kL
Total Quantity Division 2.3						2.4 kL

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Table F.3 Scope and General

Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
Scope – General & Application of Standard	1.1	Standard applies to gases classified as Class 2 substances according to the ADG Code.	The Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound will contain non-flammable, non-toxic gas (Division 2.2), toxic gases (Division 2.3) and toxic and flammable gas (Division 2.3, SR 2.1) and, therefore, this standard applies.	✓	Att. 1 (Site DG Manifest) & Att. 3 (SDS)
		Standard applies to: (a) Storage of gas in cylinders where cylinders are not connected to any gas transport, filling or reticulation system. (b) Bundled (manifolded) cylinders not connected for use.	The gas cylinders within Store PS1 at the proposed Narngulu DG compound will be for static storage only, i.e. they are not manifolded and/or connected to any gas transport, filling or reticulation system. Therefore, this standard applies.	✓	Add. A (Photos 11, 13, 14, 21, 22, 23, 24 & 25)
Cylinder	1.4.5	Gas cylinders to be designed as per the requirements of the AS 2030 series.	The gas cylinders within Store PS1 at the proposed Narngulu DG compound will be supplied by reputable companies (e.g. BOC, Coregas and Cytac / Solvay), will comply with the requirements of the ADG Code and will be designed as per the requirements of AS 2030 (or equivalent international code, e.g. ISO 9089-1:2010).	✓	Add. A (Photos 11, 13, 14, 21, 22, 23, 24 & 25) & Solvay email (dated 26/03/20)

Table F.4 Minor Storage

Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
Scope of section	2.1	Specifies criteria for 'minor storage' classification and requirements for gases in cylinders.	N/A – The Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound will not be considered a minor storage because the aggregate quantity of gases to be stored exceeds 2,000 L and the individual quantity of Division 2.3 gases exceeds 50 L.	N/A	Table F.2 & Att. 1 (Site DG Manifest)
Minor storage classification	2.3 & 2.4	Gases not exceeding quantities in Table 2.1 are classified as minor stores. Where these stores are of mixed gas classes, total quantity not to exceed 2,000 L, and each subclass not to exceed Table 2.1 quantities.			
Precautions for storage in minor quantities	2.5, 2.6, 2.7, 2.8 & 2.9	These Clauses of AS 4332 detail precautions and recommendations related to minor storage of gases in cylinders (indoors and outdoors).			

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Table F.5 Transit Storage

Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
Definition & scope of section	1.4.32 & 3.1	Section applies to temporary storage (not less than 12 hours and not more than 3 working days) of gases in cylinders and of other DGs within same storage area, when in transit.	N/A – The gas cylinders within Store PS1 at the proposed Narngulu DG compound will be stored for periods longer than those stipulated as transit storage in Cl. 1.4.32.	N/A	Att. 1 (Site DG Manifest)
Delineation of transit storage areas	3.2	2 or more transit storage areas for gases in cylinders deemed to be separate storage areas if at least 15 m apart.			
Requirements of transit storage	3.3	Details requirements applicable to transit storage of gases in cylinders and of other DGs being held in the same area.			

Table F.6 Construction and Location of Stores

Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
Scope of section	4.1	Section applies to gas cylinder storage exceeding the maximum quantities classified as minor (Section 2) and not considered transit storage (Section 3).	As detailed in Tables F.4 and F.5 above, the Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound would not be considered a minor store or a transit storage and, therefore, Section 4 of AS 4332 is applicable.	✓	Att. 1 (Site DG Manifest)
Requirements for the construction of stores - General	4.2.1	A gas cylinder store may be indoor or outdoor, however, indoor storage to be avoided where possible.	The Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound will be considered an outdoor store.	✓	Add. A (Photos 11, 13, 14, 21, 22, 23, 24 & 25)
		(a) Gas cylinder stores to be located on the ground floor.	Gas cylinders within Store PS1 will be stored on a level, concrete floor at ground level (although the ground / concrete slab will be raised slightly to prevent flooding and a concrete apron provided) inside roofed, fenced enclosures.	✓	
		(c) Any space between ground floor and ground to be completely filled with non-combustible solid material or totally open on at least 2 sides and materials not to be kept or allowed to accumulate in any such space.	N/A – The gas cylinders in Store PS1 within the proposed Narngulu DG compound will be located on a concrete floor and there will be no space between the floor and ground.	N/A	Add. A (Photos 2, 13, 14, 21, 22 & 23 & DWG. 2014-000-0011 & 2025-307-0575)
		(d) Any gas cylinder store that is attached to, or located inside, a building to be separated from the remainder of the building by one or more walls with a FRL of at least 240/240/240.	N/A – The Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound will not be attached to, or located inside, any building.	N/A	
		(e) Floor above any gas cylinder store in a multi-storey building to be constructed from materials with a FRL of at least 180/180/180.	N/A – There will be no floor above the Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound.	N/A	

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Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.	
Requirements for the construction of stores – General (cont'd)	4.2.1	(b) and (f) Base of the store to be level. Base, walls, floor and roof constructed from non-combustible materials that can maintain integrity under all weather conditions.	The materials of construction for the storage area (i.e. concrete floor, corrugated steel roof, combination corrugated and steel mesh sheeting for the back and side walls, and steel mesh sheeting front) will be non-combustible and should maintain integrity under all weather conditions.	✓	Add. A (Photos 2, 11, 13, 14, 21, 22 & 23 & DWG. 2014-000-0011 & 2025-307-307-0575)	
		(g) Where there are any penetrations through a wall or barrier, the FRL of the wall / barrier not to be compromised and any openings to be vapour tight.	N/A – The construction of the Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound will not include any penetrations through a building wall or barrier.	N/A		
		(h) Openings through a wall that comprises a cavity, or is constructed from bricks / blocks that incorporate cavities, to include a metal sleeve to prevent gas leakage into the cavities.	N/A – The construction of the Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound will not incorporate any openings through walls comprising a cavity.	N/A		
			(j) Bollards, crash barriers or other suitable protective devices to be provided where there is risk of damage by vehicular impact.	Although the Gas Cylinder Store (Store PS1) will be contained within a fenced / locked DG compound that will not be regularly accessed by vehicles, bollards will be provided in front of the fenced enclosures / storage areas to protect against any potential impact damage.	✓	Add. A (Photos 2 & 14) & Att. 2 (DGRA)
			(k) Electrical fittings to be installed where cylinders cannot impact them.	The only flammable gas to be stored within the Gas Cylinder Store (Store PS1) is VaporPhos, which has a Division 2.1 SR. However, there will be no fixed electrics installed within Store PS1. External security lighting, electrical sockets and a small electric pump will be provided at the Vehicle Parking Shelter within the proposed Narngulu DG compound, however these will be more than 8 m away from Store PS1. The design of Store PS1 also provides good natural ventilation. Appropriate warning signage will be displayed around the proposed DG compound, including on the front of the gas cylinder cages, stating “DANGER – NO SMOKING, NO IGNITION SOURCES”.	✓	Add. A (Photos 2, 9, 11, 13, 14, 21, 22, 23 & 26 & DWG. 2014-000-0011 & 2025-307-0575) & Att. 2 (DGRA)
			(l) Electrical equipment in stores containing flammable gases to be designed and installed in accordance with AS/NZS 3000.			
			(m) No ignition sources to be located in a store containing flammable gases.			
		4.2.1	(n) Potential generation of static electricity to be controlled as per AS/NZS 1020.	As stated immediately above, the only flammable gas to be stored in Store PS1 is VaporPhos. However, the SDS for VaporPhos has no specific warnings regarding generation of static electricity. Also, VaporPhos is pyrophoric and, in the event of a LoC, would ignite spontaneously on contact with air (if above the LEL), producing dense white fumes of phosphorous pentoxide.	✓	Att. 2 (DGRA) & Att. 3 (SDS)
			(o) Cl. 6.2.1 (Planning for emergencies) to be met.	Refer to Table B.3 in Addendum B .	✓	Add. B

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Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
Requirements for the construction of stores – General (cont'd)	4.2.1	(p) Doors to store must open outwards or be of ventilated roller type that can be opened from inside the store.	The gas cylinder storage enclosures within Store PS1 will have steel mesh sliding gates. The main access gates to the proposed Narngulu DG compound and all emergency exit gates will open outwards.	✓	Add. A (Photos 2, 14, 21, 22 & 23 & DWG. 2014-000-0011 & 2025-307-0575)
		(q) Outdoor stores for Class 2 gases to be at least 1 m away from doors, vents, windows or ducts.	There will be no doors, vents, windows or ducts (not associated with the proposed DG compound) within 24 m of Store PS1 at the CBH Narngulu site.	✓	Add. A (Photos 2, 13, 14, 21, 22 & 23 & DWG. 2025-307-0573 / 0575)
Lighting	4.2.1(i) & 4.2.2	(a) Sufficient lighting to provide safe working conditions and allow people to read signs, markings, instruments and other necessary items.	Store PS1 will not be provided with any fixed lighting (inside), as the store (and compound) will not normally be accessed outside daylight hours. However, the proposed DG compound will be provided with some motion-activated security lighting (and a light in the Vehicle Parking Shelter).	✓	Site Inspection, Add. A (Photos 2, 9, 13, 14, 21, 22, 23 & 30 & DWG. 2014-000-0011 & 2025-307-0575) & Att. 2 (DGRA)
		4.2.2	(b) Interior lighting to be of at least the luminance specified in the relevant part of AS/NZS 1680.	N/A – Store PS1 within the proposed Narngulu DG compound will be located outdoors and, hence, there will be no interior lighting.	
		(c) Sufficient lighting to be provided on internal roads that lead to areas, rooms or buildings where gases are kept or handled.	There are some floodlights to the north-west of the proposed Narngulu DG compound near the weighbridges, as well as some floodlights around the site office / amenities.	✓	
		(d) Where in a hazardous zone, or where an explosive atmosphere may exist, reference to be made to AS/NZS 60079.10.1.	Based on AS/NZS 60079, a Zone 2 HA may exist around a flammable gas cylinder as follows: 0.5 m above and laterally from the cylinder valve; and 1.5 m laterally from the cylinder base. As above, the only flammable gas to be kept in Store PS1 is VaporPhos. Adequate natural ventilation will be provided in the store and there will be no fixed electrics in Store PS1 or within approximately 8 m. As mentioned previously, VaporPhos is pyrophoric and, in the event of a LoC at or above the LEL, would ignite spontaneously on contact with air (without the presence of an ignition source), producing dense white fumes of phosphorous pentoxide.	✓	
Outdoor stores	4.2.3	Outdoor store to be fenced, secured against unauthorized access, free standing, not less than 40% of its wall area fully open, and may or may not have a roof.	The gas cylinders in Store PS1 will be stored inside roofed, fenced, padlocked enclosures with >40% of the wall area fully open. The proposed Narngulu DG compound, within which Store PS1 will be located, will be a secure fenced area with locked gates (with restricted key access).	✓	Add. A (Photos 2, 5, 13, 14, 21, 22 & 23 & DWG. 2014-000-0011 & 2025-307-0575) & Att. 2 (DGRA)

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Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
Ventilation - General	4.3.1	Ventilation (natural or mechanical) to be provided to dilute or remove any vapour or gas from the store (to levels within workplace exposure limits and below possible explosive limits) and provide sufficient air to reduce any risk of asphyxiation. Atmosphere within the store to be ventilated at high and low levels.	As detailed under Cl. 4.3.2 below, the Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound will be provided with sufficient natural ventilation to maintain gas concentrations to below workplace exposure limits and possible explosive limits, and reduce any risk of asphyxiation.	✓	Add. A (Photos 2, 13,14, 21, 22 & 23 & DWG. 2014-000-0011) & Att. 2 (DGRA)
Natural ventilation	4.3.2.1	Natural ventilation to comprise one of the following:		✓	Add. A (Photos 13, 14, 21, 22 & 23 & DWG. 2014-000-0011 & 2025-307-0575), Att. 2 (DGRA) & Att. 3 (SDS)
		(a) 2 opposite sides fully open, i.e. from floor to ceiling (refer Figure 4.1(a)).	The front of the Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound will be completely open and will have a total length of 12 m, which is significantly more than twice the distance to the opposite side (i.e. 2 m). Upper and lower sections of the back and side walls will also be open. Hence, Store PS1 will be provided with adequate natural ventilation in accordance with the requirements of Cl. 4.3.2.1(b).		
		(b) 1 external side open, as long as the length of the open side is at least twice the distance to the opposite side (refer Figure 4.1(b)).			
		c) Vents in at least one pair of opposing external sides (refer Figure 4.1(c)) as long as: (i) the distance between opposing walls is less than 10 m; (ii) in every 2 m length of opposing walls there are at least 2 vents (1 immediately above the floor and the other immediately below the ceiling); (iii) total area of vents per 1 m of wall is >0.1 m ² ; and (iv) vents are evenly distributed.	N/A – No vents will be installed for the Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound, as it will be provided with adequate natural ventilation in accordance with the requirements of Cl. 4.3.2.1(b) (<i>refer above</i>).	N/A	
	4.3.2.2	High-level ventilation (e.g. vents provided in the roof ridge or highest point of any roof) to be provided where lighter-than-air gases are present, to prevent accumulation.	N/A - The Division 2.2 and 2.3 gases to be stored are heavier than air. As above, the front of Store PS1 will be completely open and the upper and lower sections of the back and side walls will also be open, which would prevent accumulation of any released gases.	N/A	Add. A (Photos 13, 14, 21, 22 & 23 & DWG. 2014-000-0011 & 2025-307-0575) & Att. 3 (SDS)
Mechanical ventilation	4.3.3	Cl. 4.3.3 details the requirements for mechanical ventilation systems comprising fans, ducts, entry / exit registers and controls and, where required, fire dampers.	N/A – As stated under Cl. 4.3.2.1 above, adequate natural ventilation will be provided for the Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound.	N/A	
Separation distances	4.4.1	2 or more gas cylinder stores can be regarded as separate stores if they are separated by at least 3 m or the relevant distance to a protected place (Item 1) given in Table 4.1. whichever is the greater. Separation distances can be measured around a screen wall if it has a FRL of at least 240/240/240.	N/A - Item 1 of Table 4.1 requires a minimum separation distance of 15 m to protected places for a store of greater than 2,000 L of Division 2.3 gases. Even though different Divisions of gases will be stored in separate fenced / gated enclosures within the proposed Narngulu DG compound, due to the small separation distances, the Gas Cylinder Store (Store PS1) will be considered one store.	N/A	Add. A (Photos 13, 14, 21, 22 & 23 & DWG. 2014-000-0011 & 2025-307-0575)

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Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
Separation distances (cont'd)	4.4.2.1	(a) Minimum separation distances provided in Table 4.1. (b) Where mixed classes of gases are stored, quantity of each class to be used to calculate the aggregate capacity of the store and greatest separation distance for any class to apply.	The minimum separation distances below are based on the maximum quantity of Division 2.3 (toxic gas) to be stored in the Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound.	✓	Table F.2 & Att. 1 (Site DG Manifest)
		(c) Where gases are of Class (Division) 2.1, 2.2 (and SR 5.1), store must be separated from the boundary of premises by at least 1 m. For stores containing Division 2.3 gases, item 2 of Table 4.1 applies.	For >2,000 L of Division 2.3 gases, item 2 of Table 4.1 requires a minimum separation distance of 8 m to the site boundary. The nearest site boundary (west) will be located 120 m away from Store PS1.	✓	Add. A (DWG. 2025-307-0572 / 0573 & 2025-307-0575)
		Minimum separation distance of 8 m to an on-site protected place for a storage of >2,000 L of Division 2.3 gases.	The nearest on-site protected place will be the Pest Control Shed, which will be located 24 m away from the Gas Cylinder Store (Store PS1) at the proposed Narngulu DG compound.	✓	Add. A (DWG. 2025-307-0573) & Google Earth Measurement
		Minimum separation distance of 15 m to an off-site protected place for a storage of >2,000 L of Division 2.3 gases.	There will be no off-site protected places within at least 700 m of the Gas Cylinder Store (Store PS1) at the proposed Narngulu DG compound.	✓	
	4.4.2 & Table 4.1	Minimum separation distance of 15 m to filling / decanting points for packages or bulk storages of DGs or combustible liquids for a storage of >2,000 L of Division 2.3 gases.	There will be no filling / decanting points for packages or bulk storages of DGs or combustible liquids within 15 m of the Gas Cylinder Store (Store PS1) at the proposed Narngulu DG compound.	✓	Add. A (DWG. 2025-307-0572 / 0573)
4.4.2 & Table 4.1	Minimum separation distance of 15 m to other DG stores, combustible liquids or combustible materials for a storage of >2,000 L of Division 2.3 gases. If it can be demonstrated that DGs are compatible with the gases stored, separation distances can be reduced.	<p>There will be no stores of combustible liquids or materials within 24 m of Store PS1 at the proposed Narngulu DG compound.</p> <p>Based on DWG. 2025-307-0575, Store PS2 will be located approximately 16 m from Store PS1 and Store PS3 will be approximately 12 m away from the Division 2.3 gas cylinders in Store PS1.</p> <p>As per email discussions with DEMIRS (now LGIRS) in April 2020, it was understood that it was not possible to achieve a 15 m separation between Stores PS1 and PS3 (required by AS 5026) in CBH DG compounds due to the dimensions and layout, but that an appropriate separation distance be determined based on the actual risks identified. It must be noted that the Division 2.3 gases within Store PS1 are not incompatible with / will not react dangerously with the waste AIP in Store PS3 (based on SDSs), however, the firefighting requirements for the AIP stores (PS3 / PS2) and Store PS1 are very different and incompatible. LGIRS considered that a separation distance of >8 m should be suitable and this is achieved by the proposed design.</p>	✓	Add. A (DWG. 2025-307-0575), Add. E, Att. 3 (SDS) & DEMIRS / CBH emails dated 17/04/20 (STORE-1383563609-244314)	

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Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
Segregation within store	4.4.3 & Table 4.2	<p>(a) Division 2.1 gases must be separated from 2.3 and 2.2/5.1 gases by at least 3 m.</p> <p>(b) Division 2.3 gases must be separated from Division 2.1 or 2.2/5.1 bases by at least 3 m.</p> <p>Division 2.2 gases may be used to separate the above gases.</p>	<p>Based on Table 4.2, as VaporPhos has a Division 2.1 SR, it must be separated from the other Division 2.3 gases (i.e. EcoFume) by at least 3 m. CBH will ensure that the VaporPhos and EcoFume cylinders at the proposed Narngulu DG compound are separated by at least 3 m.</p> <p>Segregation requirements and all relevant requirements of AS 4332 and the Phosphine CoP (AIGA 051/20) are clearly stated in Sections 13.6.4 and 13.10.3 of the CBH 'DG and Chemical Management Plan'. Segregation of gases will also be checked during regular inspections using the CBH 'DG Compound Weekly Inspection' in ROAM.</p>	✓	Att. 2 (DGRA) & DG and Chemical Management Plan

Table F.7 Operational and Personnel Safety

Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
Scope of section	5.1	Section specifies requirements and recommendations related to operational and personnel safety, but does not apply to minor storages (except Cl. 5.2 and 5.3).	Section 5 of AS 4332 applies to the Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound, as it will not be classified as a minor store.	✓	Table F.2, Table F.4 & Att. 1 (Site DG Manifest)
General precautions	5.2.1	(a) Precautions same for used and empty cylinders.	As per the requirements of AS 4332, all empty cylinders to be stored and handled within the proposed Narngulu DG compound will be treated with the same precautions as full cylinders. This requirement is included in Solvay stewardship training and is stated in Section 13.10.3 of the 'DG and Chemical Management Plan'.	✓	Att. 2 (DGRA) & DG and Chemical Management Plan
		(b) Where appropriate, reference to be made to AS/NZS 2865.	N/A – There will be no confined spaces associated with Store PS1 at the proposed Narngulu DG compound.	N/A	Add. A (Photos 2, 13, 14, 21, 22 & 23)
		(c) SDSs for the gases stored on site, and an appropriate first aid kit, to be kept in a readily accessible location.	<p>A first-aid kit will be installed within the Vehicle Parking Shelter of the proposed Narngulu DG compound, as well as in nearby weighbridges.</p> <p>Electronic copies of SDSs are accessible either via ChemAlert or the GP SDS Register in STORE365. Hard copies of relevant SDS will also be provided in the EICs at the Narngulu site entrance and outside the proposed DG compound.</p> <p>SDS for all DGs to be stored in quantities above 'placarding' levels under Schedule 1 of the DG Regs are also included in Attachment 3.</p>	✓	Add. A (Photos 2 & 18 & Narngulu Traffic Flow Map), Att. 2 (DGRA) & Att. 3 (SDS)

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Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
General precautions (cont'd)	5.2.1	(d) Cylinders stored away from artificial sources heat sources (e.g. boilers, radiators) and not within 3 m of combustible materials, vegetation or garbage.	<p>There will be no artificial heat sources (e.g. boilers, radiators) within the proposed Narngulu DG compound.</p> <p>The area around the proposed Narngulu DG compound will be kept clear of dry vegetation and other combustible materials for at least 15 m.</p> <p>The condition of the proposed DG compound, including build-up of combustible materials or dry vegetation will be regularly checked as part of the CBH 'DG Compound Weekly Inspection' in ROAM.</p>	✓	Add. A (Photos 13, 14, 21, 22 & 23 & DWG. 2025-307-0573 & 2025-307-0575) & Att. 2 (DGRA)
		(e) The base or floor on which cylinders are stored to be kept in good condition.	The concrete floor in Store PS1 within the proposed Narngulu DG compound will be maintained in good condition.	✓	Add. A (Photos 2, 13, 14, 21, 22 & 23) & Att. 2 (DGRA)
		(f) Cylinders not to be used for any purposes than those for which they were designed.	The gas cylinders within Store PS1 at the proposed Narngulu DG compound will only be used for static storage prior to transport and use for fumigation purposes, i.e. they will not be used within the store.	✓	
		(j) Cylinders and their fittings to be regularly checked for leaks.	<p>There will be general checks of Store PS1 within the proposed Narngulu DG compound during regular inspections using the CBH 'DG Compound Weekly Inspection' in ROAM, and any significant leaks should be detected by inspection or personal gas monitors (e.g. PAC-8000 or ToxiPro) worn by GP personnel.</p> <p>An email was sent to all relevant GP personnel in early 2020 regarding the requirement to visually inspect cylinder valves for damage and contamination prior to use (following removal of dust caps) and tag out of service any faulty cylinders. Based on an update to 'DG Compound Weekly Inspection' in ROAM, there is now a requirement to inspect VaporPhos gas cylinders for signs of leaks / combustion and this is also included in Section 13.10.3 of the 'DG and Chemical Management Plan'.</p>	✓	CBH Email (STORE-1383563609-127285) & DG and Chemical Management Plan
		(k) Cylinder safety devices to be checked regularly for obstructions or damage, and not tampered with. Cylinder supplier to be contacted if damage or obstruction is identified.			
		(g) Gas cylinders to be protected against falling and impact damage.	All gas cylinders within Store PS1 at the proposed Narngulu DG compound will be securely strapped into metal pallets / stillages or chained / strapped to prevent them from falling. The cylinders will also be stored in a locked, gated enclosure surrounded by traffic bollards, protecting them against any potential impact damage.	✓	Add. A (Photos 2, 11, 13, 14, 21, 22 & 23 & DWG. 2025-307-0575) & Att. 2 (DGRA)

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Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
General precautions (cont'd)	5.2.1	(l) Toxic gas cylinder valves outlets to have a gas-tight outlet cap or plug fitted when not in use. If cylinder is supplied with a removable valve protection cap or dome, it should also be replaced.	The valve outlets of the Division 2.3 gas cylinders (VaporPhos and EcoFume) to be stored within Store PS1 at the proposed Narngulu DG compound are fitted with gas-tight outlet caps and protective cylinder valve guards / caps.	✓	Add. A (Photos 11, 14, 21, 22, 24 & 25)
		(m) If a cylinder's labelling or other means of identifying become damaged or otherwise indecipherable, the cylinder must not be used. If the cylinder is damaged or badly corroded, expert advice to be immediately sought from the supplier.	Although there will be checks of the Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound during regular inspections using the CBH 'DG Compound Weekly Inspection' in ROAM, there appears to be no specific requirement for inspection of cylinder labelling. The requirement to check cylinder condition and labeling (and actions to be taken in the event that cylinders are unlabelled / not clearly labelled or damaged) is included in Section 13.10.3 of the CBH 'DG and Chemical Management Plan'.	✓	DG and Chemical Management Plan
		(n) Appropriate protective equipment (refer Cl. 5.4) to be used when handling of cylinders.	Appropriate PPE will be used during handling of gas cylinders at the proposed Narngulu DG compound (refer under Cl. 5.4 below).	✓	Cl. 5.4
		(o) While moving cylinders on site: (i) valves to be closed and, where possible, protected from damage; (ii) a suitable trolley or lifting device used, with cylinders upright and securely restrained; (iii) cylinders not to protrude horizontally from any transfer device, except when lifted by forklifts; (iv) cylinders not to be dropped or rolled from trucks; and care taken not to damage valves.	The gas cylinders within Store PS1 at the proposed Narngulu DG compound will predominantly be moved using a suitable trolley or forklift (for whole stillage). The requirements of AS 4332 Cl. 5.2.1 (o) related to movement and transport of gas cylinders at CBH DG sites are included in Section 13.10.3 of the CBH 'DG and Chemical Management Plan'.	✓	DG and Chemical Management Plan
		(p) No smoking in all gas stores.	Smoking will be prohibited in the proposed Narngulu DG compound and associated Gas Cylinder Store (Store PS1), and appropriate warning signage will be provided around the compound, including on the front of the gas cylinder cages, stating "DANGER – NO SMOKING, NO IGNITION SOURCES".	✓	Add. A (Photos 2, 11, 14 & 21) & Att. 2 (DGRA)
		(q) Ventilation systems to operate whenever the store is occupied and, if not continuously operated, must operate for 2 air changes prior to first entry. Fixed ventilation systems not to be obstructed.	N/A – As per Cl. 4.3.2.1 in Table F.6 above, suitable natural ventilation (and not a mechanical ventilation system) will be provided for the Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound.	N/A	Table F.6 & Add. A (Photos 13, 14, 21, 22 & 23)
		(r) Gas not to be discharged directly from a cylinder to atmosphere unless in a controlled manner and for a specific purpose, e.g. purging / depressurizing equipment.	N/A - The gas cylinders within the proposed Narngulu DG compound will only be used for static storage prior to transport and use for fumigation purposes, i.e. they will not be used / discharged within Store PS1.	N/A	Add. A (Photos 11, 14, 21, 22 & 23) & Att. 2 (DGRA)

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Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
Precautions for flammable gas	5.2.2	(a) Hazardous areas (HAs) around flammable gas cylinders to be identified by AS 60079 (formerly AS 2430.1).	VaporPhos has a Division 2.1 (flammable gas) SR. Based on AS/NZS 60079, a Zone 2 HA may exist around a flammable gas cylinder as follows: 0.5 m above and laterally from the cylinder valve; and 1.5 m laterally from the cylinder base. However, VaporPhos is pyrophoric and, in the event of a LoC at or above its LEL, would ignite spontaneously on contact with air (without the presence of an ignition source), producing dense white fumes of phosphorous pentoxide.	✓	Att. 2 (DGRA) & Att. 3 (SDS)
		(b) Cylinders not to be stored under light fittings unless they comply with AS/NZS 2381.1 (replaced by AS 60079).	As detailed under Cl. 4.2.2 in Table F.6 above, there will be no light fittings in the Gas Cylinder Store (Store PS1). Motion-activated security lighting (and a light in the Vehicle Parking Shelter) will be provided within the proposed Narngulu DG compound, however, these will be located about 8 m away from Store PS1.	✓	Add. A (Photos 9, 11, 13, 14, 21, 22 & 23) & Att. 2 (DGRA)
		(c) Work permits are required for maintenance and the introduction of any ignition source into a HA, including portable electrical equipment (e.g. cameras and mobile phones) unless approved for use in such an area.	Any hot work within Store PS1 and the proposed Narngulu DG compound will be managed in accordance with the CBH Hot Work SOP. As per Section 13.7.2 of the CBH 'DG and Chemical Management Plan', a detailed JSA must be completed prior to any non-routine works being undertaken within the proposed DG compound and all DGs must be removed from the immediate area. Also, as per Section 13.7 of the 'DG and Chemical Management Plan', generation of a HA within the proposed DG compound is not considered credible and, hence, there will be no restrictions on carrying or using portable electrical equipment (e.g. cameras and phones).	✓	Att. 2 (DGRA), Hot Work SOP & DG and Chemical Management Plan
		(d) Industrial trucks to be used in indoor stores to comply with AS 1915 or AS 2359, as appropriate.	N/A – The Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound will not be an indoor store and industrial trucks will not be required to enter the store.	N/A	Add. A (Photos 2, 13, 14, 21, 22 & 23) & Att. 2 (DGRA)
Precautions for oxidising gases	5.2.3	Clause details precautions specific to oxidising gases, i.e. oxygen and nitrous oxide.	N/A – No oxidising gases will be stored in the Gas Cylinder Store (Store PS1) at the proposed Narngulu DG compound.	N/A	Table F.2, Att. 1 (Site DG Manifest) & Att. 3 (SDS)
		Cylinders and equipment must be kept clean, and there must be no use of lubricants / sealants in connections unless certified compatible.			
		Atmosphere monitoring equipment must be in use where oxygen can escape into confined spaces, with an alarm at 23%.			

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Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
Precautions for toxic gases	5.2.4	Consultation with the supplier of toxic gases to determine any additional precautions and reference made to the SDS and workplace exposure limits.	As per 'Personnel training' under Cl. 5.3 below, CBH GP personnel required to store and handle Division 2.3 toxic gases (e.g. VaporPhos and EcoFume) are made aware of the hazards and any additional precautions / workplace exposure limits through job-specific training (particularly Solvay stewardship training and assessment); familiarisation with, and easy access to, the latest SDS; and participation in job-specific risk assessments. Training of CBH personnel is managed online through 'Success Factors'.	✓	Att. 2 (DGRA), Protect Grain Procedure, DG and Chemical Management Plan & Solvay Stewardship Training
Precautions for refrigerated and cryogenic gases	5.2.5	Clause details additional precautions specific to refrigerated and cryogenic gases, i.e. those supplied in cylinders incorporating an insulated, stainless steel inner vessels to US Department of Transport (DOT) 4 L or equivalent.	N/A – The Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound will not contain any gas cylinders that incorporate an insulated, stainless steel inner vessel to DOT 4 L or equivalent.	N/A	Solvay Stewardship Training
		(a) Only certified handling equipment (i.e. verified by the cylinder manufacturer or gas supplier) to be used for transporting cylinders, and cylinders to be secured when lifted / transported.			
		(b) Cylinders designed for horizontal use to be kept horizontal at all times and cylinders designed for vertical use to be kept vertical at all times (refer AS 2030.4).			
		(c) Cylinders to be routinely checked for condensation / frost (as indication of possible insulation deterioration).			
		(d) Pressure in vacuum-insulated cylinders to be monitored, pressure increases could lead to discharge through safety valves.			
Precautions for acetylene	5.2.6	Clause details additional precautions specific to acetylene gas.	N/A – No acetylene (Division 2.1) cylinders will be kept in Store PS1 within the proposed Narngulu DG compound, i.e. only non-flammable / non-toxic (Division 2.2), toxic (Division 2.3) and toxic / flammable (Division 2.3 / SR 2.1) gases will be stored.	N/A	Add. A (Photos 11, 13, 14, 21, 22, 23, 24 & 25), Table F. 2, Att. 1 (Site DG Manifest) & Att. 3 (SDS)
Control of entry	5.2.7	Control of entry to prevent unauthorised access to the site / any restricted areas.	As per Addendum B above, there is no security fencing around the Narngulu site just ring lock fence. The proposed DG compound, in which the Gas Cylinder Store (Store PS1) will be located, will be a secure fenced area with locked gates (and restricted key access). Store PS1 will also be locked when not in use.	✓	Site Inspection, Add. A (Photos 2, 5, 13, 14, 21, 22 & 23), Add. B & Att. 2 (DGRA)

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Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
Clear access	5.2.8	Entry into / exit from areas where gases are stored or handled to be kept clear at all times.	<p>The Gas Cylinder Store (Store PS1) at the Narngulu site will be located at ground level within the proposed Narngulu DG compound and there will be clear / easy access to / egress from the store (once the compound gate and fenced enclosures are unlocked). Accessways around the store will be demarcated by yellow painted lines.</p> <p>Clear access within the DG compound will be checked during regular inspections using the CBH 'DG Compound Weekly Inspection' in ROAM.</p>	✓	Add. A (Photos 2, 14, 21, 22 & 23 & DWG. 2025-307-0575) & Att. 2 (DGRA)
First Aid	5.5	First-aid station to be provided in a clean area along with first aid instructions (SDSs are sufficient).	<p>As shown on the Narngulu Traffic Flow Map in Addendum A, first aid kits are provided in weighbridges. A first-aid kit will also be installed within the Vehicle Parking Shelter of the proposed DG compound.</p> <p>Electronic copies of SDSs are accessible either via ChemAlert or the GP SDS Register in STORE365. Hard copies of relevant SDS will also be provided in the EICs at the site entrance and outside the proposed DG compound.</p> <p>SDS for all DGs in quantities above 'placarding' levels under Schedule 1 of the DG Regs are also included in Attachment 3.</p>	✓	Add. A (Photos 2 & 18 & Narngulu Traffic Flow Map), Att. 2 (DGRA) & Att. 3 (SDS)
		Readily accessible safety shower (or plunge bath) and eyewash to be considered, especially where corrosive or toxic gases, or cryogenic fluids, are handled.	A safety shower / eyewash facility will be provided inside the proposed Narngulu DG compound. The condition and operability of the safety shower / eyewash will be checked on a weekly basis as part of the CBH 'DG Compound Weekly Inspection' in ROAM.	✓	Add. A (Photo 9 & DWG. 2025-307-0575)



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Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
Personnel training	5.3.1	Personnel handling gas cylinders to fully understand properties of specific gases handled (with reference to SDSs), relevant safety regulations and safe handling procedures.	<p>All CBH personnel are provided with training in accordance with the 'Training, Awareness and Competency' Group Procedure, some of which includes an OA. Training of CBH personnel is managed electronically / online through the 'Success Factors: Learning Management System', which includes a detailed online HSE Induction and identifies requirements for refresher training.</p> <p>Site-specific inductions, including site hazards, PPE and ER requirements, are also provided to personnel, contractors and visitors to CBH sites.</p> <p>A special induction will also be given to persons required to enter the proposed Narngulu DG compound for the first time. This induction will be completed electronically in ROAM and records kept in SHARE.</p> <p>Job-specific training is provided to GP personnel, where required, including, but not limited to: forklift training / licensing, manual handling, PTW and isolation, fumigation in the workplace, SCBA, use of portable FEs and FHRs (i.e. responding to minor emergencies), and comprehensive work-based training in the handling of DGs (e.g. Fintran stewardship for AIP and Solvay stewardship for PH₃ gas, which includes cylinder handling).</p> <p>As stated in Section 12.2 of the Protect Grain Procedure, there is a requirement for CBH DG sites to conduct an annual drill related to transport, storage and fumigation processes and one of these should include a site evacuation and involve the local DFES. Annual ER exercises and training will also be included in the new EP to be developed for the proposed Narngulu DG compound (<i>refer to Addendum B and SHARE Action ACT-37372</i>).</p> <p>Daily toolbox / pre-start meetings are held at the Narngulu site and include HSE topics. All drivers delivering DGs to site will be appropriately trained and DG licensed, where required.</p> <p>Many CBH personnel (all frontline staff), including those at the Narngulu site have been provided with appropriate Advanced First Aid training. All licensed GP personnel must have first aid training, including use of a BVM.</p>	✓	Add. B, Att. 2 (DGRA), Training, Awareness and Competency Group Procedure (STORE-1473931053-395), Protect Grain Procedure, DG and Chemical Management Plan & CBH SHARE System
	5.3.2 & 5.3.3	All personnel including contractors (where applicable) to be trained in safe work methods; manual handling procedures; hazards associated with gases and cylinders; first-aid (including location and use of first-aid equipment); correct use and care of PPE; and ER actions (including ER drills / exercises).			
	5.3.4	Relevant personnel to be retrained when there are changes in work / safety practices. Refresher training to be provided, as required, to ensure competency.			






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Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
PPE	5.4.1	Appropriate PPE to be provided and kept in designated locations and properly maintained.	Requirements regarding PPE selection, use and maintenance are detailed in Section 13 of the CBH 'Personal Health and Safety' Standard.	✓	Add. A (Photos 1, 2 & 12), Att. 2 (DGRA), Personal Health and Safety' Standard (STORE-1473931053-521), Protect Grain Procedure, GP Chemical PPE Guide (STORE-1473931053-299) & Respiratory Protection Selection Guide' (STORE ID: 8173457)
	5.4.2 & 5.4.3	When handling cylinders, eye protection, safety footwear and appropriate protective gloves to be provided, as well as hearing protection (if required).	<p>Appropriate PPE is provided to CBH personnel on employment and additional PPE (e.g. gloves, ear plugs and safety glasses) is also provided at CBH sites. Correct use of PPE is addressed in the CBH online HSE Induction and, for GP personnel, during SCBA training, fumigation training and fit testing.</p> <p>As a minimum, all personnel entering the proposed Narngulu DG compound must wear safety boots, high visibility shirt, long trousers, safety glasses and a personal PH₃ gas monitor (e.g. PAC-8000 or ToxiPro). When carrying out specific work activities, or for ER, additional PPE (e.g. chemical resistant overalls, full-face respirators or SCBA) may also be required. PPE requirements for specific GP activities are detailed in the Protect Grain Procedure and associated WIs and the 'GP Chemical PPE Guide' (STORE-1473931053-299).</p> <p>There will be a sign on the front gate of the proposed Narngulu DG compound stating "PERSONAL GAS MONITOR MUST BE WORN IN THIS AREA".</p>		
		SCBA to be considered on premises where toxic gases (Division 2.3) are stored or handled or where oxygen deficient atmospheres could occur.	SCBA will be available at the CBH Narngulu site due to the proposed storage and handling of Division 2.3 toxic gases. SCBA will always be readily available and easily accessible when performing fumigations (i.e. it will be kept in the Pest Control Truck).	✓	
	5.4.4	SCBA to maintained in accordance with AS/NZS 1715.	<p>Selection, use, fitting, care and maintenance of SCBA and other respiratory protection devices is in accordance with AS/NZS 1715, as detailed in the CBH 'Respiratory Protection Selection Guide' (STORE ID: 8173457).</p> <p>SCBA units must have a mandatory weekly check to ensure that they are available and fit for purpose. The inspection is recorded on the weekly SCBA control log. The GP fumigation personnel must also wear SCBA equipment once per month to remain familiar with the equipment.</p>		

Table F.8 Emergency Management

Refer also to details provided in Table B.3 in Addendum B.

Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
Planning for emergencies	6.2.1	Design and layout of premises to ensure suitable distances between bund walls, storage areas and other structures to allow access for maintenance and during emergencies; installation of alarms; water supplies; fire protection equipment; evacuation and access routes; containment of leaks, spills and run-off of firewater.	As detailed in Tables B.3, F.6, F.7 and F.9, the design and layout of the Narngulu site, including the proposed DG compound, will be appropriate to effectively manage any potential emergencies that could arise. Details of emergency management, evacuation / access requirements and ER actions will be provided in the new EP for the Narngulu DG compound (<i>refer to Table B.3 of Addendum B and SHARE Action ACT-37372</i>).	✓	Add. A (DWG. 2025-307-0573 / 0575), Add. B, Att. 2 (DGRA) & CBH SHARE System
Manifest	6.3	Manifest to be provided in accordance with regulatory requirements.	As mentioned in Addendum B , a Draft Site DG Manifest (including a Site Plan) has been developed for the Narngulu site. The Manifest is provided in Attachment 1 and hard copies will be available in the EICs at site entrance and outside the proposed DG compound.	✓	Add. A (Photos 2 & 18), Add. B & Att. 1 (Site DG Manifest)
Placarding - stores	Cl. 6.4 (a) (b) & DG Regs 68-72 (& Schedule 4)	Store to display a warning sign to prohibit smoking and exclude other ignition sources, e.g. "DANGER: NO SMOKING, NO IGNITION SOURCES".	Appropriate warning signage will be provided around the proposed DG compound, including on the front of the gas cylinder cages, stating "DANGER: NO SMOKING, NO IGNITION SOURCES".	✓	Add. A (Photos 2, 11, 14 & 21) & Att. 2 (DGRA)
		Store to display a warning sign to restrict entry, e.g. "WARNING - RESTRICTED AREA, AUTHORISED PERSONNEL ONLY".	Appropriate warning signage, i.e. "RESTRICTED AREA – AUTHORISED PERSONNEL ONLY" will be displayed on the security fencing around the proposed Narngulu DG compound.	✓	Add. A (Photos 1 & 2) & Att. 2 (DGRA)
		Stores to be placarded in accordance with regulatory requirements, e.g. ADG Code & DG Regs. (i.e. r. 70 & Schedule 4). Placards to be legible and reflect actual storage situation	Appropriate package store DG placards for VaporPhos (i.e. Division 2.3 (Toxic Gas) and SR Division 2.1 (Flammable Gas) DG diamonds), EcoFume (i.e. Division 2.3 (Toxic Gas)) and Nitrogen (i.e. Division 2.2 (Non-Flammable, Non-Toxic Gas)) will be displayed on the outside of the appropriate storage area within the proposed Store PS1. The placards will be as per the requirements of r. 70 and Schedule 4 (Cl. 5) of the DG Regs.	✓	Add. A (Photos 2, 11, 12, 13, 14, 21, 22 & 23) & Att. 2 (DGRA)
		Required placarding			
		<i>Division 2.3 (EcoFume)</i>			
		<i>Division 2.3, SR 2.1 (VaporPhos)</i>			
		<i>Division 2.2 (Nitrogen)</i>			

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Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
Cylinder identification	1.6	Cylinders to be marked and labelled in accordance with ADG code and other relevant regulatory requirements.	All gas cylinders stored within Store PS1 at the proposed Narngulu DG compound will be appropriately labelled by the supplier in accordance with ADG Code and regulatory requirements.	✓	Add. A (Photos 11, 14, 21, 22, 23, 24 & 25)

Table F.9 Fire Protection

Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
Hazards	7.3.1 & Appendix E	For firefighting / ER, consideration to be given to the following (for Division 2.3 gases): cylinders can rupture, become projectiles, be knocked over by pressure of FW; may feed the fire (SR 2.1); release toxic gases; and smoke and FW run-off could be hazardous to people and the environment.	The potential hazards associated with Division 2.3 gas cylinders (i.e. VaporPhos and EcoFume) in a fire situation, including the requirements to protect cylinders from radiant heat and disperse vapours are included in Section 5 of the SDS. A FHR (with fog spray) will be provided near to Store PS1 within the proposed DG compound, however, it is unlikely that this could be safely accessed in an emergency and, hence, a deluge water sprinkler system (manual and automatic operation) will also be installed inside Store PS1.	✓	Add. A (Photos 9, 27 & 28 & DWG. 2025-307-0575 & 251011-LAY / BLK-0001), Att. 2 (DGRA), Att. 3 (SDS) & CBH SHARE System
Fire protection & heat protection	7.3.3 & 7.3.4	Fire protection equipment for gas cylinder stores to fulfil 3 distinct functions: to control and extinguish any fire; protect cylinders from radiant heat from a nearby fire (as per Cl. 7.3.4); and disperse vapours.	CBH will ensure that all relevant requirements of AS 4332 and the Phosphine CoP (AIGA 051/20) are incorporated into the new EP to be developed for the proposed Narngulu DG compound (<i>refer to Table B.3 in Addendum B and SHARE Action ACT-37372</i>), including the requirements to protect cylinders from radiant heat and disperse vapours in the event of a fire.		
Design and compatibility	7.3.2	Firefighting materials and equipment to be suitable for the conditions and compatible with the gases stored. Firefighting equipment to be compatible with DFES equipment at essential interfaces.	There will be several 9 kg dry chemical powder FEs and a FHR (with fog spray) provided inside the proposed Narngulu DG compound. This firefighting equipment will be suitable for, and compatible with, the gases stored. However, as immediately above, a deluge water sprinkler system (manual and automatic operation) will also be installed in Store PS1 to cool down gas cylinders in the event of a fire.	✓	Add. A (Photos 4, 9, 15, 19, 27 & 28 & DWG. 2025-307-0575 & 251011-LAY / BLK-0001), Att. 2 (DGRA) & Att. 3 (SDS)
HAZCHEM	ADG Code	Based on the SDS provided and Appendix C of the ADG Code, the composite / multiload HAZCHEM Code for the gases stored within Store PS1 is 2WE . '2' – Fine water spray. 'W' – Risk of violent reaction or explosion. Liquid-tight chemical protective clothing and breathing apparatus required. Contain. 'E' – Public safety hazard may exist outside the immediate area. Evacuation to be considered.	There will be no FHs (or FW system) at the Narngulu site that are required to be compatible with DFES equipment.		

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Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
Fire protection requirements	7.4 (Table 7.2)	For stores of gases in cylinders of aggregate capacity between 2 kL and 12 kL, at least one FHR and one FE to be provided.	There will be several 9 kg dry chemical powder FEs and a FHR (with fog spray) provided inside the proposed Narngulu DG compound. As above, a deluge water sprinkler system (manual and automatic operation) will also be installed within Store PS1, which is considered to be a safer and higher level of fire protection than a FHR.	✓	Add. A (Photos 4, 9, 15, 19, 27 & 28 & DWG. 2025-307-0575 & 251011-LAY / BLK-0001) & Att. 2 (DGRA)
Integration with existing facilities	7.3.5	Existing fire protection equipment on site required to comply with the Building Code of Australia (BCA) can be used as long as location and accessibility / availability complies with the relevant AS.			
Location	7.3.6	Firefighting equipment to be located so that it can be easily and safely accessed in an emergency.	The dry powder FEs inside the proposed Narngulu DG compound will be easily accessible. However, as above, it is unlikely that the FHR could be safely accessed in an emergency and, hence, a deluge water sprinkler system (manual and automatic operation) will be installed within Store PS1.	✓	Add. A (Photos 4, 9, 15, 19, 27 & 28 & DWG. 2025-307-0575 & 251011-LAY / BLK-0001) & Att. 2 (DGRA)
Weather protection	7.3.7	Where susceptible to degradation by weather / UV light, firefighting equipment to be protected by sheltered location or protective enclosure with contents clearly labelled.	The dry chemical powder FEs and FHR inside the proposed Narngulu DG compound will be provided with plastic covers for weather protection. The valves and controls for the water sprinkler system will be located in a cabinet within the Vehicle Parking Shelter, which will provide weather protection.	✓	Add. A (Photos 4, 9, 15, 19 & 27)
Fixed fire protection / detection systems	7.3.8	Fixed fire protection and detection systems to comply with appropriate AS listed in Table 7.1	Firefighting equipment (e.g. FEs and FHR) within the proposed Narngulu DG compound has been designed, and will be installed and operated, as per the relevant AS (e.g. AS 2444 and AS 2441). This firefighting equipment will be inspected and serviced / maintained on a 6-monthly basis (as per AS 1851) by a specialist contractor (Mitchell & Brown Fire Services). Inspection and maintenance requirements for the deluge water sprinkler system are included in Section 13.8.1 of the CBH 'DG and Chemical Management Plan'.	✓	Att. 2 (DGRA) & DG and Chemical Management Plan
		Automatic fire detection and extinguishment systems to be considered for stores containing Division 2.1 or 2.3 gases.	Store PS1 within the proposed Narngulu DG compound will contain Division 2.3 gases with a Division 2.1 SR and the store will be located outside with good natural ventilation. However, as above, a deluge water sprinkler system (manual and automatic operation) will be installed within Store PS1.	✓	Add. A (Photos 27 & 28 & DWG. 251011-LAY / BLK-0001), Att. 1 (Site DG Manifest), Att. 2 (DGRA) & Att. 3 (SDS)



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Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
Fire extinguishers	7.5.1, 7.5.2, 7.5.3 & 7.5.5	FEs to comply with the relevant part of AS/NZS 1841, be located (adjacent to the relevant risk) and installed as per AS 2444. Extinguishers to be 9 kg dry powder, with a rating of at least 2A 60B(E). FEs to be maintained as per the relevant provisions of AS 1851.	There will be several 9 kg dry chemical powder FEs, with a rating of 10A 80B:E, provided inside the proposed Narngulu DG compound. These FEs will comply with the relevant components of AS/NZS 1841 and will be located / installed as per AS 2444. The FEs within the proposed Narngulu DG compound will be inspected / tested and, if required, maintained on a 6-monthly basis by a specialist contractor (Mitchell & Brown Fire Services).	✓	Add. A (Photos 4, 15 & 19) & Att. 2 (DGRA)
	7.3.9	Where installed, fire alarm system to comply with AS 1370 and AS 1603.5.	N/A – There will be no dedicated fire alarm system provided for the proposed Narngulu DG compound. As will be stated in the new EP to be developed for the proposed DG compound (<i>refer to SHARE Action ACT-37372</i>), in the event that an emergency situation is identified, the evacuation alarm can be raised by any person contacting the Control Room via 2-way radio or telephone.	N/A	Add. E & CBH SHARE System
	7.6.1 7.6.2 7.6.3	Hose reels to comply with AS/NZS 1221 and AS 2441. (a) Maximum hose length 36 m with fog spray nozzles. (b) Easily accessible; (c) Nozzle end can reach every part of the store. Hose reels to be maintained as per relevant requirements of AS 1851.	As stated previously, there will be a FHR (with fog spray) provided within the proposed Narngulu DG compound, approximately 8 m away from the Gas Cylinder Store (Store PS1). This FHR will be in compliance with the relevant requirements of AS/NZS 1221 and AS 2441. However, as mentioned previously, it is unlikely that the FHR could be safely accessed in an emergency and, hence, a deluge water sprinkler system (manual and automatic operation) will be installed within Store PS1. The FHR will be inspected and, if required maintained, on a 6-monthly basis by Mitchell & Brown Fire Services in accordance with the relevant requirements of AS 1851. The condition and operability of the FHR within the DG compound will also be checked as part of the 'DG Compound Weekly Inspection' in ROAM.	✓	Add. A (Photos 9, 27 & 28 & DWG. 2025-307-0575 & 251011-LAY / BLK-0001) & Att. 2 (DGRA)

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Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
Fire hydrants (FHs)	7.7.1	FH system to be designed and installed as per AS 2419.1.	N/A - There are no FHs installed at the Narngulu site.	N/A	Site Inspection & Att. 2 (DGRA)
		Provide at least 1 hose / hose fitting and 1 fog spray nozzle for each FH.			
	7.7.2	FHs located within 10 m to 30 m of storage areas (under any fire or adverse wind conditions). FHs to be unobstructed (e.g. from vehicles), provided with clear access and protected from fire / mechanical damage.			
	7.7.3	FHs and hoses to be maintained in accordance with the relevant parts of AS 1851.			
Monitors	7.8	Monitors, where installed, to be capable of applying required water quantity for cooling, and be manually stopped or started and direction controlled (if adjustable) from a safe remote location.	N/A – There will be no fire monitors installed for the Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound, as they are not required under Cl. 7.4 and Table 7.2 of AS 4332.	N/A	Att. 2 (DGRA)
Sprinkler Systems	7.9	Where fire sprinkler systems are required, they are to be installed / located as per AS 2118 and be individual actuation or deluge, or both.	Although a fire sprinkler system is not specifically required under Cl. 7.4 and Table 7.2 of AS 4332, as detailed above, a deluge water sprinkler system (manual and automatic operation) will be installed within Store PS1 at the proposed Narngulu DG compound to provide an additional level of fire protection.	✓	Add. A (Photos 27 & 28 & DWG. 251011-LAY / BLK-0001 & Att. 2 (DGRA)
Water Supply	7.10	(a) FW pressure, flow rate and water reserves to be sufficient for the installation and any possible simultaneous FW needs.	Water for the sprinkler system in Store PS1, as well as the FHR and safety shower / eyewash, at the proposed Narngulu DG compound will be supplied via mains water, with back-up supply from a 5,000 L water tank (with small electric pump). This setup will ensure sufficient water supply to the sprinkler system, FHR and safety shower / eyewash.	✓	Add. A (Photos 9 & 26 & DWG. 2025-307-0575) & Att. 2 (DGRA)
		(b) FW from town mains supply where possible. Where the required water pressure cannot be achieved from mains supply, boosting to be provided. Where boosting cannot be provided, static water system to be installed.			
		(c) Static water supply systems to provide at least 2 hours of running time for the whole system or 30 minutes if supplying only a hose reel system.			
Action in the event of fire	7.11	Action in the event of a fire to be specified in the emergency plan.	Fire and spill scenarios associated with DG storage and handling at the proposed Narngulu DG compound will be covered in the new EP to be developed for the site, including the requirement to protect gas cylinders from radiant heat and disperse vapours, as well as any other requirements of AS 4332 and the Phosphine CoP (refer to Addendum B and SHARE Action ACT-37372).	✓	Add. B, Att. 2 (DGRA) & CBH SHARE System

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Table F.10 Return of Cylinders

Aspect	Cl.	AS 4332 Specification	Proposed	Status (✓ or ✗)	Ref.
Normal return of undamaged cylinders	8.2	The following procedure to be adhered to prior to return or transport of cylinders back to the supplier:			
		(a) Cylinder valves to be shut firmly but not over tightened.	Relevant GP personnel are aware of the requirements of AS 4332 Cl. 8.2 (a) to (d), through Solvay stewardship training, on-the-job training and OA. Section 13.10.3 of the CBH 'DG and Chemical Management Plan' also includes all relevant requirements of AS 4332 related to storage and handling of gas cylinders at CBH DG sites, including preparation of empty cylinders for return to the supplier.	✓	DG and Chemical Management Plan
		(b) where fitted (e.g. toxic gas cylinders), any gas-tight outlet caps or plugs to be re-fitted and securely closed.			
		(c) Where provided, any removable valve protection caps or domes to be firmly replaced.			
(d) Empty cylinders to be collected in one area, ready for pick-up / transport.					
Return of fire-affected, damaged, corroded or leaking cylinders	8.3	Where possible and safe to do so, fire-affected, damaged, corroded or leaking cylinders to be isolated in a safe, well-ventilated place, be tagged and marked, and arrangements made for their return to the supplier. Leaks to be minimised, and damaged cylinders NOT to be returned under normal transport arrangements with undamaged cylinders.	Relevant GP personnel should be aware of the requirements of AS 4332 Cl. 8.3, through Solvay stewardship training, on-the-job training and OA, including management of fire-affected, damaged, corroded or leaking gas cylinders. As discussed under Cl. 5.2.1 in Table F.7 above, an email was sent to all relevant GP personnel on 19/02/20 regarding the requirement to visually inspect cylinder valves for damage and contamination prior to use (following removal of dust caps) and to tag out of service any affected cylinders. As mentioned previously, the CBH 'DG Compound Weekly Inspection' in ROAM includes a thorough inspection of the VaporPhos cylinders to check for signs of ignition / combustion and leaks. Section 13.10.3 of the CBH 'DG and Chemical Management Plan' includes all relevant requirements of AS 4332 related to storage and handling of gas cylinders at CBH DG sites, including specific requirements related to fire-affected, damaged, corroded or leaking cylinders.	✓	CBH Email (STORE-1383563609-127285) & DG and Chemical Management Plan

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Table F.11 Requirements of CoP for Phosphine (AIGA 051/20)

Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
GAS PROPERTIES					
General	4.1 (08 version)	Cylinders for phosphine (PH ₃) to have a test pressure of 4.2 MPa (or higher if mandated by a national body).	The PH ₃ cylinders (VaporPhos and EcoFume) supplied by Solvay have been pressure tested to 4,003 psi or 27.6 MPa.	✓	Solvay emails (JT, dated 26/03/2020 & 28/08/20)
Physical properties	4.2 & 4.5	Avoid sources of ignition, sparks and flames due to the flammable properties of PH ₃ . PH ₃ poses a severe fire hazard and an explosion risk.	<p>The only flammable gas to be stored and handled within Store PS1 is VaporPhos, which has a Division 2.1 SR. As detailed above, adequate natural ventilation will be provided for the store and there will be no fixed electrics installed within Store PS1.</p> <p>Smoking will be prohibited in the proposed Narngulu DG compound and associated Gas Cylinder Store (Store PS1), and appropriate warning signage will be provided around the compound, including on the front of the gas cylinder cages, stating "DANGER – NO SMOKING, NO IGNITION SOURCES".</p> <p>Any hot work within Store PS1 and the proposed Narngulu DG compound will be managed in accordance with the CBH Hot Work SOP.</p>	✓	Add. A (Photos 2, 11, 14, 21 & 24), Att. 2 (DGRA) & Hot Work SOP
		Avoid contact with air, as PH ₃ is pyrophoric and can form explosive mixtures in concentrations of ≥1.6% in air.	The PH ₃ gas cylinders within Store PS1 at the proposed Narngulu DG compound will only be used for static storage prior to transport and use for fumigation purposes, i.e. they will not be used / discharged within the store (and, hence, exposed to air).	✓	Add. A (Photos 11, 14, 21, 22, 24 & 25) & Att. 2 (DGRA)
		PH ₃ is stable at room temperature and begins to decompose at about 375°C, with complete decomposition at approximately 593°C.	The SDSs for VaporPhos and EcoFume specify a recommended storage temperature below 60°C, however, the supplier (Solvay) has confirmed that this is related to manual handling of hot cylinders and not over-pressurisation of cylinders (or decomposition) due to high temperatures. Store PS1 will be provided with adequate shade and natural ventilation (i.e. corrugated steel roof, combination corrugated and steel mesh sheeting for back and side walls, and steel mesh sheeting front).	✓	Add. A (Photos 11, 13, 14, 21 & 22 & DWG. 2014-000-0011), Att. 2 (DGRA) & Att. 3 (SDS)

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Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
Chemical properties	4.3	PH ₃ to be separated / segregated from incompatible substances such as oxidising agents, halogens, acids and combustible materials. PH ₃ is a strong reducing agent and reacts vigorously (violently) with oxidisers (e.g. potassium permanganate, sodium hypochlorite, oxygen, ozone, chlorine, fluorine and nitric oxide). PH ₃ can have some reaction with water and the alkali metal family but is not known to polymerize.	Within the proposed Narngulu DG compound, there will be separate / dedicated stores for gas cylinders (predominantly PH ₃) (Store PS1), new AIP blankets in sealed packages (Store PS2) and spent AIP blankets and other AIP wastes in open, steel cages (Store PS3). Although PH ₃ (VaporPhos and EcoFume) are not incompatible / will not react dangerously with AIP (based on SDSs), the firefighting requirements are very different and incompatible. Regardless, sufficient separation will be provided between the AIP stores and Store PS1 at the proposed Narngulu DG compound.	✓	Add. A (Photos 2, 3, 4, 6, 7, 10, 11, 13, 14, 16, 18, 19, 20, 21, 22 & 23 & DWG. 2025-307-0575), Att. 2 (DGRA) & Att. 3 (SDS) & CBH SHARE System
Environmental properties	4.6	PH ₃ may be considered a Hazardous Air Pollutant in some countries.	Based on the SDSs for VaporPhos and EcoFume and an internet search (https://www.environment.gov.au/protection/air-quality/air-pollutants#toxics), PH ₃ is not considered a Hazardous Air Pollutant in Australia.	✓	Att. 3 (SDS)
		PH ₃ users to prevent direct discharges to waterways or municipal wastewater treatment facilities and not allow polluted run-off.	The SDSs for VaporPhos and EcoFume state that discharge into the environment should be avoided and that they are very toxic to aquatic life, however, no other ecological information is provided. There appear to be no environmentally sensitive areas within at least 1 km of the proposed Narngulu DG compound and Store PS1 will only be used for static storage of compressed gases in cylinders. In the extremely unlikely event of a PH ₃ fire generating phosphorous pentoxide / phosphoric acid, any run-off of contaminated stormwater / FW would be directed to a wastewater collection area (HDPE-lined bund) outside the compound, which will include an isolation point (i.e. PVC pipe with cap).	✓	Add. A (Photos 2, 13, 14, 21 & 22 & DWG. 2025-307-0572 / 0573 / 0575), Add. E, Att. 2 (DGRA) & Att. 3 (SDS)
		ER programmes to be developed and implemented to prevent danger to the public and environment in the event of a PH ₃ release.	As per Addendum B , CBH will develop a new EP for the proposed Narngulu DG compound, including ER actions in the event of fires, toxic gas releases and spills, as well as requirements related to evacuation (<i>refer to Table B.3 in Addendum B and SHARE Action ACT-37372</i>).	✓	Add. B, Att. 2 (DGRA) & CBH SHARE System
		Local authorities to be notified when there is an uncontrolled PH ₃ release.	As per the Dangerous Goods Safety Guide 'Reporting and investigating incidents and other situations involving dangerous goods' (DEMIRS, 2024), any PH ₃ gas release of >5 m ³ will be formally reported to LGIRS. This is clearly stated in Section 12.8 of the 'DG and Chemical Management Plan'.	✓	DG and Chemical Management Plan



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Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
GAS MAJOR HAZARDS					
Fire and explosion hazards	5.1	Only trained personnel should respond to PH ₃ fires and they must wear protective clothing and SCBA.	GP personnel are only trained to respond to minor fires and PH ₃ leaks. As per Section 12.2 of the Protect Grain Procedure, in an emergency, GP personnel must wear SCBA (and protective clothing) when approaching a fire involving toxic substances / gases and/or when there is an uncontrolled PH ₃ gas release with concentrations greater than 15 ppm. However, in the event of a significant PH ₃ incident, it is likely that the area / site will be evacuated and DFES notified to manage the situation.	✓	Att. 2 (DGRA) & Protect Grain Procedure
		Flammable gases not to be used near open flames, sources of heat or adjacent to oxidisers or non-explosion proof electrical systems.	N/A – Store PS1 will only be used for static storage of PH ₃ cylinders prior to transport and use for fumigation, i.e. they will not be used within the store. Also, as per Cl. 4.2 above, there will be no fixed electrics within the store. Ignition sources will be controlled within the proposed DG compound, including provision of appropriate warning signage and hot work permits (Hot Work SOP).	N/A	Add. A (Photos 2, 11, 13, 14, 21, 22, 24 & 25), Att. 2 (DGRA) & Hot Work SOP
		Transportation, storage and use of PH ₃ to be in well-ventilated areas.	Store PS1 within the proposed Narngulu DG compound will only be used for static storage of PH ₃ cylinders. As detailed under AS 4332 Cl. 4.3.2.1 in Table F.6 above, the store will be provided with adequate natural ventilation in accordance with the requirements of Cl. 4.3.2.1(b).	✓	Add. A (Photos 2, 13, 14, 21 & 22 & DWG. 2014-000-0011) & Att. 2 (DGRA)
		Measures in place to contain and, if possible, treat contaminated fire-fighting water in the event of a PH ₃ fire.	Any run-off of fire-fighting water from the proposed DG compound will be directed to a wastewater collection area (a HDPE-lined bund) outside the compound, which will include an isolation point (i.e. PVC pipe with cap). If required, the water could be checked for contamination prior to discharge.	✓	Add. A (DWG. 2025-307-0575) & Att. 2 (DGRA)
		Remote-controlled water spray (e.g. sprinklers) preferable to FHRs for cooling cylinders / equipment and reducing the spread of PH ₃ fires.	As discussed previously, a deluge water sprinkler system (manual and automatic operation) will be installed within Store PS1 at the proposed Narngulu DG compound to provide an additional level of fire protection.	✓	Add. A (Photos 14, 27 & 28 & DWG. 251011-LAY / BLK-0001) & Att. 2 (DGRA)

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Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
Fire and explosion hazards (cont'd)	5.1	If use of FHRs is necessary to fight a PH ₃ fire, protective structures to be provided upwind for personnel fighting the fire.	N/A – There will be no protective structures provided upwind of the proposed DG compound specifically for personnel fighting fires. As discussed previously, due to the proposed location of the FHR within the compound it is unlikely that it could be easily accessed and used safely in a fire scenario, hence, a deluge water sprinkler system (manual / automatic operation) will be installed in Store PS1.	N/A	Add. A (Photos 2, 9, 13, 14, 27 & 28 & DWG. 2025-307-0573 / 0575 & 251011-LAY / BLK-0001) & Att. 2 (DGRA)
		Appropriate measures taken to protect persons from cylinder rupture in the case of cylinder failure or piping failure.	Store PS1 within the proposed Narngulu DG compound will only be used for static storage of PH ₃ cylinders, i.e. there will be no associated pipework. The store will be constructed from steel (e.g. steel supports, corrugated steel sheeting and steel mesh) and will only be accessed intermittently. Based on discussions with the PH ₃ cylinder supplier (Solvay), rupture of cylinders under normal storage conditions is not considered credible. In the event of a fire potentially impinging on the PH ₃ cylinders in Store PS1, the area would be evacuated and DFES called to try to control the fire and prevent cylinder rupture. As per Table F.9 above, a water sprinkler system (manual and automatic operation) will be installed in Store PS1 to cool down gas cylinders in the event of a fire.	✓	Add. A (Photos 2, 11, 13, 14, 21, 22, 27 & 28 & DWG. 2014-000-0011, 2025-307-0575 & 251011-LAY / BLK-0001) & Att. 2 (DGRA)
		Water spray available nearby to keep PH ₃ cylinders cool in the event of a phosphine fire, minimise dispersion of PH ₃ and its decomposition products, and to extinguish any secondary fire / prevent spread of fires.	As stated in Table F.9 above, there will be a FHR (with fog spray) provided within the DG compound, approximately 9 m away from Store PS1. However, it is unlikely that this FHR could be safely accessed in the event of a fire impacting on the DG compound and, hence, a deluge water sprinkler system (manual and automatic operation) will be installed within Store PS1 to provide an additional level of fire protection. Refer also to SHARE Action ACT-37372 and Table F.9 above regarding developing a new EP for the proposed Narngulu DG compound, addressing potential hazards associated with PH ₃ gas cylinders in a release / fire situation, including the requirements to protect cylinders from radiant heat and disperse vapours.	✓	Add. A (Photos 9, 27 & 28 & DWG. 2025-307-0575 & 251011-LAY / BLK-0001), Add. B, Att. 2 (DGRA) & CBH SHARE System

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Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
PH₃ exposure	5.2.1	Predominant hazard to personnel is unrecognized occupational exposure to PH ₃ gas above recommended OELs causing acute poisoning. There is no antidote for PH ₃ poisoning, so treatment consists of support of respiratory and cardiovascular functions. Those exposed only to PH ₃ gas need decontamination before medical treatment as they pose no serious risk of secondary contamination to others.	GP personnel accessing the proposed Narngulu DG compound and associated stores will be required to wear a personal gas monitor (e.g. PAC-8000 or ToxiPro) to alert them to PH ₃ gas concentrations above 0.3 ppm (8-hour TWA) and appropriate warning signage will be provided on the entrance gate to the DG compound.	✓	Add. A (Photos 2 & 12) & Att. 2 (DGRA)
GAS HANDLING EQUIPMENT					
Gas handling equipment	6	Section 6 of the Phosphine CoP details requirements for PH ₃ gas handling equipment, including general considerations, materials of construction, compatibility of sealing compounds, system pressures and over-pressure protection, valve and filter types, tubing, purification materials, system leak tests and purge, temperature control, electrics, vents and monitoring / detection.	N/A – Store PS1 within the proposed Narngulu DG compound will only be used for static storage of gas cylinders (predominantly PH ₃) prior to transport and use for fumigation purposes, i.e. the cylinders will not be used within the store.	N/A	Add. A (Photos 11, 14, 21, 22, 24 & 25) & Att. 2 (DGRA)
PROCESS AND OPERATION					
Life safety control (gas detection and alarm systems)	7.1	Effective procedures to be in place to control personnel exposure to PH ₃ and its decomposition products. Life Safety Control programme to consider items listed in Cl. 7.1.1 to 7.1.3 below.	The 'Protect Grain Procedure' and 'DG and Chemical Management Plan' detail measures to control personnel exposure to PH ₃ and its decomposition products. <i>Refer under Cl. 7.1.1 to 7.1.3 below.</i>	✓	Att. 2 (DGRA), Protect Grain Procedure & DG and Chemical Management Plan
Monitoring	7.1.1	Environmental and workplace monitoring to ensure personnel are not exposed to PH ₃ concentrations above recommended OELs.	As detailed under Cl. 5.2.1 above, GP personnel accessing the proposed Narngulu DG compound and associated stores will be required to wear a personal gas monitor (e.g. PAC-8000 or ToxiPro), which would alert them to any PH ₃ gas levels above 0.3 ppm (8-hour TWA). These monitors are calibrated every 6 months by the local GP teams and stickers put on them as a record of the calibration (which is checked prior to use). CBH sites have docking stations and the gas monitors are bump tested before each use. The monitors have an internal memory and, if 6 months is up or the monitor has been exposed to higher levels of PH ₃ , they will self-calibrate.	✓	
		Routine inspection / calibration of monitoring equipment to verify performance and reliability.			
		Routine inspection of abatement equipment to verify performance and reliability.	N/A – There will be no abatement systems associated with the Gas Cylinder Store (Store PS1) within the proposed Narngulu DG compound.	N/A	Add. A (Photos 11, 13, 14, 21 & 22)

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Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
Monitoring (cont'd)	7.1.1	Appropriate leak detection devices to be installed to trigger ER actions in compliance with national regulations.	No fixed leak detection devices will be provided inside Store PS1 or the associated proposed DG compound, as these are not required under WA legislation or relevant AS, and adequate natural ventilation will be provided (<i>refer Cl. 7.3 below</i>) to quickly dilute / disperse PH ₃ in the highly unlikely event of a leak. As above, personal gas monitors (e.g. PAC-8000 or ToxiPro) will be worn by anyone entering the compound.	✓	Add. A (DWG. 2014-000-0011 & 2025-307-0575), Att. 2 (DGRA), Protect Grain Procedure & DG and Chemical Management Plan
Life safety system	7.1.2	Heating, Ventilation and Air Conditioning (HVAC) air balance through building, fume hoods, gas cabinets and abatement systems reviewed periodically. Ventilation dampers locked in place.	N/A – Store PS1 within the proposed Narngulu DG compound will be located outdoors, with adequate natural ventilation (<i>refer to Cl. 7.3 below</i>) and, hence, there will be no HVAC system associated with the store.	N/A	Add. A (Photos 2, 11, 13, 14, 21 & 22)
		Routine testing and inspection of alarm systems to verify performance and reliability.	N/A – As mentioned previously, there will be no dedicated fire alarm system provided for the proposed DG compound or associated Narngulu site. However, there will be an alarm associated with the deluge water sprinkler system in Store PS1 and this will be tested at least monthly.	N/A	Add. E & DG and Chemical Management Plan
	As PH ₃ is a flammable and pyrophoric gas, firefighting systems to be provided in accordance with national regulations.	As per Table F.9 above, there will be several 9 kg dry chemical powder FEs, a FHR (with fog spray) and a deluge water sprinkler system (manual and automatic operation) provided inside the proposed Narngulu DG compound. The sprinkler system to be installed within Store PS1 will minimise the risk to CBH personnel in the event of a fire with the potential to impact on the PH ₃ gas cylinders.	✓	Add. A (Photos 4, 9, 14, 15, 27 & 28 & DWG. 2025-307-0575 & 251011-LAY / BLK-0001) & Att. 2 (DGRA)	
	PH ₃ storage areas to be provided with more than 1 exit.	The gas cylinder storage areas / enclosures within Store PS1 will have lockable steel mesh sliding gates, and the proposed Narngulu DG compound will be provided with 2 large sets of mesh access gates and 3 emergency exits that open outwards.	✓	Add. A (Photos 2, 5, 11, 14, 21 & 22 & DWG. 2014-000-0011 & 2025-307-0575)	
	Suitable gas scrubbing or ventilation systems to be provided to handle gas leaks.	N/A – Gas scrubbing systems will not be provided / required for Store PS1 within the proposed Narngulu DG compound. However, as detailed in Cl. 7.3 below, adequate natural ventilation will be provided for the store.	N/A	Att. 2 (DGRA)	

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Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
Management	7.1.3	Work clothing management daily change-outs, dedicated place for contaminated clothing and locker room separate from manufacturing area.	N/A - Appropriate PPE is provided to CBH personnel on employment and additional PPE (e.g. gloves, ear plugs and safety glasses) are available at CBH sites, including Narngulu. As a minimum requirement, all GP personnel are required to wear safety boots, safety glasses, high visibility shirt and long trousers. As Store PS1 will only be used for static storage of PH ₃ cylinders, there will be no issues related to contaminated clothing.	N/A	Att. 2 (DGRA)
		Training and re-certification in use of PPE, including medical evaluation and fit testing for personnel required to wear respiratory protection. Workers to also be trained and certified in the use of PPE.	Correct use of PPE is addressed in the CBH online HSE Induction and, for GP personnel, during SCBA training, fumigation training and fit testing. Selection, use, fitting, care and maintenance of SCBA and other respiratory protection devices is in accordance with AS/NZS 1715, as detailed in the CBH 'Respiratory Protection Selection Guide'. SCBA units must have a mandatory weekly check to ensure that they are available and fit for purpose. The inspection is recorded on the weekly SCBA control log. The GP fumigation personnel must also wear SCBA equipment once per month to remain familiar with the equipment.	✓	Personal Health and Safety Standard, Protect Grain Procedure, GP Chemical PPE Guide (STORE-1473931053-299) & Respiratory Protection Selection Guide (STORE ID: 8173457)
		Personnel involved in storage, handling, transportation, processing or maintenance activities related to PH ₃ to be provided with general awareness training including hazards and HSE requirements (as per the relevant SDS).	For full details of CBH training requirements, refer under Cl. 5.3.1 in Table F.7 above. On employment, personnel receive a detailed online HSE Induction. Job-specific training is provided to GP personnel, where required, including, but not limited to: forklift licence, manual handling, PTW and isolation, fumigation in the workplace, SCBA, use of portable FEs and FHRs (i.e. responding to minor emergencies), and comprehensive work-based training in the handling of DGs (e.g. Fintran (AIP) and Solvay (PH ₃ gas) stewardship training, which includes cylinder handling, and DG driver / transport training). Site-specific inductions, including site hazards, PPE and ER requirements, are also provided to personnel, contractors and visitors to CBH sites. A special induction will also be given to persons required to enter the proposed Narngulu DG compound for the first time. This induction will be completed electronically in ROAM and records kept in SHARE.	✓	Att. 2 (DGRA), Training, Awareness and Competency Group Procedure (STORE-1473931053-395), Protect Grain Procedure & DG and Chemical Management Plan

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Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
Management (cont'd)	7.1.3	Training to be provided in appropriate ER actions to incidents involving release of PH ₃ and its decomposition products.	Section 12.2 of the Protect Grain Procedure requires CBH terminals and sites to conduct an annual drill related to transport, storage and fumigation processes and that the local DFES is involved in one of these annual drills. Annual ER exercises and training will also be included in the new EP to be developed for the proposed Narngulu DG compound (<i>refer to Table B.3 in Addendum B and SHARE Action ACT-37372</i>).	✓	Add. B, Protect Grain Procedure & CBH SHARE System
		Documented record keeping programme, including required records, frequency of record keeping and record retention periods.	For details of record keeping at CBH, refer under Cl. 9.3 and 9.7 of AS/NZS 5026 in Table C.11 of Addendum C above.	✓	Add. C (Table C.11)
		Proper labelling of product containers / packages as per legislative requirements, including complete name and relevant hazards.	All PH ₃ gas cylinders within Store PS1 at the proposed Narngulu DG compound will be appropriately labelled by the supplier (e.g. Solvay / Cytec) in accordance with ADG Code and regulatory requirements.	✓	Add. A (Photos 11, 14, 21, 22, 24 & 25)
		Clear, documented work procedures, including process clean-up, waste disposal, control of equipment and operations control.	As Store PS1 will only be used for static storage of PH ₃ gas cylinders, work procedures related to process clean-up, control of equipment and operations control are not really relevant. However, CBH does have plans, procedures / SOPs and WIs relevant to storage, handling / use and transport (<i>refer under Cl. 7.2 below</i>).	✓	<i>Refer Cl. 7.2 below</i>
		Emergency plan, including ER actions and evacuation protocols for site alarms and LoC of PH ₃ gas.	As detailed in Addendum B , CBH will develop a new EP for the proposed Narngulu DG compound, which will include response actions in the event of fires, toxic gas releases and spills, as well as requirements related to evacuation, and will be in compliance with relevant industry standards (<i>refer to Table B.3 in Addendum B and SHARE Action ACT-37372</i>).	✓	Add. B, Att. 2 (DGRA) & CBH SHARE System
Operational procedures and personnel	7.2	Clearly written WIs and procedures, with sufficient detail, to be prepared to assure safe handling and processing of PH ₃ . Latest versions of these WIs / procedures to be readily available to relevant personnel.	CBH has developed formal plans, SOPs / procedures and WIs for performing work at CBH sites, including procedures related to ER, maintenance and specific work activities. These documents form part of CBH's IMS and are readily accessible electronically via the SharePoint system. The primary CBH procedures related to safe handling of PH ₃ are the 'Protect Grain Procedure' (predominantly covers fumigation activities) and 'DG and Chemical Management Plan', which addresses all relevant requirements of AIGA 051/20 and AS 4332.	✓	Att. 2 (DGRA), Protect Grain Procedure & DG and Chemical Management Plan

PROPOSED NARNGULU DG COMPOUND

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Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
Operational procedures and personnel (cont'd)	7.2	Operators to be notified and trained when WIs / procedures change. Any changes to these procedures / WIs to be reviewed under management of change (MOC) practices.	Creation, review and revision of IMS documents, as well as records management and retention, is managed in accordance with CBH's Group Procedure 'Document Control, Content and Records Management' and associated 'Document Control' WI. Review frequency is specified at the back of the IMS documents, however plans, SOPs / procedures and WIs are normally reviewed and, if required, updated on an annual basis. Relevant GP personnel are consulted during the review and update of key operating procedures (e.g. 'Protect Grain Procedure' and 'DG and Chemical Management Plan') and, if required due to significant changes, additional training will be provided.	✓	Document Control, Content and Records Management Group Procedure, Document Control WI (STORE-1473931053-243914), Protect Grain Procedure & DG and Chemical Management Plan
		Risk assessment to be conducted for all operations involving PH ₃ .	This Addendum (F), Addenda B, C, D and E , and the site-wide DGRA in Attachment 2 , constitute a detailed DGRA, as required under r.48 of the DG Regs, for storage and handling of DGs (including PH ₃ gas cylinders and AIP) at the proposed Narngulu DG compound. A HLRA has also been developed for transport and use of fumigants, including PH ₃ gas. Checklists, which include a risk assessment component, must also be completed for every fumigation and venting operation, and these are hyperlinked in the Protect Grain Procedure.	✓	Add. B, Add. C, Add. D, Add. E, Att. 2 (DGRA) & Protect Grain Procedure
		Components and materials used in PH ₃ systems to be clearly identified, stored carefully and handled in such a way that they do not become contaminated (including wearing suitable gloves when handling cylinder valves and connections / gaskets).	N/A - Store PS1 within the proposed Narngulu DG compound will only be used for static storage of PH ₃ gas cylinders prior to transport and use for fumigation purposes, i.e. this Cl. is not relevant as it relates to PH ₃ systems. However, it should be noted that the cylinder valves will be provided with protective caps and, as under AS 4332 Cl. 5.2.1(k) in Table F.7 above, these valves will be visually inspected for damage and contamination prior to use (following removal of dust caps).	N/A	Add. A (Photos 11, 14, 21, 22, 24 & 25), Att. 2 (DGRA) & DG and Chemical Management Plan
		Personnel operating PH ₃ gas systems to have a good understanding of the properties and hazards of PH ₃ (e.g. fire / explosion and toxicity), as well as appropriate ER actions and preventative measures / controls to protect personnel.	N/A - It should be noted that Store PS1 will only be used for static storage of PH ₃ cylinders and is not considered a PH ₃ gas system. However, through job-specific training, particularly the Solvay stewardship training, GP personnel have a good understanding of the properties and hazards of PH ₃ and appropriate ER actions and preventative measures / controls to protect personnel.	N/A	Att. 2 (DGRA) & DG and Chemical Management Plan

PROPOSED NARNGULU DG COMPOUND

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Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
Operational procedures and personnel (cont'd)	7.2	Personnel involved in handling PH ₃ and operating PH ₃ systems to be adequately trained, including compatibility of materials and importance of cleanliness.	As stated previously, job-specific training is provided to GP personnel, where required, including, but not limited to: fumigation in the workplace, SCBA, use of portable FEs and FHRs (i.e. responding to minor emergencies), and comprehensive work-based training in the handling of DGs (e.g. Solvay (PH ₃ gas) stewardship training, which includes cylinder handling, and DG driver / transport training). A special induction will also be given to persons required to enter the proposed Narngulu DG compound for the first time. This induction will be completed electronically in ROAM and records kept in SHARE.	✓	Att. 2 (DGRA) & CBH SHARE System
Ventilation	7.3	Proper ventilation required for areas where PH ₃ is processed, stored or handled.	As detailed under AS 4332 Cl. 4.3.2.1 in Table F.6 above, the front of Store PS1 will be completely open and will have a total length of 12 m, which is significantly more than twice the distance to the opposite side (i.e. 2 m). Upper and lower sections of the back and side walls will also be open. Hence, Store PS1 will be provided with adequate natural ventilation in accordance with the requirements of Cl. 4.3.2.1(b).	✓	Add. A (Photos 11, 13, 14, 21 & 22 & DWG. 2014-000-0011 & 2025-307-0575) & Att. 2 (DGRA)
Direct venting into exhaust systems	7.3.1	PH ₃ not to be directly vented into exhaust ventilation systems in concentrations above the lower flammability limit (LFL)(1.6% to 1.8%) as it may cause a fire or explosion. Pure PH ₃ or mixtures greater than the LFL to be diluted with an inert gas prior to venting to reduce risk of fire / explosion.	N/A – Store PS1 within the proposed Narngulu DG compound will only be used for static storage of PH ₃ gas cylinders prior to transport and use for fumigation purposes, i.e. the cylinders will not be vented within the store.	N/A	Add. A (Photos 2, 11, 13, 14, 21 & 22) & Att. 2 (DGRA)
Dedicated process vent	7.3.2	Cl. details requirements for dedicated PH ₃ vents, purging of vent lines with inert gas, minimisation of pressure drops in vent systems, and providing dedicated and isolated purge systems to prevent backflow of PH ₃ .			
Necessity for PH₃ ventilation	7.3.3.1	During normal operations, flammable / toxic gases to only be vented through a properly designed abatement system. Mechanical ventilation to be used for air exchange where PH ₃ is processed or handled.	N/A – Store PS1 within the proposed Narngulu DG compound will only be used for static storage of PH ₃ gas cylinders prior to transport and use for fumigation purposes, i.e. PH ₃ will not be vented, processed or handled within the store.	N/A	

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Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
Types of ventilation	7.3.3.2	Cl. details types of ventilation (natural and mechanical), predominantly for indoor storage and handling areas and gas rooms. Forced ventilation not generally required for outdoor storage.	N/A – As per Cl. 7.3 above, Store PS1 at the proposed Narngulu DG compound will be an outdoor store that is provided with adequate natural ventilation complying with the requirements of AS 4332.	N/A	Add. A (Photos 2, 11, 13, 14, 21 & 22 & DWG. 2014-000-0011) & Att. 2 (DGRA)
Consideration for ventilation design	7.3.3.3	Cl. details design requirements related to mechanical / exhaust ventilation systems.			
		For areas where PH ₃ is processed or stored, suitably sized water sprinkler systems should be installed.	As per Table F.9 above, appropriate firefighting equipment, exceeding the requirements of AS 4332 Cl. 7.4 and Table 7.2, will be provided for Store PS1 within the proposed Narngulu DG compound. As discussed previously, a deluge water sprinkler system (manual and automatic operation) will be installed within Store PS1 to provide an additional level of fire protection.	✓	Table F.9, Add. A (Photos 27 & 28 & DWG. 251011-LAY / BLK-0001) & Att. 2 (DGRA)
		PH ₃ storage and handling areas to be located at an adequate distance from air intakes.	There will be no vents, ducts or air intakes (not associated with the proposed DG compound) within at least 26 m of Store PS1 at the proposed Narngulu DG compound.	✓	Add. A (DWG. 2025-307-0573 / 0575)
Ongoing maintenance and PM	7.4	Clause details the requirements for routine and preventative maintenance of PH ₃ handling equipment.	N/A – Store PS1 within the proposed Narngulu DG compound will only be used for static storage of PH ₃ gas cylinders prior to transport and use for fumigation purposes, i.e. there will be no associated PH ₃ handling equipment.	N/A	Add. A (Photos 11, 13, 14, 21 & 22) & Att. 2 (DGRA)
GAS CYLINDER FILLING / PACKAGING					
Gas cylinder filling / packaging	8	Section 8 of the Phosphine CoP details requirements for PH ₃ gas cylinder filling facilities, including cylinders, valves and pressure relief devices, fill density, filling equipment, manifolds, compressors, vacuum pumps and pressure gauges.	N/A – Store PS1 within the proposed Narngulu DG compound will only be used for static storage of PH ₃ gas cylinders prior to transport and use for fumigation purposes. Empty cylinders will be collected by the supplier (Solvay) and replaced with full cylinders. Empty VaporPhos cylinders are refilled overseas by Solvay / Cytec in Canada.	N/A	Add. A (Photos 11, 13, 14, 21 & 22), Att. 2 (DGRA) & Solvay Stewardship Training
STORAGE AND HANDLING					
General guidelines	9.1	Facility to have an EP that includes recommended ER actions and emergency evacuation requirements.	As detailed in Addendum B , CBH will develop a new EP for the proposed Narngulu DG compound, which will include ER actions in the event of fires, toxic gas releases and spills, as well as requirements related to evacuation, and will comply with relevant industry standards (<i>refer to Table B.3 in Addendum B and SHARE Action ACT-37372</i>).	✓	Add. B, Att. 2 (DGRA) & CBH SHARE System

PROPOSED NARNGULU DG COMPOUND

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Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
General guidelines (cont'd)	9.1	SDS to be readily available / accessible.	Electronic copies of SDSs are accessible either via ChemAlert or the GP SDS Register in STORE365. Hard copies of relevant SDS will also be provided in the EICs at Narngulu site entrance and outside the proposed DG compound. SDSs for gases to be stored and handled at the proposed Narngulu DG compound in quantities above 'manifest' levels under Schedule 1 of the DG Regs are included in Attachment 3 .	✓	Add. A (Photos 2 & 18), Att. 2 (DGRA) & Att. 3 (SDS)
		Ensure good housekeeping, including preventing build-up of combustible materials in storage and handling areas.	The condition of the proposed Narngulu DG compound, including build-up of combustible materials or dry vegetation will be regularly checked as part of the CBH 'DG Compound Weekly Inspection' in ROAM.	✓	Att. 2 (DGRA)
		Cylinder valve outlet caps to be installed, except when cylinder is in use or being filled. Check for foreign material and insects prior to removing the valve protection caps.	The valve outlets of the PH ₃ gas cylinders (VaporPhos and EcoFume) to be stored within Store PS1 at the proposed Narngulu DG compound will be fitted with gas-tight outlet caps and protective cylinder valve guards / caps. These caps will not be removed within Store PS1, however, the valves will be visually inspected for damage and contamination prior to use. Any affected cylinders would be tagged out of service and replaced by the supplier (Solvay).	✓	Add. A (Photos 11, 14, 21, 22, 24 & 25) & DG and Chemical Management Plan
		Always secure PH ₃ cylinders during storage, use and transportation.	All PH ₃ gas cylinders within Store PS1 will be stored upright and securely strapped into metal pallets / stillages to prevent them from falling. Although this compliance checklist only applies to static storage of PH ₃ gas cylinders within Store PS1, it should be noted that the cylinders will also be secured during use and transport (within HDS / PDS units) (refer to Section 14.4.1 of the CBH 'DG and Chemical Management Plan').	✓	Add A (Photos 11, 14, 21 & 22), Att. 2 (DGRA) & DG and Chemical Management Plan
		Never strike a PH ₃ cylinder with an arc (with welding electrode).	Any hot work within Store PS1 at the proposed Narngulu DG compound will be managed in accordance with the CBH Hot Work SOP. Also, as per Section 13.7.2 of the CBH 'DG and Chemical Management Plan', a detailed JSA must be completed prior to any non-routine works being undertaken within the proposed DG compound and all DGs must be removed from the immediate area.	✓	Att. 2 (DGRA), Hot Work SOP & DG and Chemical Management Plan

PROPOSED NARNGULU DG COMPOUND

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Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
General guidelines (cont'd)	9.1	Do not allow cylinders to make contact with electrical circuits.	As detailed previously, there will be no fixed electrics installed within Store PS1. There will be some power sockets in the Vehicle Parking Shelter and a small electric pump associated with the 5,000 L water tank within the proposed Narngulu DG compound, however, these will be located more than 8 m away from Store PS1.	✓	Add. A (Photos 9, 11, 13, 14, 21, 22 & 26 & DWG. 2025-307-0575) & Att. 2 (DGRA)
		Do not expose cylinders to corrosive chemicals or vapours, e.g. bleach or salt water.	Store PS1 will be a dedicated gas store and will be appropriately separated / segregated from other DG storage areas (Stores PS2 and PS3) within the proposed Narngulu DG compound (<i>refer below</i>). No corrosive chemicals will be stored or handled within the proposed DG compound.	✓	Add. A (Photos 2, 11, 13, 14, 21, 22 & 23 & DWG. 2025-307-0575), Att. 1 (Site DG Manifest) & Att. 2 (DGRA)
		Cylinder valves to be securely closed, outlet seals tightly fitted, and valve protection caps installed during all storage and handling activities.	As above, the valve outlets of the PH ₃ gas cylinders kept within Store PS1 will be fitted with gas-tight outlet caps and protective cylinder valve guards / caps. The caps will not be removed in the store.	✓	Add. A (Photos 11, 14, 21, 22, 24 & 25)
Storage - segregation	9.2.1	Segregation of full and used cylinders. Cylinders containing any residual gas to be treated as if they were full.	Stillages of full and used PH ₃ cylinders will be kept in separate areas within Store PS1. This requirement, and the requirement to treat empty cylinders as if they were full, is included in Section 13.10.3 of the CBH 'DG and Chemical Management Plan'.	✓	DG and Chemical Management Plan
		Cylinders to be segregated based on the hazards they pose.	As detailed under AS 4332 Cl. 4.4.3 in Table F.6 above, EcoFume (Division 2.3) and VaporPhos (Division 2.3, SR 2.1) gas cylinders in Store PS1 within the proposed Narngulu DG compound will be segregated by the required minimum distance of 3 m. Segregation requirements and all relevant requirements of AS 4332 and the Phosphine CoP (AIGA 051/20) are clearly stated in Sections 13.6.4 and 13.10.3 of the CBH 'DG and Chemical Management Plan'. Segregation of gases will also be checked during regular inspections using the 'DG Compound Weekly Inspection' in ROAM.	✓	Add. A (Photos 11, 13, 14, 21 & 22 & DWG. 2014-000-0011 & 2025-307-0575), Att. 2 (DGRA), Hot Work SOP & DG and Chemical Management Plan
		PH ₃ cylinders to be stored in a well-ventilated area away from incompatible substances (e.g. oxidisers), flammable liquids, open flames, sparks and sources of heat. Incompatible gases to be separated by appropriate distances (as per legislative requirements or 6 m) or fire wall.	As mentioned previously, Store PS1 will be provided with adequate natural ventilation, there will be no heat sources or incompatible substances within the proposed Narngulu DG compound, and open flames, sparks and other ignition sources will be excluded or controlled under a hot work permit.		

PROPOSED NARNGULU DG COMPOUND

Dangerous Goods Risk Assessment

Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
Storage – segregation (cont'd)	9.2.1	PH ₃ cylinders to be separated from electrical devices that are not explosion-proof in accordance with legislative requirements or 5 m.	As per Cl. 9.1 above, there will be no fixed electrics installed within Store PS1. There will be some power sockets in the Vehicle Parking Shelter and a small electric pump associated with the 5,000 L water tank within the proposed Narngulu DG compound, however, these will be located more than 8 m away from Store PS1.	✓	Add. A (Photos 9, 11, 14, 21, 22 & 26 & DWG. 2014-000-0011 & 2025-307-0575) & Att. 2 (DGRA)
Storage condition	9.2.2	Practice first-in-first-out cylinder management.	This practice (i.e. fully using one stillage of PH ₃ gas cylinders prior to taking cylinders from a newly delivered stillage) is adhered to by GP personnel, and the requirement is included in Section 13.10.3 of the CBH 'DG and Chemical Management Plan'.	✓	DG and Chemical Management Plan
		Cylinders to be stored under dry conditions and on level ground to minimise potential for falling.	Gas cylinders within Store PS1 will be located on a level, concrete floor at ground level and inside a roofed, fenced enclosure. The floor of the proposed Narngulu DG compound will be maintained in good condition and will maintain integrity under all weather conditions. All PH ₃ gas cylinders within Store PS1 will be securely strapped into metal pallets / stillages to prevent them from falling.	✓	Add. A (Photos 11, 13, 14, 21 & 22 & DWG. 2014-000-0011 & 2025-307-0575)
		PH ₃ storage quantity to comply with regulatory requirements and not exceed the design capacity of the facility.	The quantity of PH ₃ gas (VaporPhos and EcoFume) stored in Store PS1 at the proposed Narngulu DG compound will be in compliance with regulatory requirements (e.g. the DG Regs and AS 4332) and will not exceed the design capacity of the facility / storage area.	✓	Att. 1 (Site DG Manifest) & Att. 2 (DGRA)
		PH ₃ cylinders to be stored in such a way as to prevent recommended storage temperature from being exceeded.	The SDSs for VaporPhos and EcoFume specify a recommended storage temperature below 60°C, however, the supplier (Solvay) has confirmed that this is related to manual handling of hot cylinders and not over-pressurisation of cylinders (or decomposition) due to high temperatures. Store PS1 will be provided with adequate shade and natural ventilation.	✓	Add. A (Photos 11, 13, 14, 21 & 22 & DWG. 2014-000-0011 & 2025-307-0575), Att. 2 (DGRA) & Att. 3 (SDS)
		Cylinders to be stored upright / vertically and secured / restrained to prevent them from falling. Smaller cylinders may be stored horizontally if allowed under local regulations and not fitted with pressure relief valves.	All PH ₃ gas cylinders within Store PS1 will be stored upright and securely strapped into metal pallets / stillages to prevent them from falling. The PH ₃ cylinders will be large 'G' size cylinders (i.e. not small cylinders that can be stored horizontally).	✓	Add. A (Photos 11, 13, 14, 21 & 22 & DWG. 2014-000-0011 & 2025-307-0575) & Att. 2 (DGRA)
		Where large quantities of flammable gas are stored indoors, a blast wall or roof should be incorporated into the room design to allow dissipation of pressure in the event of an explosion.	N/A – Store PS1 within the proposed Narngulu DG compound will be an outdoor store that is provided with adequate natural ventilation.	N/A	

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Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
Storage condition (cont'd)	9.2.2	Some countries do not allow outdoor storage of PH ₃ gas.	N/A – Cl. 4.2.1 of AS 4332 states that a gas cylinder store may be indoor or outdoor, however, indoor storage is to be avoided where possible.	N/A	AS 4332
Handling - essentials	9.3.1	Personnel handling PH ₃ cylinders to be provided with appropriate training.	As stated previously, GP personnel are provided with comprehensive work-based training in the handling of DGs (e.g. Solvay (PH ₃ gas) stewardship training, which includes cylinder handling, and DG driver / transport training). A special induction will also be provided to persons required to enter the proposed DG compound for the first time. This induction will be completed electronically in ROAM and records kept in SHARE.	✓	Att. 2 (DGRA), DG and Chemical Management Plan & CBH SHARE System
		Handling systems for PH ₃ to be constructed from compatible materials (refer to SDS).	N/A – Store PS1 within the proposed Narngulu DG compound will be used for static storage, rather than handling, of PH ₃ cylinders. However, the store will be constructed from concrete and steel, which are compatible with PH ₃ .	N/A	Add. A (Photos 2, 13, 14, 21 & 22 & DWG. 2014-000-0011) & Att. 3 (SDS)
		Appropriate PPE to be worn when handling PH ₃ cylinders, including steel capped boots, safety glasses and leather gloves. Additional PPE (e.g. flame-resistant / anti-static clothing, respiratory protection such as gas filter or SCBA) to be considered and determined after a risk assessment.	As a minimum requirement, all GP personnel entering the proposed Narngulu DG compound will be required to wear safety boots, safety glasses, high visibility shirt, long trousers and a personal PH ₃ gas monitor (e.g. PAC-8000 or ToxiPro). When handling PH ₃ cylinders, personnel are also required to wear leather gloves. Requirements regarding PPE selection, use and maintenance are detailed in Section 13 of the CBH 'Personal Health and Safety' Standard.	✓	Att. 2 (DGRA), Protect Grain Procedure, DG and Chemical Management Plan & CBH Personal Health and Safety Standard
		Piping, cabinets and equipment used to handle PH ₃ to have electrical continuity and be earthed / grounded.	N/A – Store PS1 within the proposed Narngulu DG compound will be used for static storage of PH ₃ cylinders only, i.e. there will be no piping, cabinets or equipment requiring earthing.	N/A	Add. A (Photos 2, 11, 13, 14, 21, 22, 24 & 25 & DWG. 2014-000-0011 & 2025-307-0575), Att. 2 (DGRA) & DG and Chemical Management Plan
Handling - precautions	9.3.2	Valve outlet cap or connections to be removed slowly and inspected for signs of leakage before removing completely. Always stand to the side of the cylinder when removing the valve outlet cap or breaking a connection.	N/A – Store PS1 will only be used for static storage of PH ₃ cylinders prior to transport and use for fumigation, i.e. cylinder valves will not be opened, or their protective caps removed, within the store. However, as mentioned previously, cylinder valves will be visually inspected for damage and contamination prior to use (following removal of dust caps).	N/A	
		Always open valves slowly and carefully.			
		Filling and use of PH ₃ cylinders to only be carried out in exhausted enclosures or well-ventilated rooms, with the discharge treated to below acceptable concentrations before emission to the atmosphere.	N/A – Store PS1 within the proposed Narngulu DG compound will only be used for static storage of PH ₃ gas cylinders prior to transport and use for fumigation purposes, i.e. the cylinders will not be filled or used in the store.	N/A	

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Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
Checking - container	9.3.3.1	Cleanliness of valve outlet and pigtails to be checked before use.	N/A – Store PS1 in the proposed Narngulu DG compound will only be used for static storage of PH ₃ cylinders prior to transport and use for fumigation, i.e. the cylinders and associated equipment / connections will not be used in the store.	N/A	Add. A (Photos 2, 11, 12, 13, 14, 21, 22, 24 & 25), Att. 2 (DGRA) & DG and Chemical Management Plan
		Cylinders and connections checked for leaks before use.			
		Gas testing prior to entry into any enclosed spaces potentially containing highly toxic gas (if there is no fixed gas detection system installed).	There will be no enclosed spaces within Store PS1 as it will be well-ventilated. Regardless, GP personnel accessing the DG compound will wear a personal gas monitor (e.g. PAC-8000 or ToxiPro) at all times, which would alert them to any PH ₃ concentrations above 0.3 ppm (8-hour TWA).	✓	
Checking - piping	9.3.3.2	Always purge piping systems with inert gas before introduction of PH ₃ and disconnection of PH ₃ cylinders. Application of a vacuum is also recommended to aid in the purging system.	N/A – Store PS1 within the proposed Narngulu DG compound will only be used for static storage of PH ₃ gas cylinders prior to transport and use for fumigation purposes, i.e. there will be no associated piping systems.	N/A	Add. A (Photos 11, 13, 14, 21 & 22 & DWG. 2014-000-0011 & 2025-307-0575) & Att. 2 (DGRA)
Prohibition and restriction	9.3.4	Personnel not to use adaptors to connect cylinders.	N/A – Store PS1 within the proposed DG compound will only be used for static storage of PH ₃ cylinders prior to transport and use for fumigation, i.e. no connection of cylinders within the store.	N/A	DG and Chemical Management Plan
		Cylinder valves, handwheels, connections or outlet caps not to be over-tightened (follow manufacturer's recommendations).	Although PH ₃ cylinder valves will not be opened or closed within Store PS1, the supplier (Solvay) has stated that dust caps on used VaporPhos cylinders should be tightened prior to return, i.e. hand tightened and then another 1/8 to 1/4 turn with a wrench. This requirement is included in Section 13.10.3 of the CBH 'DG and Chemical Management Plan'.	✓	
		Never drag or slide cylinders or lift them by the valve protection cap.	PH ₃ gas cylinders within Store PS1 will predominantly be moved using a suitable trolley or forklift (for whole stillage). The requirements of AS 4332 Cl. 5.2.1 (o) and AIGA 051/20 related to movement and transport of gas cylinders at CBH DG sites is included in Section 13.10.3 of the CBH 'DG and Chemical Management Plan'.	✓	
		Use appropriate cylinder trolleys or other moving devices to minimise rolling of cylinders over long distances. Never use cylinders as a roller to move equipment.			
Electrical equipment in PH ₃ storage and handling areas to be intrinsically safe / appropriate to HAC zoning guidelines in national regulations.	The only flammable gas to be stored and handled in Store PS1 is VaporPhos, which has a Division 2.1 SR. Based on AS 60079, a Zone 2 HA may exist around a flammable gas cylinder as follows: 0.5 m above and laterally from the cylinder valve; and 1.5 m laterally from the cylinder base. As detailed previously, adequate natural ventilation will be provided in the store and there will be no fixed electrics within Store PS1.	✓	Add. A (Photos 11, 13, 14, 21, 22 & 24 & DWG. 2014-000-0011 & 2025-307-0575) & Att. 2 (DGRA)		

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Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
Prohibition and restriction (cont'd)	9.3.4	Use of portable electronic devices (e.g. mobile phones and radios) may be prohibited depending on the HAC of the area. Prohibit other sources of ignition (e.g. smoking).	As discussed under AS 4332 Cl. 5.2.2 in Table F.7 above, as per Section 13.7 of the 'DG and Chemical Management Plan', generation of a HA within the proposed DG compound is not considered credible due to the nature of VaporPhos / EcoFume and effective ventilation of Store PS1. Hence, there will be no restrictions on carrying or using portable electrical equipment (e.g. cameras and mobile phones) in the proposed Narngulu DG compound. Smoking and ignition sources will be prohibited in the proposed Narngulu DG compound and associated Gas Cylinder Store (Store PS1) and there will be appropriate warning signage provided around the compound, including on the front of the gas cylinder cages, stating "DANGER – NO SMOKING, NO IGNITION SOURCES".	✓	Add. A (Photos 2, 11, 14 & 21), Att. 2 (DGRA) & DG and Chemical Management Plan
		Use of non-sparking tools recommended around PH ₃ storage and handling areas.	As per Section 13.7 of the 'DG and Chemical Management Plan', generation of a HA within the proposed DG compound is not considered credible due to the nature of VaporPhos / EcoFume and effective ventilation of Store PS1. Hence, use of non-sparking tools within the DG compound will not be a specific CBH requirement. However, regardless, use of any sparking tools / equipment within the proposed DG compound and associated Store PS1 will be managed as hot work under the Hot Work SOP.	✓	Att. 2 (DGRA), Hot Work SOP & DG and Chemical Management Plan
Security	9.4	Due to the potential consequences of PH ₃ exposure, security measures in place to prevent access to PH ₃ cylinders by unauthorised personnel.	As per Addendum B above, there is no security fencing around the Narngulu site, only ring lock fence. The proposed DG compound, in which Store PS1 will be located, will be a secure fenced area with locked gates (and restricted key access). Store PS1 will also be locked when not in use. There will also be warning signage, i.e. "RESTRICTED AREA – AUTHORISED PERSONNEL ONLY", displayed on the security fencing around the compound.	✓	Add. A (Photos 1, 2, 5, 14, 21 & 22), Add. B & Att. 2 (DGRA)
		Tracking records during shipment of PH ₃ to be issued and kept.	N/A – The supplier (Solvay / Cytec) is responsible for keeping tracking records for shipments of PH ₃ cylinders.	N/A	N/A
GAS SUPPLY TO POINT-OF-USE					
Gas supply systems	10	Section 10 of the Phosphine CoP details requirements for gas supply systems, including process line control / purging and regulators for PH ₃ delivery systems.	N/A – Store PS1 within the proposed Narngulu DG compound will only be used for static storage of PH ₃ gas cylinders prior to transport and use for fumigation purposes, i.e. there will be no associated gas supply systems.	N/A	Add. A (Photos 11, 13, 14, 21 & 22) & Att. 2 (DGRA)



PROPOSED NARNGULU DG COMPOUND

Dangerous Goods Risk Assessment

Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
GAS ABATEMENT SYSTEMS					
Gas abatement systems	11	Section 11 of the Phosphine CoP details requirements for gas abatement system to control any PH ₃ emissions, including basic principles of abatement, reclamation / recovery, oxidation via incineration or wet scrubber, absorption / adsorption and reaction on a treated solid (with metallic oxides), physical adsorption on solid media, and waste stream disposal / waste management.	N/A – Store PS1 within the proposed Narngulu DG compound will only be used for static storage of PH ₃ gas cylinders prior to transport and use for fumigation purposes, i.e. there will be no routine / intentional PH ₃ emissions associated with the storage and, hence, no gas abatement system will be required.	N/A	Add. A (Photos 11, 13, 14, 21 & 22) & Att. 2 (DGRA)
EMERGENCY RESPONSE (ER)					
ER - Preparation	12.1	EP to be reviewed periodically and updated, as required.	The new EP to be developed for the proposed Narngulu DG compound (<i>refer to Table B.3 in Addendum B and SHARE Action ACT-37372</i>) will be updated whenever a significant change occurs or at least annually.	✓	Add. B, Att. 2 (DGRA) & CBH SHARE System
		Procedures in place to address emergency situations that affect public health and environmental concerns in an event of an accident.	As detailed in Addendum B , CBH will develop an EP for the proposed Narngulu DG compound, which will include response actions in the event of fires, toxic gas releases and spills, as well as requirements related to evacuation, and will comply with relevant industry standards (<i>refer to Table B.3 in Addendum B and SHARE Action ACT-37372</i>).	✓	Add. B, Att. 2 (DGRA) & CBH SHARE System
		EP to identify potential emergency scenarios that could occur and specify ER actions to prevent, prepare for, respond to, and recover from these (including prevention and mitigation of environment impacts).			
		Emergency contact list reviewed and updated with each change, and latest version to be maintained.	The new EP to be developed for the proposed Narngulu DG compound (<i>refer to Table B.3 in Addendum B and SHARE Action ACT-37372</i>) will include the requirement to notify neighbours in the event of certain emergency scenarios (e.g. where evacuation is required due to fire / toxic gas release) and will provide contact details for neighbours.	✓	Add. B, Add. E, Att. 2 (DGRA) & CBH SHARE System
		EP to consider chemicals and quantities involved, types of hazard and response efforts required (including number of responders). EP to consider immediate control measures (emergency) and long-term activities (remedial actions) to restore acceptable conditions.	As detailed in Addendum B , CBH will develop an EP for the proposed Narngulu DG compound, which will include response actions in the event of fires, toxic gas releases and spills, as well as requirements related to evacuation, and will comply with relevant industry standards (<i>refer to Table B.3 in Addendum B and SHARE Action ACT-37372</i>).	✓	Add. B, Att. 2 (DGRA) & CBH SHARE System



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Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
ER – Preparation <i>(cont'd)</i>	12.1	EP to be tested periodically including tests of leak detection equipment, PPE, protective systems and emergency communications.	<p>As per Section 12.2 of the Protect Grain Procedure, CBH terminals and sites are required to conduct an annual drill related to transport, storage and fumigation processes and the local DFES is to be involved in one of these annual drills. Annual ER exercises will also be addressed in the new EP to be developed for the proposed Narngulu DG compound (<i>refer to Addendum B and SHARE Action ACT-37372</i>).</p> <p>As mentioned previously, there will be no dedicated fire alarm system provided for the proposed DG compound or associated Narngulu site. However, there will be an alarm associated with the deluge water sprinkler system in Store PS1, which is tested at least monthly.</p> <p>The FEs and FHR associated with the proposed Narngulu will be inspected / tested and, if required, maintained on a 6-monthly basis by a specialist contractor (Mitchell & Brown Fire Services). The condition and operability of the safety shower / eyewash and FHR within the proposed DG compound will also be checked as part of the CBH 'DG Compound Weekly Inspection' in ROAM.</p> <p>As per the Protect Grain Procedure, SCBA units must have a mandatory weekly check to ensure that they are available and fit for purpose, and the inspection is recorded on the weekly SCBA control log. The GP fumigation personnel must also wear SCBA equipment once per month to remain familiar with the equipment.</p>	✓	Add. E, Att. 2 (DGRA), Protect Grain Procedure, DG and Chemical Management Plan & CBH SHARE System

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Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
ER – Preparation <i>(cont'd)</i>	12.1	Training to be provided for all personnel who may be involved in ER.	<p>Where required, GP personnel are trained in the use of portable FEs and FHRs (i.e. responding to minor emergencies training). Many CBH personnel (all frontline staff), including those at the Narngulu site, have been provided with appropriate Advanced First Aid training. All licensed GP personnel must have first aid training, including the use of a BVM.</p> <p>Section 12.2 of the Protect Grain Procedure requires CBH terminals and sites to conduct an annual drill related to transport, storage and fumigation processes and that the local DFES is involved in one of these annual drills. Annual ER exercises and training will also be addressed in the new EP to be developed for the proposed Narngulu DG compound (<i>refer to Addendum B and SHARE Action ACT-24554</i>).</p>	✓	Add. B, Att. 2 (DGRA), Protect Grain Procedure & CBH SHARE System
EP to be based on the following principles:					
Recognition	12.1.1	Recognition of the type and degree of the hazard presented by PH ₃ .	<p>As mentioned previously within this DGRA report, a new EP will be developed for the proposed Narngulu DG compound. This EP will address the hazards associated with PH₃, include ER actions in the event of fires, toxic gas releases and spills, and identify the requirement to contact external emergency services (e.g. DFES) for assistance in the event of certain emergencies involving PH₃. The EP will comply with relevant industry standards (<i>refer to Table B.3 in Addendum B and SHARE Action ACT-37372</i>).</p>	✓	Add. B, Att. 2 (DGRA) & CBH SHARE System
Evaluation	12.1.2	Responder to predict the behaviour and anticipated problems with PH ₃ that may extend beyond the property boundary and may require support from local authorities. SDS or other product information used to help evaluate the potential impact to public health and the environment.			
Control	12.1.3	Includes methods to prevent or reduce impacts of an incident, which is addressed by remedial actions in the form of documented procedures.			
Information	12.1.4	EP to include notification of employees, local emergency response officials, corporate compliance, corporate safety and government agencies, etc. All incidents to be documented and reviewed to determine the root cause and implement appropriate corrective actions to prevent reoccurrence.	<p>The new EP to be developed for the proposed Narngulu DG compound (<i>refer to Table B.3 in Addendum B and SHARE Action ACT-37372</i>) will include responsibilities for notification / communications and raising the alarm.</p> <p>As per the CBH 'Incident Management' Group Procedure, all incidents, including DG related incidents, are reported / recorded in the CBH Share system on a daily basis and communicated to all CBH personnel via email. Incident records are kept in SHARE. The requirement for an incident investigation is dependent on the severity of the incident and a serious incident / near miss requires a detailed ICAM investigation.</p>	✓	Add. B, CBH Incident Management Group Procedure & CBH SHARE System



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Aspect	Cl.	AIGA 051/20 Specification	Proposed	Status (✓ or ✗)	Ref.
Safety	12.1.5	Safety considerations to be an input to every activity and an outcome of each response undertaken. All personnel to work in a safe way and follow established safety rules and regulations.	<p>Safety considerations for all work activities are identified and addressed through risk assessments / JSAs, inspections, audits and Take5 assessments. The new EP to be developed for the proposed Narngulu DG compound will state that specific ER actions (e.g. those related to fire and toxic gas releases) are only to be implemented if safe to do so.</p> <p>CBH has a strong commitment to safety and risk control through formal policies, standards, plans, SOPs / procedures and WIs. These documents are easily accessible via the CBH intranet / SharePoint (SHARE) system. All CBH personnel and contractors are required to work in accordance with CBH's Life Saving Rules (related to motor vehicles, confined spaces, working at heights, areas under fumigation, plant and equipment, and drugs and alcohol) to ensure that they all return home safely at the end of each working day.</p>	✓	Att. 2 (DGRA), CBH Hazard, Risk and Change Management Group Procedure (STORE-1473931053-382) & CBH intranet / SHARE System
Response	12.1.6	Only properly trained personnel with adequate PPE are to respond to an incident / emergency (but only to the level of their training). EP to include procedures / actions to be followed in an emergency. Off-site response and interactions with external resources and neighbouring facilities to be considered in the EP.	<p>As per Cl. 5.1 above, GP personnel are only trained to respond to minor fires and PH₃ leaks (including the use of FEs, FHRs and SCBA).</p> <p>Section 12.2 of the Protect Grain Procedure requires that, in an emergency, GP personnel must wear SCBA (and protective clothing) when approaching a fire involving toxic substances / gases and/or when there is an uncontrolled PH₃ gas release with concentrations greater than 15 ppm.</p> <p>GP fumigation personnel are trained in the use of SCBA and must also wear SCBA equipment once per month to remain familiar with the equipment. However, in the unlikely event of a significant incident involving PH₃ cylinders inside the proposed Narngulu DG compound, it is expected that the area would be evacuated and emergency services (e.g. DFES) contacted to manage the emergency. However, this will be reassessed during development of the new EP for the proposed Narngulu DG compound (refer to <i>Table B.3</i> in Addendum B and SHARE Action ACT-37372).</p>	✓	Add. B, Att. 2 (DGRA), Protect Grain Procedure & CBH SHARE System



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Table F.12 Areas of Non-Conformance and Action Plan

No.	Description	Action Plan	Actionee	Due date	Date Completed	Actionee Comments
-	-	-	-	-	-	-

Refer to SHARE Action ACT-37372.

Compliance Check Summary

This **proposed** – Gas Cylinder Store (Store PS1) – **complies with** AS 4332-2004 and the Phosphine CoP (AIGA 051/20).

Compliance is subject to CBH implementing commitments based on the SHARE Actions outlined within this checklist.

Name of assessor: Paul Hathway

Date: 08/05/2026



Signature: _____



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ATTACHMENT 1

(DRAFT) SITE DANGEROUS GOODS MANIFEST



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PROPOSED NARNGULU DG COMPOUND
Dangerous Goods Risk Assessment



PROPOSED NARNGULU DG COMPOUND
Dangerous Goods Manifest

Site Dangerous Goods (DG) Manifest

Proposed Narngulu DG Compound



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Dangerous Goods Risk Assessment



PROPOSED NARNGULU DG COMPOUND

Dangerous Goods Manifest

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1. GENERAL INFORMATION

Occupier / Operator:	CBH Group
Address of premises:	Lot 15 (No 1795) Arthur Road, Narngulu, WA 6532

1.1. Acronyms and Abbreviations

Term	Definition
AIP	Aluminium phosphide
AR	Air Receiver
CL	Combustible liquid
DG	Dangerous Goods
GtDtT	Goods too dangerous to transport
H&S	Health and Safety
IBC	Intermediate Bulk Container
ID	Identification
kg	kilogram (for solids)
L	litres (for gas or liquid)
LGIRS	(Department of) Local Government, Industry Regulation and Safety
N/A	Not Applicable
N.O.S.	Not Otherwise Specified
PG	Packing Group
PS	Package Store
SR	Sub-risk
UN No.	United Nations number
WA	Western Australia

1.2. Change Management

Changes to this document shall be managed, reviewed and updated as described in the Document Control Content and Records Management Procedure.

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Dangerous Goods Manifest



2. EMERGENCY CONTACTS

Name	Position	Telephone
Cory Foot	Manager – Area 01	0417 726 001
Colette Newton	General Manager – Geraldton Zone	0406 052 026
Kirsty Fleay	Manager – Quality & Protection	0427 085 611
Graham Vaughan	Supervisor - Grain Protection	0428 953 882
Jamie McMahon	Maintenance Supervisor	0417 902 027
Jade Smith	Specialist H&S – Geraldton Zone	0438 781 319

3. SUMMARY INFORMATION DANGEROUS GOODS QUANTITIES

Class, Division, CL or GtDtT	PG	Average quantity (L or kg)	Maximum quantity (L or kg)
2.2	N/A	1,800 L ⁽²⁾	1,800 L ⁽²⁾
2.3	N/A	600 L	800 L
2.3 (SR 2.1)	N/A	1,600 L	1,600 L
4.3 (SR 6.1)	I	1,000 kg ⁽¹⁾	2,000 kg ⁽¹⁾

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4. BULK (OTHER THAN IBC) DANGEROUS GOODS STORAGE

Storage ID	Proper Shipping Name	Common name	UN No.	Class / Division	SR	PG	Container Type	Placarding Quantity (L / kg)	Maximum Quantity (L / kg)
-	-	-	-	-	-	-	-	-	-

5. PACKAGED OR IBC DANGEROUS GOODS STORAGE (AT PLACARD QUANTITY)

5.1. Packaged or IBC Dangerous Goods of PG I, Division 2.3 or GtDtT

Storage ID	Proper Shipping Name	Common name	UN No.	Class / Division	SR	PG	Placarding Quantity (L / kg)	Average Quantity (L / kg)	Maximum Quantity (L / kg)
PS1	PHOSPHINE	VaporPhos	2199	2.3	2.1	N/A	50 L	1,600 L	1,600 L
	LIQUEFIED GAS, TOXIC, N.O.S. (Phosphine)	EcoFume	3162	2.3	-	N/A	50 L	600 L	800 L
PS2	ALUMINIUM PHOSPHIDE	AIP Blankets	1397	4.3	6.1	I	50 kg	1,000 kg ⁽¹⁾	2,000 kg ⁽¹⁾
PS3	ALUMINIUM PHOSPHIDE	Spent AIP blankets							

Notes:

1. This quantity of AIP includes new blankets in 20.4 kg steel drums within the AIP Freight Container (PS2) and spent blankets within the Waste Storage Area (PS3).

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5.2. Packaged or IBC Dangerous Goods of Divisions 2.1, 2.2, PGI/III or CL

Storage ID	Proper Shipping Name	Common name	UN No.	Class / Division	SR	PG	Placarding Quantity (L / kg)	Maximum Quantity (L / kg)
PS1	NITROGEN, COMPRESSED	Nitrogen	1066	2.2	-	-	1,000 L	1,800 L ⁽²⁾

Notes:

2. This quantity of Division 2.2 gases comprises up to a maximum 3 stillages of 'G' size nitrogen gas cylinders (i.e. 36 x 50 L).

6. DANGEROUS GOODS (AT PLACARD QUANTITY) MANUFACTURE OR PROCESS LOCATIONS

Storage ID	Proper Shipping Name	Common name	UN No.	Class / Division	SR	PG	Placarding Quantity (L / kg)	Maximum Quantity (L / kg)
-	-	-	-	-	-	-	-	-

7. DANGEROUS GOODS IN TRANSIT

N/A – No DGs in Transit currently on site.

8. SITE PLAN

2025-307-0572 / 0573 – Draft Site Location Plan developed, however, prior to submission of a DG Licence Application to LGIRS, this will be amended to comply with the requirements of a DG Site plan under r. 78 and Schedule 3, Division 3 of the DG Regulations.



PROPOSED NARNGULU DG COMPOUND Dangerous Goods Risk Assessment



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9. DOCUMENT CONTROL

Authorities

Approved By	N/A (Draft)	Approval Date	N/A (Draft)
Review Frequency	Annual	Next Review Date	N/A (Draft)
Owner	Dangerous Goods Specialist	Custodian	Dangerous Goods Specialist
Division	Operations	Department	Grain Protection

Review History

Version	Date	Author	Description of Revision
0.1	12/05/2026	Dangerous Goods Specialist	Draft, issued for DA, not published



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ATTACHMENT 2

SITE-WIDE DANGEROUS GOODS RISK ASSESSMENT (DGRA)



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Dangerous Goods Risk Assessment

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Table 1 Site Wide Dangerous Goods Risk Assessment (DGRA)

Site details

Operator name Co-operative Bulk Handling Limited (CBH)	Dangerous goods site licence no. N/A – This DGRA is for a proposed new DG compound at CBH’s Narngulu site.
Proposed site location and address CBH Narngulu, Arthur Road, Narngulu, WA 6532.	<p>Description of dangerous goods storage or handling systems</p> <p>Co-operative Bulk Handling Limited (CBH) is Australia’s largest co-operative and a leader in the Australian grain industry, with operations extending along the value chain from grain storage, handling, transport, marketing and processing. CBH operates numerous grain receipt, storage and outloading sites spanning from Geraldton in the north, Esperance in the south and out to Merredin in the east of Western Australia (WA). CBH’s operations include a site located at 4 Haigh Street, West End in Geraldton, WA.</p> <p>The Geraldton (West End) site stores and handles dangerous goods (DGs) in quantities above those that require a licence under the WA Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007 (DG Regs) and, consequently, CBH holds an existing DG licence (DGS022072) for the site. The West End site stores fumigants, in the form of solid AIP blankets (Division 4.3, sub-risk (SR) 6.1), cylinders of Division 2.3 (Toxic) gas (EcoFume) and Division 2.3 (Toxic) SR 2.1 (Flammable) gas (VaporPhos), as well as Division 2.2 (Non-flammable, Non-toxic) gas cylinders (e.g. Nitrogen (N₂)), in a dedicated DG compound. However, the highly saline, windy environment at West End has already resulted in significant corrosion of the steel infrastructure within the DG compound. Based on this, and its proximity to light industrial properties (within 70m), CBH proposes to relocate the Geraldton DG compound to a more remote site at Narngulu. This would involve:</p> <ul style="list-style-type: none"> • Preliminary earthworks and drainage. It is proposed that the ground level at the selected site will be raised by about 200 mm to minimise potential for flooding; • Construction of a new, larger concrete pad (with apron) at the selected location within CBH’s Narngulu site; • Construction of a high-density polyethylene (HDPE) lined wastewater collection area outside the DG compound to allow for retention of any contaminated water in the event of significant incident (e.g. fire impacting on DG storages); • Construction of a larger Vehicle Parking Shelter that provides parking for 2 Grain Protection (GP) trucks; • Relocation of the moveable infrastructure (including the gas cylinder store (and associated deluge water sprinkler system), aluminium phosphide (AIP) freight container and AIP waste smartlocker, water tank and booster pump, safety shower / eyewash station, deluge water sprinkler controls, bollards, fire extinguishers and fire hose reel, lighting, emergency information containers (EICs), first aid kit, windsock, DG placarding and signage); and • Installation of new security fencing and gates. <p>It must be noted that the relocated DG compound will be of a similar design and construction to the existing DG compound at West End (the main difference being a larger concrete pad and parking shelter to accommodate 2 GP trucks) and will store and handle the same DGs in quantities above those that require a licence under the WA Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007 (DG Regs). Consequently, CBH will need to apply for a new DG Licence for the CBH Narngulu site and then later cancel the existing DG licence for the West End site.</p> <p>This site-wide DGRA addresses proposed storage and handling of all DGs on site above ‘placarding’ quantities under Schedule 1 of the DG Regs and, hence, Attachment 3 of the DGRA report only provides the safety data sheets (SDS) for those DGs to be stored and handled at the proposed Narngulu DG compound site above ‘placarding’ quantities.</p>
DGRA date:	08 May 2026
DGRA location:	N/A – Desktop (no workshop)
Persons involved in this risk assessment	<p>Prepared: Paul Hathway - DG Specialist</p> <p>WILL REVIEW PRIOR TO SUBMISSION TO LGIRS:</p> <p>Graham Vaughan (Grain Protection (GP) Supervisor – Geraldton)</p> <p>Kirsty Fleay (Manager – GP and Quality - Geraldton)</p> <p>Colette Newton (Terminal Manager – Geraldton)</p> <p>Jade Smith (H&S Advisor – Geraldton Zone)</p>

Supporting documentation (attached to main report)

- Site plan and manifest (r. 78) – **Addendum A** and **Attachment 1**
- Safety Data Sheets (SDS) (r. 79) – **Attachment 3**
- Documents showing compliance with approved code of practice and Storage and Handling Regulations - **Addendum B** to **Addendum F**.

Table 2 Hazard Identification

2.1 - Details of dangerous goods storage and handling (above placarding quantities)

UN No.	Class or Division	Sub-risk	Packing Group	Shipping Name	Common Name(s)	Quantity (kL / t)	Placarding Quantity (kL / t)	Depot Type	Depot Number
2199	2.3	2.1	N/A	PHOSPHINE	VaporPhos	1.6 kL	0.05 kL	PDB	PS1
3162	2.3	-	N/A	LIQUEFIED GAS, TOXIC, N.O.S.(Phosphine)	EcoFume	0.8 kL	0.05 kL		
1066	2.2	-	N/A	NITROGEN, COMPRESSED	Nitrogen	1.8 kL ⁽¹⁾	1 kL		
1397	4.3	6.1	I	ALUMINIUM PHOSPHIDE	Aluminium phosphide (AIP) blankets (new and spent)	2 t	0.05 t	PDB	PS2 & PS3

Notes:

1. This maximum volume equates to 3 full stillages or 36 'G' size cylinders of Nitrogen (i.e. 36 x 50 L).

2.2 - Product details – Refer to SDS (Attachment 3)

Product name	Manufacturer	Main Active constituents (%w/v)	Physical state and appearance	Hazardous properties from SDS
VaporPhos	Cytec (Australia) / Solvay	Phosphine (>99%).	Very flammable, colourless compressed gas with a garlic odour; soluble in water. Pyrophoric with an LEL of 1.8% (volume).	<p>Product is stable under normal conditions of storage. Incompatible with air / moisture, oxidising agents, dimethyl sulfoxide and some metals (<i>refer below</i>). Cylinder contains gas under pressure, may explode if heated. Product decomposes to produce toxic and highly flammable gases and oxides of phosphorous (including phosphorous pentoxide – dense white fumes). In presence of water, forms acidic solutions (phosphoric acid). Store in a dry, cool (<60°C), well-ventilated area out of direct sunlight and away from heat sources, sparks, open flames and other ignition sources; water / moisture and oxidising agents. Avoid metals such as brass, copper and other copper alloys and precious metals, which are susceptible to corrosion by phosphine and its decomposition products. Store cylinders in an upright position and protect from falling. Use only outdoors in a well-ventilated area and avoid inhalation of dust / fume / gas / vapours. Keep away from food and drink. When using do not eat, drink or smoke. Wash hands after use. Provide safety shower and eyewash station close to the storage and handling area. Wear appropriate PPE as per Section 8.2 of the SDS. In the event of a fire, keep the cylinders and surroundings cool with water spray.</p> <p>Limited toxicological data provided in Section 11 of the SDS. Product is corrosive and may cause severe skin burns, irreversible skin damage and dermatitis. Contact with eyes can cause irritation, redness, lachrymation, conjunctivitis, and severe / serious, irreversible eye damage. Inhalation may result in dizziness, cough, irritation / corrosion of the respiratory tract, difficulty breathing / chest pain, pulmonary oedema, unconsciousness and even death. PH₃ is not classified as a specific organ toxicant with repeated exposure according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) criteria. Based on GHS criteria, VaporPhos is not classified as a mutagen, carcinogen or reproductive toxin (fertility and/or development).</p> <p>Avoid discharge into environment. Very toxic to aquatic life. No other ecological data / information provided in the product SDS.</p>

Product name	Manufacturer	Main Active constituents (%w/v)	Physical state and appearance	Hazardous properties from SDS
EcoFume	Cytec (Australia) / Solvay	Phosphine (2%), carbon dioxide (98%).	Non-flammable, colourless compressed gas with a garlic odour; slightly soluble in water.	<p>Product is stable under normal conditions of storage and use. Incompatible with copper, brass, copper alloys and noble metals (Note – however, this is inconsistent with Section 9.2 of the SDS, which states that it is not corrosive to metals). Hazardous decomposition products include carbon monoxide (CO), carbon dioxide (CO₂) and oxides of phosphorous. Cylinder contains gas under pressure, may explode if heated. Store in a dry, cool (<60°C), well-ventilated area out of direct sunlight and away from heat sources. Store cylinders in an upright position and protect from falling. Use only outdoors in a well-ventilated area and avoid inhalation of dust / fume / gas / vapours. Keep away from food and drink. When using do not eat, drink or smoke. Wash hands after use. Provide safety shower and eyewash station close to the storage and handling area. Wear appropriate PPE as per Section 8.2 of the SDS.</p> <p>Product is a simple asphyxiant due to presence of CO₂ (98%). Not classified as hazardous for acute oral or dermal toxicity according to GHS criteria. May cause skin irritation and serious eye irritation. Product does not cause skin or respiratory sensitisation and is not considered to be genotoxic, mutagenic or carcinogenic, affect fertility or be toxic for development. Not classified as a specific organ toxicant through single or prolonged / repeated exposure according to the GHS criteria. During liquefied gas release, skin in contact with dispensing equipment may cause frost bite.</p> <p>Avoid discharge into the environment. Harmful to aquatic life. Global warming potential due to presence of CO₂ (98%). No other ecological data / information provided in the product SDS.</p>
Nitrogen	BOC Australia or Coregas	Nitrogen (>99.99%)	Colourless, odourless, non-flammable gas.	<p>Stable and unreactive under recommended conditions of storage. Avoid heat, sparks, open flames and other ignition sources. Compatible with most commonly used materials. Cylinders may explode if heated. Polymerisation will not occur. Will not decompose to form hazardous products other than those already present. Protect from sunlight and store below 65°C in a dry, well-ventilated secure area constructed of non-combustible material with firm level floor (preferably concrete), away from areas of heavy traffic and emergency exits. Cylinders to be stored upright and restrained to prevent cylinders from falling. Avoid inhalation and use in well-ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended to maintain vapour levels below the recommended exposure standard</p> <p>Not classified as a skin or eye irritant or as causing skin or respiratory sensitisation. Not classified as a mutagen, carcinogen or reproductive toxin. Asphyxiant - effects are proportional to oxygen displacement. Over exposure may result in dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness. Uncontrolled release of gas under pressure may cause physical harm.</p> <p>Prevent from entering sewers, basements and workpits or any place where its accumulation can be dangerous (e.g. drains). No ecological damage caused by this product.</p>
Aluminium phosphide (AIP)	Fintran Australia Pty Ltd	Section 3 of the SDS is not very clear regarding composition / ingredients and states that exact ratio of components may vary slightly. Based on similar products, the composition is expected to be AIP (56%) and non-hazardous (confidential) ingredients (44%).	Blanket containing a white solid (powder), which reacts with water to produce phosphine gas (toxic and flammable) with a garlic or carbide-like odour. Limited information provided in Section 9 of the SDS.	<p>Product reacts with water to liberate toxic, flammable gas (phosphine). Incompatible with water, acids, oxidising agents and zinc, tin, aluminium, copper and their alloys. Store in tightly closed container in a dry, cool (preferably below 30°C), well-ventilated area out of direct sunlight. Keep isolated from combustible materials. Polymerisation not expected to occur. Product decomposes in a fire to produce CO₂ and, if incomplete, CO and smoke. May also produce water and oxides of phosphorous (e.g. phosphorous pentoxide) and other phosphorous compounds. Protect from moisture and contact with water (violent reaction and possible flash fire). Use only outdoors or in a well-ventilated area and avoid inhalation of dust and skin or eye contact. Do not eat, drink or smoke when using product and wash contacted areas thoroughly after handling. When handling, use protective gloves, protective clothing, eye or face protection and respiratory protection.</p> <p>Product is corrosive to the skin and may cause moderate to severe burns with ulceration - severity of burns depends on concentration and duration of exposure. AIP is a severe eye irritant that may cause stinging, reddening and watering of the eyes, swelling of eyelids, blurred vision and, potentially, permanent damage (long term exposure or delayed treatment). Product is very toxic if inhaled or ingested. Although limited information on symptoms or health effects are provided under 'Potential Health Effects' in Section 11 of the SDS, symptoms under 'Acute Toxicity' may (for mild to moderate acute toxicity) include nausea, abdominal pain, tightness in the chest, restlessness, agitation and chills. Severe acute toxicity may cause diarrhoea, cyanosis, difficulty breathing, pulmonary oedema, respiratory failure, tachycardia (rapid pulse), hypotension (low blood pressure), dizziness and/or death. Product not expected to be a mutagen, carcinogen, teratogen or reproductive toxin. AIP toxicity may target the heart, lungs, central nervous system (CNS), liver and kidneys.</p> <p>Avoid release to the environment. Very toxic to aquatic life. AIP will break down spontaneously in the presence of water to produce toxic gas (PH₃) and, hence, it is non-persistent and non-mobile in soil and poses no risk to groundwater or surface water. In the event of a major spill, prevent spillage from entering waterways, drains or sewers and try to stop leak and contain spill if safe to do so. Avoid using sawdust or other combustible material. During clean-up, avoid dust generation, friction and sparks (use non-sparking equipment). Place collected material in properly labelled, sealed containers for subsequent recycling or disposal and wash the area (but prevent run-off entering drains).</p>

2.3 – List of previous dangerous goods incidents at this site and control measures adopted in response

N/A – This is a proposed new DG compound at CBH's Narngulu site.

Table 3 Application of an approved code of practice

3.1 Name of approved code of practice and edition (applicable to licensed DGs)

Number	Title	Edition	Applied
Australian Standards			
AS 4332	The storage and handling of gases in cylinders	2004	Yes
AS 4452	The storage and handling of toxic substances	2025	Yes
AS/NZS 5026	The storage and handling of Class 4 dangerous goods	2012	Yes
AIGA 051/20	Asia Industrial Gases Association (AIGA) Code of Practice (CoP) for Phosphine	2020	Yes

3.2 Is the storage or handling system fully covered in the scope of the approved code of practice? YES

If you have answered NO, you need to complete Table 5.

3.3 Are there any unusual hazards with this storage and handling installation? YES

If you have answered YES, you need to complete Table 5

3.4 Have alternative safety measures been applied that is at variance to the approved code of practice? NO

If you have answered YES, you need to complete Table 5

Table 4 Requirements of Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regs 2007

Aspects	Reg.	Required	Hazard / Risk	Inherent risk			Actual	Compliance Y / N	Action	Residual risk		
				L	C	R				L	C	R
Spill or leak containment	r. 51	An operator of a dangerous goods site must ensure that if dangerous goods, except Class 2 dangerous goods, spill or leak from an above ground container or plant at the site, the spill or leak is contained within a drain, sump, tank, compound or other system at the site built to enable the recovery of the spilled or leaked dangerous goods; and spills are cleaned up as soon as practicable after the spill or leak.	AIP spill leading to environmental contamination / personnel exposure (risk ranking based on E)	2	2	L(4)	<ul style="list-style-type: none"> A spill (solid) from unused AIP blankets is not considered credible, as they will be stored in sealed packages (gas-tight aluminium foil pouches inside steel drums) within a locked freight container (Store PS2) and will not be opened within the store (refer to Section 13.10.1 of the 'DG and Chemical Management Plan'). Spills (solid) from used / spent AIP blankets are possible but highly unlikely, as they will be stored in raised, open steel cages within a closed shed / smartlocker (Store PS3). A shovel, broom and dustpan / brush will be provided inside the proposed DG compound for general housekeeping and clean-up of any spilled AIP residue. There appear to be no environmentally sensitive areas within at least 1 km of the proposed Narngulu DG compound. Any run-off of contaminated stormwater / FW (potentially containing AIP from the DG compound) would be directed to a wastewater collection area (an HDPE-lined bund) outside the compound to the east, which will include an isolation point (i.e. PVC pipe with cap). As per Section 13.11 of the CBH 'DG and Chemical Management Plan', the purpose of this area will be to capture any stormwater / FW in the event of an incident so that it can be drained away as needed following a visual inspection to ensure no contamination. CBH will develop a new EP for the proposed Narngulu DG compound, which will comply with relevant industry standards (refer to Table B.3 in Addendum B and SHARE Action ACT-37372). Any spills will be contained, cleaned-up and disposed of in accordance with the new EP, relevant SDS and CBH Spill Response WI. Routine workplace inspections and audits (e.g. weekly DG compound inspections, layered audits, CCVs, IMS audits and safety interactions) should identify any leaks / spills. <p><i>Note</i> - Section 12 of the SDS for AIP blankets indicates that AIP will break down spontaneously in the presence of water to generate PH₃ gas and, hence, poses no risk of contamination to soil, groundwater or surface waters. However, the SDS contradicts this by stating that AIP is very toxic to aquatic organisms.</p>	Y	Refer to SHARE Action ACT-37372.	1	2	L(2)
			PH ₃ leak above LEL generating phosphorous pentoxide / phosphoric acid and associated environmental contamination via run-off	2	2	L(4)	<ul style="list-style-type: none"> As above, any run-off of contaminated stormwater / FW (potentially containing AIP or phosphorous pentoxide / phosphoric acid) from the proposed Narngulu DG compound would be directed to a wastewater collection area (an HDPE-lined bund) outside the compound to the east, which will include an isolation point (i.e. PVC pipe with cap). As per Section 13.11 of the CBH 'DG and Chemical Management Plan', the purpose of this area will be to capture any stormwater / FW in the event of an incident so that it can be drained away as needed following a visual inspection to ensure no contamination. 	Y		1	2	L(2)
Segregation of DGs	r. 52	An operator of a dangerous goods site must take all reasonably practicable measures to ensure that the dangerous goods are isolated so that they cannot – <ul style="list-style-type: none"> (a) interact with goods that are not compatible; or (b) contaminate any other goods. 	Reaction of incompatible DGs causing fire / generation of toxic fumes and potentially resulting in personnel illness, injury or fatality	3	5	MH(15)	<ul style="list-style-type: none"> As part of this DGRA, and associated detailed compliance checks (refer to Addendum C, D and F), all proposed DG storages have been assessed against relevant AS, which included compliance with specified minimum segregation and separation distances. Within the proposed Narngulu DG compound, there will be separate / dedicated stores for new AIP blankets in sealed packages inside a modified freight container (Store PS2), spent AIP blankets in raised, open steel cages inside a closed shed / smartlocker (Store PS3) and Class 2 (predominantly Division 2.3) gas cylinders in a dedicated shed (Store PS1). Based on the SDSs (Section 10), AIP blankets and the Division 2.3 gases to be stored (VaporPhos / EcoFume) are not incompatible / will not react dangerously. However, AIP and VaporPhos should not be transported together (Section 14) and the firefighting requirements are very different and incompatible. Comprehensive work-based DG training (e.g. Fintran and Solvay stewardship training and DG driver / transport training) is provided to GP personnel, where required, to ensure that they are aware of all hazards and precautions related to the DGs to be stored and handled, including incompatibilities. No DG contamination incidents have occurred at CBH DG compounds. 	Y		1	5	ML(5)

Aspects	Reg.	Required	Hazard / Risk	Inherent risk			Actual	Compliance Y / N	Action	Residual risk		
				L	C	R				L	C	R
Stability	r. 53	An operator of a dangerous goods site must take all reasonably practicable measures to ensure that: (a) if the stability of the dangerous goods is dependent on the maintenance of levels of stabilisers, those levels are maintained as specified by the manufacturer of the DG; and	Decomposition / instability of DGs, generating toxic / flammable gases and potentially resulting in personnel illness, injury or fatality	2	5	M(10)	N/A - Based on the manufacturers' SDSs for all DGs to be stored and handled within the proposed Narnngulu DG compound, the addition of stabilisers will not be required.	N/A		-	-	-
		(b) if the DGs are required to be stored or handled at, or below, a particular control temperature specified by the manufacturer, they are stored at or below that temperature.	Release of toxic / flammable gas from cylinders under pressure due to increased temperature, potentially resulting in personnel illness, injury or fatality	3	5	MH(15)	<ul style="list-style-type: none"> There is a general requirement in the SDSs for VaporPhos and EcoFume gas cylinders to be stored in a cool, dry and well-ventilated area away from direct sunlight. Section 7.2 of the SDSs specify a recommended storage temperature below 60°C, however, the supplier (Solvay) has confirmed that this is related to manual handling of hot cylinders (refer to Table 5 below) and not over-pressurisation of cylinders due to high temperatures. Advice from Solvay is that the bursting pressure of a steel G2 cylinder (in which VaporPhos and EcoFume is stored and handled) is approximately 32,000 kPa. This internal cylinder pressure could only be reached in a fire scenario (i.e. at a temperature of over 300°C). There have been no previous incidents at CBH sites related to gas cylinders overheating and releasing toxic gas under pressure. The Gas Cylinder Store (Store PS1) at the proposed Narnngulu D compound will be provided with good natural ventilation and, hence, in the extremely unlikely event of a cylinder failure, any toxic gas released would be rapidly diluted / dispersed. It must also be noted that personnel access to the proposed DG compound and handling of cylinders will be very limited / intermittent and all personnel entering the compound must wear appropriate PPE, including eye protection, protective clothing and a personal PH₃ gas monitor (e.g. PAC-8000 or ToxiPro). 	Y		1	5	ML(5)
			Rupture of AIP packages (drums) due to toxic gas release and pressure build up from high temperatures, potentially resulting in personnel illness, injury or fatality	2	5	M(10)	<ul style="list-style-type: none"> The SDS for AIP blankets recommends storage in a cool, dry and well-ventilated area away from direct sunlight, however Section 10 of the SDS states the storage should preferably be <30°C. The supplier (Fintran) verbally stated that temperature control is not required for their product and that current storage conditions at CBH's DG compounds are suitable, and, for transparency / traceability reasons, Fintran has provided this advice in writing (refer to close-out of SHARE Action ACT-18536). An AIP package comprises blankets (with Tyvek coating) contained inside gas-tight aluminium foil pouches within a closed steel drum and, hence, rupture / failure is considered extremely unlikely / rare. AIP packages are not opened within the store (refer to Section 13.10.1 of the 'DG and Chemical Management Plan'). There have been no previous incidents at CBH sites related to packages of AIP blankets (drums) rupturing and releasing PH₃ gas due to overheating. The AIP Freight Container (Store PS2) in the proposed Narnngulu DG compound will be a modified, rigid steel freight container with adequate ventilation (i.e. vents in opposite (upper and lower) side walls), which would remove any toxic PH₃ gas generated in the extremely unlikely / rare event of package failure (multiple layers of failure) and subsequent reaction of AIP with moisture. There will be limited personnel access to Store PS2, and the proposed Narnngulu DG compound generally, and appropriate PPE, including personal PH₃ gas monitors (e.g. PAC-8000 or ToxiPro), will be worn when accessing the proposed compound / store (refer above). As per Section 13.10.1 of the CBH 'DG and Chemical Management Plan', when opening AIP drums, there must be 2 persons present and the person opening the drum must wear a full-face respirator. 	Y	Refer to SHARE Action ACT-18536.	1	5	ML(5)

Aspects	Reg.	Required	Hazard / Risk	Inherent risk			Actual	Compliance Y / N	Action	Residual risk		
				L	C	R				L	C	R
Protection from impact	r. 54	An operator of a dangerous goods site must take all reasonably practicable measures to ensure that the dangerous goods and any storage or handling system at the site is protected against damage from impact.	Impact to DG storages (e.g. gas cylinders and AIP drums) causing loss of containment (LoC) (spills and toxic / flammable gas releases), potentially resulting in personnel illness, injury or fatality (risk ranking based on S not E)	3	5	MH(15)	<ul style="list-style-type: none"> As per the CBH 'Vehicle and Traffic Management' Procedure (STORE ID 17619110), traffic movements around the Narngulu site are controlled (refer 'Narngulu Traffic Flow Map' in Addendum A). The AIP Freight Container (Store PS2) will be a rigid, steel freight container; the AIP Waste / Storage Area (Store PS3) will be a shed / smartlocker; and the Gas Cylinder Store (Store PS1) will be a shed / structure with a corrugated steel sheeting roof, combination corrugated and steel mesh sheeting for the back and side walls, and steel mesh sheeting front. All DG stores will be protected by bollards and are contained within a DG compound surrounded by security fencing. Vehicle access inside the proposed Narngulu DG compound will be limited / intermittent. Speed limits for the main site and proposed DG compound will be 20 kph and 5 kph, respectively, which will be signposted around the Narngulu site and on the DG compound fence. There will be warning signage provided on the fence of the proposed Narngulu DG compound stating "NO PARKING OR STANDING WITHIN 15 METRES OF COMPOUND". 	Y		1	5	ML(5)
Transferring dangerous goods	r. 55	An operator of a dangerous goods site must ensure that while dangerous goods at the site are being transferred from one storage or handling system to another, all reasonably practicable, measures are taken to - (a) avoid spillage or overflow of the dangerous goods; (b) where relevant, minimise any static electricity; (c) minimise any dust, mist or vapour generation; (d) ensure that any transfer fittings on the storage or handling systems are compatible; and (e) where relevant, avoid ignition sources.	LoC of DGs potentially leading to environmental contamination or personnel exposure to toxic / flammable gases resulting in illness, injury or fatality (risk ranking based on S not E)	3	5	MH(15)	<ul style="list-style-type: none"> Division 2.3 (VaporPhos and EcoFume) gas cylinders within Store PS1 will be for static storage only prior to transport for use in fumigation, i.e. they will not be filled, used or discharged within the store or proposed DG compound. When moved in or out of the store, a forklift or appropriate cylinder trolley will be used. Store PS2 will only be used for static storage of AIP blankets in closed packages (drums) that will not be opened within the store (refer to Section 13.10.1 of the 'DG and Chemical Management Plan'). Also, due to the potential for damage to the foil packaging (and subsequent reaction with moisture to generate toxic / flammable gases), AIP blankets will only be transported in an original steel drum and, as above, a full-face respirator must be worn when opening AIP drums (only outside Store PS2) (refer to Section 13.10.1 of the 'DG and Chemical Management Plan'). There is potential for personnel exposure to AIP and low levels of toxic PH₃ gas during transfer of spent AIP blankets to the Waste Storage Area (Store PS3). However, during this operation, GP personnel will wear appropriate PPE, such as protective clothing, gloves, safety glasses and a personal PH₃ gas monitor (e.g. PAC-8000 or ToxiPro). Where required, job-specific training is provided to GP personnel including, but not limited to: forklift training / licensing, manual handling and SCBA, as well as comprehensive work-based training in the handling of DGs (e.g. Fintran stewardship for AIP and Solvay stewardship for PH₃ gas (VaporPhos / EcoFume), which includes cylinder handling). All drivers delivering DGs to site are appropriately trained and DG licensed, where required. <p>With respect to control of ignition sources (e) refer immediately below.</p>	Y		1	5	ML(5)

Aspects	Reg.	Required	Hazard / Risk	Inherent risk			Actual	Compliance Y / N	Action	Residual risk		
				L	C	R				L	C	R
Ignition sources in hazardous areas	r. 56	An operator of a dangerous goods site must ensure that any ignition source in a hazardous area (HA) within the site is eliminated or, if this is not reasonably practicable, the risk arising from the ignition source is controlled.	Ignition of a PH ₃ gas leak leading to fire / explosion and release of toxic fumes, with potential for personnel injury / fatality	3	5	MH(15)	<ul style="list-style-type: none"> The only flammable gas to be stored within the proposed DG compound (Store PS1) is VaporPhos (PH₃), which has a Division 2.1 SR. AIP may also generate flammable PH₃ gas in contact with water / moisture. PH₃ has a lower explosive limit (LEL) of 17,900 ppm and is pyrophoric and, in the event of a LoC at or above the LEL, would ignite spontaneously on contact with air (without the presence of an ignition source), producing dense white fumes of toxic phosphorous pentoxide. Based on AS/NZS 60079, a Zone 2 HA may exist around a flammable gas cylinder as follows: 0.5 m above and laterally from the cylinder valve; and 1.5 m laterally from the cylinder base. However, there will be no fixed electrics installed within the Gas Cylinder Store (Store PS1) or AIP stores (Store PS2 and PS3) and the only fixed electrics within the proposed Narngulu DG compound will be located at least 8 m away from all DG stores. All stores within the proposed Narngulu DG compound will be provided with adequate natural ventilation, which would dilute / disperse any PH₃ gas released. Due to the fact that the AIP packages to be kept within Store PS2 will comprise blankets (with Tyvek coating) contained inside gas-tight aluminium foil pouches within closed steel drums, and these packages will not be opened within the store (<i>refer to Section 13.10.1 of the 'DG and Chemical Management Plan'</i>), generation of a HA within the store is not considered credible. Also, as above, the AIP Freight Container (Store PS2) will be provided with adequate natural ventilation and there will be no fixed electrics inside the store. The spent AIP blankets within the AIP Waste Storage Area (Store PS3) may generate PH₃ gas during de-activation, however concentrations are expected to be extremely low (i.e. significantly lower than the LEL for PH₃) and the gas will be diluted / dispersed through natural ventilation of the store (i.e. small wall vents and a whirlybird in the roof). Based on modelling undertaken for CBH's KGT DG compound, a HA associated with Store PS3 extending beyond the site boundary, or even existing within the proposed Narngulu DG compound, is not considered possible. Smoking and ignition sources will be prohibited in the proposed Narngulu DG compound and associated Gas Cylinder Store (Store PS1), and there will be appropriate warning signage provided around the compound, including on the front of the gas cylinder cages, stating "DANGER – NO SMOKING, NO IGNITION SOURCES". Any hot work within the proposed Narngulu DG compound will be managed in accordance with the CBH Hot Work SOP. Also, as per Section 13.7.2 of the CBH 'DG and Chemical Management Plan', a detailed JSA must be completed prior to any non-routine works being undertaken within the DG compound and all DGs must be removed from the immediate area. As per Section 13.7 of the 'DG and Chemical Management Plan', generation of a HA within the proposed DG compound is not considered credible and, hence, there will be no restrictions on carrying or using portable electrical equipment (e.g. cameras and mobile phones). HSE inductions and job-specific training, where required, including training in the handling of DGs (e.g. Fintran stewardship for AIP and Solvay stewardship for PH₃ gas cylinders), ensures that GP personnel are aware of site hazards (including HAs and ignition sources). 	Y		1	5	ML(5)

Aspects	Reg.	Required	Hazard / Risk	Inherent risk			Actual	Compliance Y / N	Action	Residual risk		
				L	C	R				L	C	R
Control of hazardous atmosphere	r. 57	<p>(1) An operator must ensure that each person at a dangerous goods site is not exposed to any dangerous goods at a concentration that exceeds the maximum concentration specified in an exposure standard in relation to those goods for the relevant period of exposure.</p> <p>(2) An operator of a DG site must otherwise ensure that all risks associated with the presence of a hazardous atmosphere within the site are eliminated or, if this is not reasonably practicable, the risk arising from the hazardous atmosphere is minimised.</p>	Personnel exposure to hazardous / toxic substances at concentrations above OELs, potentially resulting in illness / injury or fatality	3	5	MH(15)	<ul style="list-style-type: none"> As mentioned above, the DG stores (Stores PS1, PS2 and PS3) within the proposed Narngulu DG compound will be provided with adequate natural ventilation and, apart from spent AIP blankets in Store PS3, DG packages will not be opened within the stores (refer to Section 13.10.1 of the 'DG and Chemical Management Plan'). The exposure standards published by WorkSafe Australia – 'Workplace Exposure Standards for Atmospheric Contaminants' form the basis for occupational exposure limits (OELs) at CBH. Where OELs are exceeded, an incident notification should be completed to ensure adequate controls are in place and, depending on the outcome of the investigation, corrective / preventive actions initiated to minimise exposure potential. To minimise personnel exposure to DGs, appropriate PPE will be provided and worn by all persons at CBH sites which, as a minimum requirement, comprises safety boots, high visibility shirt and long trousers. When entering certain parts of CBH sites or carrying out specific work activities, safety glasses, hard hats, hearing protection and other additional PPE (e.g. personal PH₃ gas monitors, chemical resistant overalls, full-face respirators or SCBA) may also be required. PPE requirements for specific GP activities are detailed in the Protect Grain Procedure and associated WIs and the GP Chemical PPE Guide (STORE-1473931053-299). As a minimum requirement, all GP personnel entering the proposed Narngulu DG compound will be required to wear safety boots, safety glasses, high visibility shirt, long trousers and a personal gas monitor (e.g. PAC-8000 or ToxiPro), which would alert them to any PH₃ gas concentrations above 0.3 ppm (8-hour TWA). When handling PH₃ cylinders, GP personnel are also required to wear leather gloves and, when opening AIP drums, they are required to wear a full-face respirator. SDSs for some hazardous chemicals stored and handled at the Narngulu site are available electronically via ChemAlert. However, copies of the manufacturer's / supplier's SDSs for DGs used by GP personnel are not all available in ChemAlert. Consequently, CBH's GP team has developed an SDS Register of all chemicals approved for use in the 'Protect Grain Procedure' / 'DG and Chemical Management Plan', which is accessible to all GP personnel via STORE links in these documents. Hard copy SDSs for DGs to be stored and handled within the proposed Narngulu DG compound will be provided in the EICs at site entrance and outside the DG compound. Relevant SDS for all DGs to be stored and handled on site in quantities above 'placarding' levels under Schedule 1 of the DG Regs are also provided in Attachment 3 of this report. These SDSs identify main hazards, safe handling procedures / required precautions, occupational exposure standards and PPE requirements. As per the CBH 'Personal Health and Safety Standard', health surveillance is conducted, in accordance with legislative requirements (e.g. <i>Work Health and Safety Act 2020</i> (WHS Act) and associated Work Health and Safety (General) Regulations 2022 (WHS Regs), for employees whose work activities expose them to chemical and physical hazards, including GP personnel who undertake fumigations using DGs. Requirements are detailed in the document 'Grain Protection Health Surveillance and Biological Monitoring Requirements' (Occuhealth, October 2021). HSE hazards of chemicals brought onto site will be assessed as part of the Chemical Selection and Assessment process, which is being reviewed and updated (refer to Section 18.1 of the CBH 'DG and Chemical Management Plan'). Gas testing will be undertaken prior to any confined space entry. <p>Refer also to 'Ignition sources in hazardous areas' above.</p>	Y		1	5	ML(5)

Aspects	Reg.	Required	Hazard / Risk	Inherent risk			Actual	Compliance Y / N	Action	Residual risk		
				L	C	R				L	C	R
Design, build, maintenance and location of storage or handling systems	r. 58	An operator of a dangerous goods site must ensure that storage or handling systems at the site have been designed, built, installed, commissioned, maintained, and isolated by means of distance or barriers so that, so far as is reasonably practicable, they can be operated with minimal risk to people, property and the environment.	LoC of DGs, potentially leading to environmental contamination, fire / explosion and exposure of personnel and the public to toxic substances (PH ₃ and AIP) resulting in illness / injury or fatality	Refer to 'Spill or leak containment' and 'Control of hazardous atmospheres' above			<ul style="list-style-type: none"> All DG stores have been designed and will be constructed according to the relevant AS, including meeting required minimum separation / segregation distances. Spills (solid) from new AIP blankets are not considered credible, as they will be stored in sealed packages (i.e. gas-tight aluminium foil pouches inside steel drums) within a locked freight container (Store PS2) and these packages will not be opened within the store (refer to Section 13.10.1 of the CBH 'DG and Chemical Management Plan'). Spills (solid) from spent AIP blankets are possible but highly unlikely, as they will be stored in raised, open steel cages within a closed shed / smartlocker (Store PS3). However, appropriate spill clean-up equipment (e.g. shovel, broom and dustpan / brush) will be provided within the proposed DG compound and clean-up will be performed in accordance with the new EP to be developed for the proposed Narngulu DG compound (refer to Table B.3 in Addendum B and SHARE Action ACT-37372) and the SDS. PH₃ gas cylinders (VaporPhos & EcoFume) are appropriately designed to relevant international (ISO) standards, including guards / caps to protect the cylinder valve and minimise the potential for damage and subsequent LoC. The cylinders will also be restrained / strapped within solid steel stillages inside locked, well-ventilated cages / enclosures protected by bollards (inside a secured / fenced DG compound). A deluge water sprinkler system (manual and automatic operation) will be installed inside Store PS1. Routine workplace inspections and audits (e.g. weekly DG compound inspections, layered audits, CCVs, IMS audits and safety interactions) should identify any issues such as spills and leaks. <p>Refer to other controls listed above to minimise risk to people, property and the environment (e.g. those under 'Spill or leak containment' and 'Control of hazardous atmospheres').</p>	Y	Refer to SHARE Action ACT-37372.	Refer to 'Spill or leak containment' and 'Control of hazardous atmospheres' above		
Accepting delivery of dangerous goods	r. 59	An operator of a dangerous goods site to whom packaged dangerous goods are delivered in circumstances where the operator could reasonably be expected to know that any label on the container in which the goods are packaged does not comply with the ADG Code must either not accept delivery of the goods or: <ol style="list-style-type: none"> if the operator accepts delivery of the goods – ensure that each container is labelled in accordance with the ADG Code; and ensure that, during the period that the dangerous goods remain in the container <ol style="list-style-type: none"> the container remains so labelled; and the label remains legible. 	Personnel unaware of contents of DG packages, with potential for inadvertent exposure to hazardous / toxic substances resulting in illness / injury (Note – DG packages are not opened in the stores, hence, personnel exposure extremely unlikely)*	2	3	ML(6)	<ul style="list-style-type: none"> DG packages will be delivered to site by Solvay / Cytec Australia (for PH₃ gas cylinders) and Fintran (for AIP drums), or their designated / approved transport contractor, who will also collect the empty cylinders and spent AIP blankets. These suppliers have formal procedures to check the condition of the DG packages, including labelling, prior to dispatch for delivery. Within the proposed Narngulu DG compound, only AIP blankets, PH₃ cylinders (VaporPhos and EcoFume) and Division 2.2 (N₂) gas cylinders will be stored and handled (only by GP personnel). VaporPhos, EcoFume and, N₂ gas cylinders have distinct colour coding / markings and AIP is supplied in distinctive 20.4 kg blue drums. Even if not clearly labelled, GP personnel would be aware of the contents of the packages through training / experience, *hence, the 'Hazard / Risk' listed is not really credible. Where required for their role, GP personnel are made aware (through experience and training) of the requirement that labels should remain on DG packages at all times and that, if any damaged or leaking packages are identified, the contents are transferred to a suitable container that is appropriately labelled and provided with the relevant DG diamond(s). Actions to be taken in the event that DG packages (e.g. gas cylinders and AIP drums) are found to be unlabelled, not clearly labelled or incorrectly labelled are included in Sections 13.10.1, 13.10.3 and 18.2.3 of the CBH 'DG and Chemical Management Plan'. Routine workplace inspections and audits (e.g. weekly DG compound inspections, layered audits, CCVs, IMS audits and safety interactions) should identify any DG packages (e.g. gas cylinders / AIP drums) that are unlabelled / not clearly labelled. Where required for their role, GP personnel are made aware of DG labelling requirements through job-specific training, including Fintran (AIP) and Solvay (VaporPhos / EcoFume) stewardship training and DG driver / transport training. 	Y		1	3	L(3)
Pipework	r. 60	An operator of a dangerous goods site must ensure that any pipework at the site containing dangerous goods is labelled so as to ensure, so far as is practicable, that the dangerous goods are clearly identified to persons working at the site.	N/A – There will be no DG pipework associated with the proposed Narngulu DG compound	-	-	-	N/A – The DG storage areas within the proposed Narngulu DG compound will only be used for static storage of packages (e.g. drums and gas cylinders), i.e. there will be no pipework containing DGs.	N/A		-	-	-

Aspects	Reg.	Required	Hazard / Risk	Inherent risk			Actual	Compliance Y / N	Action	Residual risk		
				L	C	R				L	C	R
Containers for bulk dangerous goods	r. 61	(1) An operator of a dangerous goods site where bulk dangerous goods are stored and handled in a container other than an IBC must ensure that - (a) the container and its associated pipework are provided with stable foundations and supports; (b) any pipework or plant connected to the container is installed so as to prevent excessive stress on the container, pipework or plant; (c) the container and its associated pipework are protected from failure by corrosion; (d) the container is inspected at intervals that are sufficient to ensure the integrity and serviceability of the container; (e) the results of an inspection under paragraph (d) are recorded and retained for as long as the container remains in service and at the site managed and controlled by the operator; and (f) in the event of the operator ceasing to manage and control the site, the recorded results of an inspection are delivered to the person who subsequently becomes operator.	N/A - There will be no bulk DG containers associated with the proposed Narngulu DG compound	-	-	-	N/A – Only DG packages (AIP drums and gas cylinders) will be stored at the proposed Narngulu DG compound.	N/A		-	-	-
Underground storage or handling systems for Class 3 DGs and petroleum products	r.62	An operator of a dangerous goods site must ensure that any underground storage or handling systems for Class 3 dangerous goods or petroleum products at the site are designed, installed, operated and maintained so that they do not leak.	N/A - No Class 3 DGs are stored and handled underground on site	-	-	-	N/A – There will be no underground storage or handling systems for Class 3 DGs at the Narngulu site.	N/A		-	-	-
Clearing of decommissioned storage and handling systems	r.63	An operator of a dangerous goods site must ensure that any storage or handling system used in connection with the dangerous goods is cleared of the dangerous goods in accordance with sub Regs (2) if the system is to be destroyed, dismantled, disposed of or otherwise decommissioned.	Loss of structural integrity of old DG tanks and their pipework / equipment, leading to leaks / spills and subsequent environmental contamination	3	2	ML(6)	N/A – There are no old DG tanks or DG storage or handling systems at the Narngulu site that require decommissioning.	N/A		-	-	-
Lighting	r.64	An operator of a dangerous goods site must ensure that sufficient and suitable lighting is provided to enable - (a) safe access to and from the site; and (b) safe handling and storage of the dangerous goods.	Personnel injury (e.g. trips, falls, etc.) while handling DGs due to unsafe working conditions (i.e. lack of light)	3	2	ML(6)	<ul style="list-style-type: none"> The DG stores (Stores PS1, PS2 and PS3) within the proposed Narngulu DG compound will not be provided with any fixed lighting (inside), as the stores (and compound) will not be normally accessed outside daylight hours. However, the proposed DG compound will be provided with some motion-activated security lighting (and a light in the Vehicle Parking Shelter). There are some floodlights to the north-west of the proposed Narngulu DG compound near the weighbridges, as well as some floodlights around the site office / amenities. Deliveries of DGs to, and movement of DG packages within, the proposed Narngulu DG compound will not take place outside daylight hours. 	Y		1	2	L(2)

Aspects	Reg.	Required	Hazard / Risk	Inherent risk			Actual	Compliance Y / N	Action	Residual risk		
				L	C	R				L	C	R
Entry and Exit	r. 65	An operator of a dangerous goods site must ensure that a safe means of access to and egress from the site is maintained.	Personnel injury or inability to escape in an emergency (e.g. toxic gas release), with potential for illness / injury or fatality	2	5	M(10)	<ul style="list-style-type: none"> As shown in the Draft Site Location Plan (DWG. 2025-307-0572 / 0573) and 'Narngulu Traffic Flow Map' in Addendum A, the Narngulu site has one dedicated site entry and a dedicated site exit. These entrances / exits are kept clear at all times to ensure effective access / egress. As per the CBH 'Vehicle and Traffic Management' Procedure (STORE ID 17619110), traffic movements around the Narngulu site are controlled (refer 'Narngulu Traffic Flow Map' in Addendum A). Although there is no security fencing around the Narngulu site, ring lock fencing is provided. All DG stores within the proposed Narngulu DG compound will be located at ground level (although the ground / concrete slab will be raised slightly to prevent flooding and a concrete apron provided) and there will be clear / easy access to / egress from the stores (once the compound gate is unlocked). Accessways around the DG stores within the compound will be clearly demarcated by yellow painted lines. Clear access within the proposed DG compound will be regularly checked during inspections using the CBH 'DG Compound Weekly Inspection' in ROAM. There will be warning signage provided on the fence of the proposed Narngulu DG compound stating "NO PARKING OR STANDING WITHIN 15 METRES OF COMPOUND". 	Y		1	5	ML(5)
Security at a dangerous goods site	r. 66	An operator of a dangerous goods site must, so far as is practicable, prevent - (a) access to the site by unauthorised persons; and (b) the occurrence at the site of unauthorised activities.	Sabotage / damage to DG stores, potentially leading to LoC and resulting in environmental contamination (AIP), fire / explosion and exposure of personnel or the public to toxic substances (PH ₃ and AIP) resulting in illness / injury or fatality	3	5	MH(15)	<ul style="list-style-type: none"> As per Addendum B above, there is no security fencing around the Narngulu site, only ring lock fence. The proposed Narngulu DG compound will also be secured by high chainmesh security fencing topped with 3 rows of barbed wire. The compound gates will be locked at all times when not in use (with restricted key access) and there will also be motion-activated security lights within the compound. All DG stores within the proposed Narngulu DG compound will also be locked when not in use. Appropriate warning signage against unauthorised entry will be displayed on the security fence around the DG compound (i.e. "RESTRICTED AREA – AUTHORIZED PERSONNEL ONLY"). 	Y		2	5	M(10)
Control of fire hazards	r. 67	An operator of a dangerous goods site must ensure that the area within 3 m of storage or handling system is kept clear of combustible material that presents a fire hazard to any dangerous goods contained in the system.	Fire involving combustible materials, potentially impacting on DG stores, leading to fire / explosion and release of toxic gases and subsequent injuries / fatality	3	5	MH(15)	<ul style="list-style-type: none"> The proposed Narngulu DG compound will be built upon a concrete pad and all stores and other infrastructure (e.g. fences and gates) will be constructed from steel, i.e. all materials of construction for the proposed DG compound will be non-combustible. The proposed Narngulu DG compound will be kept clear of dry vegetation and other combustible materials for at least 15 m at all times. GP personnel will ensure that there is no significant build-up of extraneous matter / combustible materials in or around the Gas Cylinder Store (Store PS1), AIP Freight Container (Store PS2) and AIP Waste Storage Area (Store PS3) within the proposed Narngulu DG compound. The condition of the proposed Narngulu DG compound, including build-up of combustible materials or vegetation / weeds, will be regularly checked as part of the CBH 'DG Compound Weekly Inspection' in ROAM. 	Y		1	5	ML(5)

Aspects	Reg.	Required	Hazard / Risk	Inherent risk			Actual	Compliance Y / N	Action	Residual risk		
				L	C	R				L	C	R
Placarding	r. 68, 69, 70, 71	<p>An operator of a site where DGs are stored or handled in quantities exceeding those specified in the column headed "Placarding Quantity" in Schedule 1 must ensure that a "HAZCHEM" outer warning placard as specified in Schedule 4 Cl. 2 is displayed at</p> <ul style="list-style-type: none"> every entrance to the site; or any alternative place approved in writing by DFES or a DGO, and that the placard complies with requirements of Reg. 71. <p>For package DG stores, appropriate placarding complying with Schedule 4 Cl. 5 to be displayed at the entrance to any building where the DGs are stored; if within a building, at the entrance to each room or other closed or walled section of the building in which the relevant DGs are stored; and adjacent to any external storage area.</p> <p>Operator of a DG site where DGs are stored in bulk to ensure that the relevant sign for the goods is displayed on every container in which the goods are stored in bulk; at the entrance to any building in which the DGS are stored in bulk, whether in a container or not; and on or adjacent to every place outside a building where the DGs are stored in bulk but not in a container. If they are C1 combustible liquids, a placard complying with Schedule 4 Cl. 6 to be displayed.</p> <p>All placards / signs to be clean, in good order and unobstructed; and clearly legible to persons approaching them.</p>	Emergency services personnel unaware of type (e.g. packages vs, bulk) and quantities of DGs stored leading to inappropriate emergency response, potentially resulting in fire / explosion and release of toxic gases with subsequent injuries / fatality	3	5	MH(15)	<p>As per Addendum B, HAZCHEM signs complying with the requirements of Schedule 4 of the WA DG Regs will be provided at the Narngulu site entrance(s) prior to operation of the proposed Narngulu DG compound (<i>refer to SHARE Action ACT-37368</i>).</p> <p>Appropriate DG placarding, complying with the requirements of r. 70 and Schedule 4 (Clause 5) of the DG Regs, will be provided for all DG stores within the proposed Narngulu DG compound (<i>refer to the details provided in Addendum C, D and F</i>).</p> <p>To aid in identification of the gas cylinders to be stored in Store PS1 within the proposed Narngulu DG compound, "VAPORPHOS", "ECOFUME" and "NITROGEN" signs will be displayed on the front and back of the relevant storage areas.</p> <p>"ALUMINIUM PHOSPHIDE" signs will also be displayed on the AIP stores (Store PS2 and PS3).</p>	Y		1	5	ML(5)

Aspects	Reg.	Required	Hazard / Risk	Inherent risk			Actual	Compliance Y / N	Action	Residual risk		
				L	C	R				L	C	R
Fire Protection	r. 73	<p>(1) The operator of a DG site must ensure adequate fire control equipment is provided.</p> <p>(2) Fire control equipment is not adequate unless:</p> <p>(a) it has been designed and constructed to quickly control and extinguish any fire that might occur at the site, taking into account: (i) the types and quantities of DGs; (ii) the conditions under which they are stored and handled; and (iii) any other materials and substances on site; and</p> <p>(b) it is designed and constructed to prevent DGs on site being affected by a fire; and</p> <p>(c) equipment is compatible with and can be used immediately and without modification by DFES; and</p> <p>(d) fire-fighting media is compatible with the DGs that could potentially be on fire.</p> <p>(3) Operator of a DG site must ensure that fire protection equipment is in proper working order, i.e.</p> <p>(4) The fire protection system is -</p> <p>(a) properly installed, tested and maintained;</p> <p>(b) always in working order;</p> <p>(c) always available for immediate use;</p> <p>(d) not obstructed or otherwise positioned in a manner that hinders access to, or use of, the system; and</p> <p>(5) The operator must, if any of the components of the fire protection system are rendered inoperative, ensure that:</p> <p>(a) the implications of any of the components of the system being unserviceable or inoperative are assessed;</p> <p>(b) alternative measures are taken to control, to the same level of effectiveness, those risks that were controlled by the system when functioning fully; and</p> <p>(c) the fire protection system is replaced or returned to full operation as soon as practicable.</p> <p>(6) If the implications of the system becoming unserviceable or inoperative, as assessed by the operator under sub-regulation (5)(a), include a significant reduction in the effectiveness of the fire protection system, the operator must notify DFES of the condition of the fire protection system as soon as practicable after the system becomes unserviceable or inoperative.</p> <p>(7) In determining the alternative measures required under sub-regulation (5)(b) the operator must have regard to the need for -</p> <p>(a) the provision of alternative fire protection measures;</p> <p>(b) a reduction of the quantities of DGs;</p> <p>(c) stopping or limiting the storage and handling of DGs; and</p> <p>(d) modifications to systems of work.</p>	<p>Inadequate firefighting equipment available to control fires on site potentially leading to injuries / fatalities</p> <p>Use of incompatible firefighting media in an emergency, potentially leading to release of toxic gases and subsequent injuries / fatality</p>	2	5	M(10)	<ul style="list-style-type: none"> Adequate firefighting equipment (e.g. FEs, FHR and a deluge water sprinkler system within Store PS1) will be provided for the proposed Narngulu DG compound and associated stores, as per the requirements of the relevant AS (AS 4332) and the Phosphine CoP (AIGA 051/20) There are no FHs (or FW system) at the CBH Narngulu site that are required to be compatible with DFES equipment. Firefighting equipment within the proposed DG compound will be appropriately located, clearly identified by signage and easily accessible. However, due to the proposed location of the FHR within the DG compound, it is highly unlikely that it could be safely accessed in the event of a fire with the potential to impinge on the DG compound, e.g. when water was required for cooling gas cylinders within Store PS1. Consequently, as above, a deluge water sprinkler system will be installed within Store PS1 to provide an additional level of fire protection. The location of the firefighting equipment within a fenced DG compound, as well as the installation of bollards inside the compound, will adequately protect it from potential impact damage. The dry chemical powder FEs and FHR inside the proposed Narngulu DG compound will be provided with plastic covers for weather protection. The valves and controls for the water sprinkler system will be located in a cabinet within the Vehicle Parking Shelter, which will provide weather protection Water for the deluge sprinkler system in Store PS1, as well as the FHR and safety shower / eyewash, at the proposed Narngulu DG compound will be supplied via mains water, with back-up supply from a 5,000 L water tank (with small electric pump). This setup will ensure sufficient water supply / pressure to the deluge sprinkler system, FHR and safety shower / eyewash. Based on the SDSs (refer to Attachment 3), compatible firefighting media will be provided for all DG stores. However, although dry chemical powder is a compatible media for fighting fires involving AIP, water should not be used, and appropriate warning signage ("IN CASE OF FIRE, DO NOT USE WATER") will be provided on Store PS2 and Store PS3. Firefighting equipment (e.g. FEs and FHR) at the proposed Narngulu DG compound has been designed, and will be installed and operated, as per the relevant AS (e.g. AS 2444 and AS 2441). The firefighting equipment will be inspected and serviced / maintained on a six-monthly basis (as per AS 1851) by a specialist contractor (Mitchell & Brown Fire Services). Inspection and maintenance requirements for the deluge water sprinkler system are included in Section 13.8.1 of the CBH 'DG and Chemical Management Plan'. The condition of firefighting equipment within the proposed Narngulu DG compound, as well as operability of the FHR and safety shower / eyewash, will be checked on a weekly basis as part of the CBH 'DG Compound Weekly Inspection' in ROAM. The deluge water sprinkler system must also be tested on at least a monthly basis. In the event that any firefighting equipment is found to be damaged / faulty, unserviceable or inoperable, the procedure is to put an "Out of Service" tag on the equipment and report it via the CBH SHARE System. CBH Maintenance or GP personnel will then contact Mitchell & Brown Fire Services to repair or replace the equipment. Other unserviceable or inoperable firefighting equipment identified during inspections and testing by Mitchell & Brown Fire Services would also be reported and fixed or replaced by them. 	Y		1	5	ML(5)

Aspects	Reg.	Required	Hazard / Risk	Inherent risk			Actual	Compliance Y / N	Action	Residual risk		
				L	C	R				L	C	R
Emergency management and planning	r. 75	<p>The operator of a site where dangerous goods are stored or handled in quantities exceeding manifest quantities must ensure there is an emergency plan (EP) for the site.</p> <p>The operator of the site must review the EP for the site and, if necessary, revise it whenever there is a significant change in the risk in relation to DGs on the site to people, property or the environment; and whenever there is a significant change to the layout of or to any structure on the site; and as soon as practicable after a dangerous situation occurs on the site; and in any event, at intervals of not more than 3 years from the day on which the plan was first prepared or last reviewed.</p> <p>The operator of the site must have a copy of the current EP for the site on the site.</p> <p><i>Refer to AS 3745 and DEMIRS CoP.</i></p>	Inability for CBH or emergency services to effectively respond to an emergency, with potential for escalation (e.g. fire / explosion and release of toxic gases) resulting in personnel / public injuries or fatality	3	5	MH(15)	<ul style="list-style-type: none"> As per Addendum B, CBH will develop a new EP for the proposed Narngulu site, which will include response actions in the event of fires, toxic gas releases and spills, as well as evacuation requirements, and will comply with relevant industry standards (<i>refer to Table B.3 in Addendum B and SHARE Action ACT-37372</i>). The new Narngulu EP will list where hard copies of the plan are to be made available and the EP will also be accessible to CBH personnel electronically via SharePoint. The new EP will be reviewed and, if required, updated whenever a significant change occurs on site or at least annually. Based on the proposed DG Licence details (<i>refer to Section 3 of the main report</i>), the maximum quantity of Division 2.3 gases (i.e. VaporPhos and EcoFume) and Division 4.3 solids (i.e. AIP) that could be stored within the Narngulu DG compound is lower than 10 times the manifest quantities specified under Schedule 1 of the DG Regs for VaporPhos and AIP (i.e. 0.5 kL and 0.5 t, respectively) and, hence, a FES-ERG will not be required for the site. However, DFES requested that CBH prepare Operational Pre-Plans (OPPs) for all sites with DG compounds (<i>refer to close-out of CBH SHARE Action ACT-25608</i>) and, hence, an OPP will have to be prepared for the proposed Narngulu DG compound. As stated in Section 12.2 of the Protect Grain Procedure, there is a requirement for CBH DG sites to conduct an annual drill related to transport, storage and fumigation processes and one of these should include a site evacuation and involve the local DFES. Annual ER exercises and training will be included in the new EP to be developed for the proposed Narngulu DG compound (<i>refer to Table B.3 in Addendum B and SHARE Action ACT-37372</i>). Section 12.2 of the Protect Grain Procedure requires that, in an emergency, GP personnel must wear SCBA (and protective clothing) when approaching a fire involving toxic substances / gases and/or when there is an uncontrolled PH₃ gas release with concentrations greater than 15 ppm. GP fumigation personnel are trained in the use of SCBA and must also wear SCBA equipment once per month to remain familiar with the equipment. However, in the unlikely event of a significant incident involving AIP or PH₃ cylinders inside the proposed Narngulu DG compound, it is expected that, the area would be evacuated and emergency services (e.g. local DFES) contacted to manage the emergency. Based on the results of toxic gas dispersion modelling conducted for the KGT site, and due to the remote location of the Narngulu site, it is considered that there is no potential for a DG incident at the proposed Narngulu DG compound to impact on neighbouring properties. 	Y	<i>Refer to SHARE Actions ACT-37372 and ACT-25608.</i>	1	5	ML(5)
	r. 76B	If DGS are stored or handled at a DG site in quantities that are 10 times greater than the manifest quantities, the operator of the site must prepare an emergency response guide (ERG) (in a DFES approved template). The FES-ERG must be available on site and a copy provided to DFES. The FES-ERG must be reviewed and, if required, updated when there is a significant change in the type and quantity of DGs or site layout, after a fire or dangerous situation occurs on the site and, as a minimum, at least every 3 years.										
Measures to contain DG incidents	r. 76	An operator of a DG site must take all reasonably practicable measures to ensure that any DG incident is contained on-s										
SDS for DGs	r. 79	An operator of a dangerous goods site must obtain the current SDS for DGs stored or handled on the site, on or before the first occasion that they are supplied to the site; and ensure that the current SDS is readily accessible to persons engaged by the operator to work at the site and to officers of DFES. This does not apply to DGs in transit, DGs in containers not required to be labelled under the ADG Code; or DGs supplied to a retailer or retail warehouse operator in unopened consumer containers holding less than 30 kg or L of the DGs.	Personnel unaware of the hazardous properties, precautions and PPE requirements related to DGs stored and handled, resulting in exposure to toxic gases and subsequent illness, injury or fatality	3	5	MH(15)	<ul style="list-style-type: none"> SDSs for hazardous chemicals to be stored and handled at the Narngulu site are available electronically via ChemAlert or, for some manufacturer's / supplier's SDSs, through the SDS Register developed by CBH's GP team (which is accessible to all GP personnel via STORE365). Hard copy SDSs for DGs to be stored and handled within the proposed Narngulu DG compound will be provided in EICs at the Narngulu site entrance and outside the DG compound. Relevant SDS for all DGs to be stored and handled at the proposed Narngulu DG compound in quantities above 'placarding' levels under Schedule 1 of the DG Regs are also provided in Attachment 3 of this report. These SDSs identify main hazards, safe handling procedures / required precautions, occupational exposure standards and PPE requirements. As below, comprehensive work-based training in the handling of DGs (e.g. Fintran (AIP) and Solvay (PH₃ gas) stewardship training and DG driver / transport training) is provided, where required, to GP personnel to ensure that they are aware of all hazards and precautions related to the DGs stored and handled. 	Y		1	5	ML(5)

Aspects	Reg.	Required	Hazard / Risk	Inherent risk			Actual	Compliance Y / N	Action	Residual risk		
				L	C	R				L	C	R
Manifest	r. 78	An operator of a dangerous goods site where DGs are stored or handled in quantities that exceed the manifest quantities, must maintain: (a) a manifest (containing the information specified in Schedule 3 Division 2) of the DGs stored and handled at the site; and (b) a DG site plan in accordance with Schedule 3 Division 3. DG Manifest to accurately describe quantities of dangerous goods stored on site, including UN Number, Proper Shipping Name, DG Class, Sub-risk and Packaging Group.	Emergency services personnel unaware of location, type and quantities of DGs stored leading to inappropriate ER, potentially resulting in fire / explosion and release of toxic gases with subsequent illness injuries / fatality	3	5	MH(15)	<ul style="list-style-type: none"> As mentioned in Addendum B, a Draft Site DG Manifest has been developed for the proposed Narngulu DG compound. This DG Manifest includes a Site Plan and has been developed in accordance with LGIRS requirements (i.e. the requirements of r. 78 and Schedule 3 of the DG Regs). This Site DG Manifest accurately describes quantities of DGs to be stored and handled on site above 'placarding' quantities under Schedule 1 of the DG Regs. The Site DG Manifest is provided in Attachment 1 of this report and a hard copy will be provided in EICs at the Narngulu site entrance and outside the proposed DG compound. 	Y		1	5	ML(5)
Information for occupier of site adjacent to DG site	r. 76A	If the risk in relation to dangerous goods on the site to people, property or the environment were a dangerous situation to occur on the site would extend to a place adjacent to the site, the operator of the site must ensure the occupier of the place is given at least the following: <ul style="list-style-type: none"> information about the risk and what might happen if a dangerous situation occurs on the site; information about what to do if a dangerous situation occurs on the site; information about what the operator will do if a dangerous situation occurs on the site; information to enable the occupier to contact the operator of the site. 	Emergency event (e.g. a toxic gas release) that could potentially impact on the public / neighbouring properties, resulting in illness / injury or fatality	2	5	M(10)	<ul style="list-style-type: none"> The new EP to be developed for the proposed Narngulu DG compound (<i>refer to Table B.3 in Addendum B and SHARE Action ACT-37372</i>) will include the requirement to notify neighbours in the event of certain emergency scenarios (e.g. where evacuation is required due to fire / toxic gas release) and will provide contact details for neighbours. As mentioned above, based on the results of toxic gas dispersion modelling conducted for the KGT site, and due to the remote location of the Narngulu site, it is considered that there is no potential for a DG incident at the proposed Narngulu DG compound to impact on neighbouring properties. However, regardless, any required information to be provided to neighbours will be included in the EP so that they are made aware of potential emergency scenarios and what actions to take. 	Y	Refer to SHARE Action ACT-37372.	1	5	ML(5)
Training	r. 81	(1) An operator of a dangerous goods site must ensure that a person involved with the storage and handling of dangerous goods at the site is provided with induction, information, training and supervision that complies with sub Regs (2) and (3).	Personnel not adequately trained, potentially leading to DG incidents resulting in personnel injury / fatalities	3	5	MH(15)	<ul style="list-style-type: none"> All CBH site personnel are provided with training in accordance with the 'Training, Awareness and Competency' Group Procedure (STORE-1473931053-395), some of which includes an OA. Training of CBH personnel is managed electronically / online through the 'Success Factors: Learning Management System', which includes a detailed online HSE Induction and identifies requirements for refresher training. Site-specific inductions, including site hazards, PPE and ER requirements, are also provided to personnel, contractors and visitors to CBH sites. A special induction will also be given to persons required to enter the proposed Narngulu DG compound for the first time. This induction will be completed electronically in ROAM and records kept in SHARE. Where required, job-specific training is provided to GP personnel including, but not limited to: forklift training / licensing, manual handling, PTW and isolation, fumigation in the workplace, SCBA, use of portable FEs and FHRs (i.e. responding to minor emergencies training), and comprehensive work-based training in the handling of DGs (e.g. Fintran stewardship for AIP and Solvay stewardship for PH₃ gas (which includes cylinder handling), and DG driver / transport training). As stated in Section 12.2 of the Protect Grain Procedure, there is a requirement for CBH DG sites to conduct an annual drill related to transport, storage and fumigation processes and one of these should include a site evacuation and involve the local DFES. Annual ER exercises and training will also be included in the new EP to be developed for the proposed Narngulu DG compound (<i>refer to SHARE Action ACT-37372</i>). Daily toolbox / pre-start meetings are held at the Narngulu site and include HSE topics. All drivers delivering DGs to site will be appropriately trained and DG licensed, where required. Many CBH personnel, including GP personnel working at the Narngulu site, have been provided with appropriate Advanced First Aid training. All licensed GP personnel must have first aid training, including use of a BVM. 	Y	Refer to SHARE Action ACT-37372.	1	5	ML(5)

Table 5 Unusual Hazards

Identify and unusual hazards unique to the particular dangerous goods installation and not covered by an approved code of practice, and assess the levels of risk.

Ref no.	Hazard [List the activity, procedure, plant, process or situation that could give rise to a dangerous goods incident]	Impact of hazardous event happening [How big is the risk]			Safeguards	Have the risk control measures been implemented? [If "No", document this in Table 6]	Residual risk after implementation of the risk control measures			Is the residual risk reduced to so far as reasonably practicable (SFARP)?	Actions
		L	C	R			L	C	R		
1	Handling of hot gas cylinders (due to high ambient temperatures) resulting in personnel injury (i.e. burns)	3	2	ML(6)	<ul style="list-style-type: none"> When handling gas cylinders, GP personnel wear appropriate PPE, including protective clothing and leather gloves. Job-specific training is provided to GP personnel including manual handling, as well as comprehensive work-based training in the handling of DGs (e.g. Solvay stewardship for PH₃ gas, including cylinder handling). The Gas Cylinder Store (Store PS1) will be shaded (i.e. corrugated steel roof and combination corrugated and steel mesh sheeting for the back and side walls) and provided with good natural ventilation. Personal risk assessment (e.g. Take 5) before performing tasks. 	YES	2	2	L(4)	YES	
2	Liquefied gas releases during cylinder handling, through damage to cylinder valves, resulting in personnel injury (e.g. cold burns from N ₂ or heat burns due to spontaneous ignition of VaporPhos)	3	3	M(9)	<ul style="list-style-type: none"> When handling gas cylinders, GP personnel wear appropriate PPE, including protective clothing, leather gloves and safety glasses. Job-specific training is provided to GP personnel including comprehensive work-based training in the handling of DGs (e.g. Solvay stewardship for PH₃ gas, including cylinder handling). PH₃ gas cylinders are appropriately designed to relevant international (ISO) standards, including guards / caps to protect the cylinder valve and minimise the potential for damage and subsequent LoC. As discussed in Addendum F, there is a requirement to visually inspect cylinder valves for damage and contamination prior to use (following removal of dust caps) and any faulty cylinders will be tagged out of service. Personal risk assessment (e.g. Take 5) before performing tasks. 	YES	1	3	L(3)	YES	
3	Additional unusual HSE risks specific to DG transport and fumigation activities are addressed in a separate Fumigation HLRA.	-	-	-	N/A – Refer to CBH Fumigation HLRA (STORE 1383563609-244580).	N/A	-	-	-	N/A	

Notes:

For the risk ranking section of the above tables, the following abbreviations are used:

- C - Consequence
- L – Low (under 'R' column)
- MH – Medium High (under 'R' column)
- ML – Medium Low (under 'R' column)
- L – Likelihood
- M – Medium (under 'R' column)
- R- Risk

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Table 6 Outstanding risk control actions

Summary of risk control actions still to be implemented (if any) – where risk has not yet been minimised:

Action number	Action item	Comments and action plan with implementation dates and persons responsible for action
-	-	-
<i>Refer to SHARE Actions ACT-18536, ACT-37372 and ACT-25608.</i>		

Risk assessment summary

The risks from these **proposed** dangerous goods storage and handling systems **have** been minimised to so far as is reasonably practicable (SFARP) to people, property and environment, however they can potentially be reduced further by completion of the SHARE Actions referenced in this DGRA report.

Name of assessor: Paul Hathway

Date: 08 May 2026

Signature: 

Date of next review: May 2031

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Table 7 CBH Risk Matrix

Risk Impact / Consequence Ratings

Impact Area	1- Insignificant	2 - Minor	3 – Moderate	4 - Major	5- Catastrophic
Safety	No medical treatment required	Minor injuries / occupational illnesses requiring First Aid or medical treatment	Serious injury /occupational illnesses causing possible hospitalisation or permanent loss / significant effects	Life threatening injury or multiple serious injuries causing hospitalisation	Death or multiple life-threatening injuries
Environment	Minor effects on local environment	Medium - term effects to localised area	Moderate environmental effects to wide area	Serious short-term effect to wide area	Serious long-term effect to wide area
Reputation	Minor local community / shire attention	Adverse attention from local media	Significant adverse local public or media attention	Significant adverse national public or media attention	Significant loss of grower or customer support
Legal	Minor internal non-compliance	Minor legal issues and non-compliances	Internally detected breaches, reported to regulators	Serious breach of legislation with remediation notice	Suspension of licenses, prosecution and litigation
Financial	Under \$1m	\$1m - \$10m	\$10m-\$50m	\$50m-\$150m	Over \$150m
Continuity	1 hour	1 day	2-5 days	1-4 weeks	>4 weeks

Likelihood Scale	
5 - Almost Certain	This event will occur on an annual basis (at least once a year)
4 – Likely	This event has occurred several times in your career (at least once every 3 years)
3 – Possible	This event might occur or you have heard of it happening before (at least once every 5 years)
2 – Unlikely	Heard of something like this event occurring elsewhere but not commonly (at least once every 10 years)
1 – Rare	Have not heard of this event happening in your career (>every 10 years)

Risk Matrix

	Impact on the business if risk event does occur.									
	1- Insignificant		2 - Minor		3 – Moderate		4 - Major		5- Catastrophic	
5 – Almost Certain	Low	5	Medium	10	Medium High	15	High	20	High	25
4 – Likely	Low	4	Medium	8	Medium	12	Medium High	16	High	20
3 – Possible	Low	3	Medium Low	6	Medium	9	Medium	12	Medium High	15
2 – Unlikely	Low	2	Low	4	Medium Low	6	Medium	8	Medium	10
1 - Rare	Low	1	Low	2	Low	3	Medium Low	4	Medium Low	5

ATTACHMENT 3

SAFETY DATA SHEETS (SDS)

LIST of SDS:

Note: The following table lists all DGs above 'placarding' quantities under Schedule 1 of the DG Regs, i.e. those DGs reviewed in the site-wide DGRA (**Attachment 2**):

NO.	DG Product Description
1	AIP blankets - Phostoxin
2	VaporPhos
3	EcoFume
4	Compressed Nitrogen - Coregas



PROPOSED NARNGULU DG COMPOUND

Dangerous Goods Risk Assessment

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Section 1 - Identification of the Material and Supplier

Fintran Australia Pty Ltd
1/5 Phillip Court
Port Melbourne VIC 3207

Phone: 03 9077 7395 (office hours)
Mobile: 0434 517 692 (all times)

Chemical nature: Fumigation products containing aluminium phosphide
Trade Name: **Phostoxin Fumigation Bags, Chains and Blankets**
APVMA Code: 63588, 63587, 63586
Product Use: Agricultural insecticide for use as described on the product label.
Creation Date: **October, 2016**
This version issued: **June, 2021** and is valid for 5 years from this date.
Poisons Information Centre: Phone 13 1126 from anywhere in Australia

Section 2 - Hazards Identification

Statement of Hazardous Nature

This product is classified as: T, Toxic. C, Corrosive. Hazardous according to the criteria of SWA.
 Dangerous according to Australian Dangerous Goods (ADG) Code, IATA and IMDG/IMSBC criteria.

SUSMP Classification: S7

ADG Classification: Class 4.3: Substance which, in contact with water, emits flammable gas. Sub Risk: Class 6.1: Toxic substances.

UN Number: 1397, ALUMINIUM PHOSPHIDE



GHS Signal word: DANGER

Substances and mixtures which, in contact with water, emit flammable gases Category 1
 Acute Toxicity Oral Category 1 or 2
 Acute Toxicity Dermal Category 3
 Skin Corrosion /Irritation Category 1
 Acute Toxicity Inhalation Category 1/2
 Specific Target Organ toxicity - single exposure Category 1
 Hazardous to aquatic environment Short term/Acute Category 1

HAZARD STATEMENT:

H260: In contact with water releases flammable gases which may ignite spontaneously.
 AUH029: Contact with water liberates toxic gas.
 H300: Fatal if swallowed.
 H311: Toxic in contact with skin.
 H314: Causes severe skin burns and eye damage.
 H330: Fatal if inhaled.
 H370: Causes damage to organs.
 H400: Very toxic to aquatic life.

PREVENTION

P223: Keep away from any possible contact with water, because of violent reaction and possible flash fire.
 P232: Protect from moisture.
 P260: Do not breathe dusts.
 P262: Do not get in eyes, on skin, or on clothing.
 P264: Wash contacted areas thoroughly after handling.
 P270: Do not eat, drink or smoke when using this product.
 P271: Use only outdoors or in a well ventilated area.
 P273: Avoid release to the environment.
 P280: Wear protective gloves, protective clothing and eye or face protection.
 P284: Wear respiratory protection.

RESPONSE

P363: Wash contaminated clothing before reuse.
 P301+P310: IF SWALLOWED: Immediately call a POISON CENTRE or doctor.

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P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303+P361+P353: IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water.
 P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P307+P311: If exposed: Call a POISON CENTRE or doctor.
 P335+ P334: Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.
 P381: Eliminate all ignition sources if safe to do so.
 P391: Collect spillage.
 P370+P378: In case of fire, use carbon dioxide, dry chemical. Dry Agent. Water MUST NOT be allowed to come into contact with the product since a dangerous reaction is likely to take place.

STORAGE

P402: Store in a dry place.
 P405: Store locked up.
 P410: Protect from sunlight.
 P403+P233: Store in a well-ventilated place. Keep container tightly closed.

DISPOSAL

P501: Dispose of contents and containers as specified on the registered label.

Emergency Overview

Physical Description & Colour: White pellets or tablets. May be presented in belts or blankets.

Odour: Produces phosphine gas which has a garlic or carbide-like odour

Major Health Hazards: Aluminium phosphide is not absorbed dermally; the main routes of exposure are through ingestion and inhalation. It is highly toxic via both these routes. The reported rodent oral LD₅₀ is 11.5 mg/kg for the refined version, with that for the technical compound presumably lower. Aluminium phosphide ingested orally reacts with water and stomach acids to produce phosphine gas, which may account in a large part for observed toxicity. Very toxic by inhalation and if swallowed, toxic in contact with skin, causes burns.

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc, g/kg	TWA (mg/m ³)	STEL (mg/m ³)
Aluminium phosphide	20859-73-8	>600	not set	not set
Which reacts to produce:				
Phosphine	7803-51-2	330	0.42	1.4
Other non hazardous ingredients	secret	to 1 kg	not set	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak "is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this SDS with you when you call.

Inhalation: If inhalation occurs, contact a Poisons Information Centre. Urgent hospital treatment is likely to be needed. Remove source of contamination or move victim to fresh air. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice. DO NOT allow victim to move about unnecessarily. Symptoms of pulmonary oedema can be delayed up to 48 hours after exposure.

Skin Contact: Quickly and gently brush away excess particles. Seek immediate medical attention. Remove contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Flush contaminated area with lukewarm, gently flowing water for at least 20-30 minutes, by the clock. DO NOT INTERRUPT FLUSHING. If necessary, keep emergency vehicle waiting (show paramedics this SDS and take their advice). If irritation persists, repeat flushing. Seek medical attention.

Eye Contact: Quickly and gently brush particles from eyes. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 15 minutes or until the product is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical attention immediately. Take special care if exposed person is wearing contact lenses.

SAFETY DATA SHEET

Ingestion: If swallowed, do NOT induce vomiting; rinse mouth thoroughly with water and contact a Poisons Information Centre, or call a doctor at once. Give activated charcoal if instructed.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: The major hazard in fires is usually inhalation of heated and toxic or oxygen deficient (or both), fire gases. There is little risk of an explosion from this product if commercial quantities are involved in a fire. This product will probably cause the fire to intensify as contents ignite.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

Extinguishing Media: Dry Agent. Water MUST NOT be allowed to come into contact with the product since a dangerously reaction is likely to take place. Try to contain spills, minimise spillage entering drains or water courses.

Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade. There is a danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is liquid-tight chemical protective clothing and breathing apparatus.

Hazchem Code: 4WE

Flammability Class: Substances and mixtures which, in contact with water, emit flammable gases
Category 1 (GHS); Class 4.3 (ADG).

Section 6 - Accidental Release Measures

Accidental release: In the event of a major spill, prevent spillage from entering drains or water courses. Evacuate the spill area and deny entry to unnecessary and unprotected personnel. Immediately call the Fire Brigade. Wear full protective chemically resistant clothing including eye/face protection, gauntlets and self contained breathing apparatus. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include rubber and PVC. Eye/face protective equipment should comprise, as a minimum, protective goggles. If there is a significant chance that dusts are likely to build up in cleanup area, we recommend that you use a suitable dust mask. Otherwise, not normally necessary.

Stop leak if safe to do so, and contain spill. Avoid using sawdust or other combustible material. Any electrical equipment should be non-sparking. Any equipment capable of building an electrostatic charge should be electrically grounded. Because of the toxicity of this product, special personal care should be taken in any cleanup operation. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Consider vacuuming if appropriate. Recycle containers wherever possible after careful cleaning. Refer to product label for specific instructions. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this SDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. Wash contaminated clothing after use, notifying the laundry of the nature of the contamination. Do not eat, drink or smoke while product is in use. Eliminate ignition sources from the area where this product is used, as it emits a flammable gas which may be ignited under certain circumstances. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. Store in a cool, well ventilated area. Check containers periodically for leaks. Containers should be kept closed in order to minimise contamination, especially from water. Make sure that the product does not come into contact with water, or substances listed under "Incompatibilities" in Section 10. If you keep more than 500kg or L of Dangerous Goods of Packaging Group I, you may be required to license the premises or notify your Dangerous Goods authority. If you have any doubts, we suggest you contact your Dangerous Goods authority in order to clarify your obligations. Check packaging - there may be further storage instructions on the label.

Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

SWA Exposure Limits

Phosphine

TWA

0.42 mg/m³ (0.3 ppm)

STEL

1.4 mg/m³ (1 ppm)

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No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: This product should only be used where there is local exhaust ventilation.

Eye Protection: Protective glasses or goggles must be worn when this product is being used. Failure to protect your eyes may lead to severe harm to them or to general health. Emergency eye wash facilities must also be available in an area close to where this product is being used.

Skin Protection: Because of the dangerous nature of this product, make sure that all skin areas are completely covered by impermeable gloves, overalls, hair covering, apron and face shield. See below for suitable material types.

Protective Material Types: We suggest that protective clothing be made from the following materials: rubber, PVC.

Respirator: If there is a significant chance that dusts are likely to build up in the area where this product is being used, we recommend that you use a suitable dust mask. Otherwise, not normally necessary.

Safety deluge showers should, if practical, be provided near to where this product is being handled commercially.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	White pellets or tablets. May be presented in belts or blankets.
Odour:	Produces phosphine gas which has a garlic or carbide-like odour
Boiling Point:	Not available.
Freezing/Melting Point:	No specific data. Solid at normal temperatures.
Volatiles:	No data.
Vapour Pressure:	No data.
Vapour Density:	Not applicable.
Specific Gravity:	No data.
Water Solubility:	Not applicable, product decomposes in contact with water.
pH:	No data.
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	Not applicable.
Coeff Oil/water Distribution:	No data
Viscosity:	Not applicable.
Autoignition temp:	No data.
Flash point:	No data
Upper Flammability Limit:	No data.
Lower Flammability Limit:	No data.
Autoignition temperature:	No data.

Section 10 - Stability and Reactivity

Reactivity: This product reacts with water, liberating a toxic, flammable gas. Look at the label for further information.

Conditions to Avoid: This product should be kept in a cool place, preferably below 30°C. Keep containers tightly closed. Containers should be kept dry. Keep isolated from combustible materials. Protect this product from light. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

Incompatibilities: water, acids, oxidising agents, zinc, tin, aluminium and their alloys.

Fire Decomposition: Combustion forms carbon dioxide, and if incomplete, carbon monoxide and possibly smoke. Water is also formed. May form oxides of phosphorus and other phosphorus compounds. Aluminium compounds. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Polymerisation: Polymerisation reactions are unlikely; they are not expected to occur.

Section 11 - Toxicological Information

Toxicity: An information profile for Aluminium Phosphide is available at <http://extoxnet.orst.edu/pips/ghindex.html>

Acute Toxicity: Aluminium phosphide is not absorbed dermally; the main routes of exposure are through ingestion and inhalation. It is highly toxic via both these routes. The reported rodent oral LD₅₀ is 11.5 mg/kg for the refined version, with that for the technical compound presumably lower. Aluminium phosphide ingested orally reacts with water and stomach acids to produce phosphine gas, which may account in a large part for observed toxicity.

Phosphine generated in the gastrointestinal tract is readily absorbed in to the bloodstream, and it is readily absorbed through the lung epithelium. The rodent 4-hour inhalation LC₅₀ for phosphine gas (the product of phosphide reaction with water) is widely reported as 15 mg/m³ (15 µg/L, or approximately 10.7 ppm). Recent study indicates that the rodent 4-hour inhalation LC₅₀ may exceed 15 mg/m³. Symptoms of mild to moderate acute Aluminium phosphide toxicity include nausea, abdominal pain, tightness in chest, excitement, restlessness, agitation and chills. Symptoms

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of more severe toxicity include diarrhoea, cyanosis, difficulty breathing, pulmonary oedema, respiratory failure, tachycardia (rapid pulse) and hypotension (low blood pressure), dizziness and/or death. Convulsions have been reported in lab animals exposed to high concentrations of phosphine. Mild exposure is reversible.

Chronic Toxicity: There is no evidence available that shows cumulative or chronic toxicity symptoms.

Reproductive Effects: The available evidence for reproductive effects in animals suggest that reproductive effects are not likely in humans under normal conditions.

Teratogenic Effects: The available evidence for teratogenic effects in animals suggests that such effects are not likely in humans under normal conditions.

Mutagenic Effects: No evidence was available regarding the ability of Aluminium phosphide or phosphine to cause mutations or increase the mutation rate.

Carcinogenic Effects: No data are currently available; it is possible that some testing on the oncogenicity may be initiated in the near future.

Organ Toxicity: Acute toxicity resulting from Aluminium phosphide exposure is apparent most immediately in the heart and lungs; it may also affect the central nervous system, liver and kidneys.

Fate in Humans & Animals: Aluminium phosphide rapidly reacts with water to form highly toxic phosphine gas. It has been reported that Aluminium phosphide may be absorbed directly into the bloodstream, although this is probably a very minor route of entry. That phosphine which is not expired through the lungs may be metabolized to phosphates, hypophosphite and phosphite.

Classification of Hazardous Ingredients

Ingredient	Risk Phrases
Aluminium Phosphide	Conc>=7%: T+; R28
<ul style="list-style-type: none"> Substance or mixture which in contact with water emits flammable gas – category 1 Acute toxicity (inhalation) - category 1 Acute toxicity (ingestion) - category 2 Acute toxicity (dermal) - category 3 Hazardous to the aquatic environment (acute) – category 1 	
Phosphine	Conc>=10%: T+; R26, R34
<ul style="list-style-type: none"> Flammable gas - category 1 Gas under pressure Acute toxicity - category 2 Skin corrosion - category 1B Hazardous to the aquatic environment (acute) - category 1 	

Potential Health Effects

Inhalation:

Short Term Exposure: Available data shows that this product is very toxic, but symptoms are not available. In addition product may be mildly irritating, although unlikely to cause anything more than mild transient discomfort.

Long Term Exposure: Long term inhalation of high amounts of any nuisance dust may overload lung clearance mechanism. No data for health effects associated with long term inhalation.

Skin Contact:

Short Term Exposure: This product is corrosive to the skin. Capable of causing moderate to severe burns with ulceration. Can penetrate to deeper layers of skin, resulting in third degree burns. Corrosion will continue until product is removed or neutralised. Severity depends on concentration and duration of exposure. Burns may not be immediately painful; the onset of pain may be minutes to hours. Toxic in contact with skin.

Long Term Exposure: No data for health effects associated with long term skin exposure.

Eye Contact:

Short Term Exposure: This product is a severe eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms such as swelling of eyelids and blurred vision may also become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment is likely to cause permanent damage.

Long Term Exposure: No data for health effects associated with long term eye exposure.

Ingestion:

Short Term Exposure: Significant oral exposure is considered to be unlikely. Available data shows that this product is toxic, but further symptoms are not available. However, this product may be irritating to mucous membranes but is unlikely to cause anything more than transient discomfort.

Long Term Exposure: No data for health effects associated with long term ingestion.

Carcinogen Status:

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SWA: No significant ingredient is classified as carcinogenic by SWA.

NTP: No significant ingredient is classified as carcinogenic by NTP.

IARC: No significant ingredient is classified as carcinogenic by IARC.

Section 12 - Ecological Information

This product is very toxic to aquatic organisms.

Effects on Birds: The precise oral or inhalation median lethal doses for Aluminium phosphide or phosphine in birds are not known. It is reported that exposure of turkeys and hens to 211 and 224 mg/m³ for 74 and 59 minutes respectively resulted in laboured breathing, swelling of organs, tonic-clonic convulsions and death.

Effects on Aquatic Species: The reported acute LC₅₀ is 4.1 µg/L in rainbow trout, indicating very high toxicity. No data were available regarding the specific toxicity of Aluminium phosphide or of phosphine to other fish or aquatic species (e.g. LC₅₀ or EC₅₀ values), but due to the mechanism of action it is likely that it will be very highly toxic to them as well.

Effects on Other Animals (Non target species): No data were available.

ENVIRONMENTAL FATE:

Breakdown of Chemical in Soil and Groundwater: Aluminium phosphide will break down spontaneously in the presence of water to form a gaseous product, and so it is non-persistent and non-mobile in the soil environment, and poses no risk to groundwater.

Breakdown of Chemical in Surface Water: It is highly unlikely that Aluminium phosphide or phosphine will be found in surface waters.

Breakdown of Chemical in Vegetation: No data were available.

Section 13 - Disposal Considerations

Disposal: This product may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to separate the contamination in some way. Only if neither of these options is suitable, we suggest that you contact a specialist disposal company to arrange disposal. Once the packaging is opened, generation of phosphine will begin and will continue until the product is spent. Disposal by untrained personnel may cause a dangerous incident.

Disposal instructions for spent product can be found on the product label. Residual aluminium phosphide should be destroyed prior to disposal by swamping the product with dilute acid or soapy water in open air until bubbling ceases. Packaging should be rinsed with soapy water, preferably in a well ventilated area, to destroy residual aluminium phosphide. Deactivated spent product can be disposed of in an approved disposal pit. Packaging may be disposed of similarly, or can be delivered to an appropriate waste management facility.

Section 14 - Transport Information

Dangerous according to Australian Dangerous Goods (ADG) Code, IATA and IMDG/IMSBC criteria.

UN Number: 1397, ALUMINIUM PHOSPHIDE

Hazchem Code: 4WE

Special Provisions: None allocated

Limited quantities: ADG 7 specifies a Limited Quantity value of NONE for this class of product.

Dangerous Goods Class: Class 4.3: Substances which in Contact With Water Emit Flammable Gases.

Sub Risk: Class 6.1, Toxic Substances.

Packing Group: I

Packing Instruction: P403

Class 4.3 Dangerous When Wet Substances shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 2.1 (Flammable Gases), 5.1 (Oxidising Agents), 5.2 (Organic Peroxides), 7 (Radioactive Substances), 8 (Corrosive Substances). They may however be loaded in the same vehicle or packed in the same freight container with Classes, 2.2 (Non-Flammable, Non-Toxic Gases), 2.3 (Toxic Gases), 3 (Flammable Liquids), 4.1 (Flammable Solids), 4.2 (Spontaneously Combustible Substances), 6 (Toxic Substances), 9 (Miscellaneous Dangerous Goods), Foodstuffs and foodstuff empties.

Section 15 - Regulatory Information

AICS: We are unable to verify the presence of all of the ingredients in this product on the public AICS database. However this is not a necessary requirement for registered Ag/Vet products. If you have any reason to be concerned about this, we suggest you call us on the number below.

The following ingredients: Aluminium phosphide, Phosphine, are mentioned in the SUSMP.

Section 16 - Other Information

This SDS contains only safety-related information. For other data see product literature.

SAFETY DATA SHEET

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail (7 th edition)
AICS	Australian Inventory of Chemical Substances
SWA	Safe Work Australia, formerly ASCC and NOHSC
CAS number	Chemical Abstracts Service Registry Number
Hazchem Code	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
R-Phrase	Risk Phrase
SUSMP	Standard for the Uniform Scheduling of Medicines & Poisons
UN Number	United Nations Number

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" (July 2020)

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<http://www.kilford.com.au/> Phone (02)8321 8866

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

- Trade name VAPORPH3OS® PHOSPHINE FUMIGANT

1.2 Relevant identified uses of the substance or mixture and uses advised against**Uses of the Substance/Mixture**

- Fumigant

1.3 Details of the supplier of the safety data sheet**Company**

CYTEC AUSTRALIA HOLDINGS PTY LTD.
Suite 1.06b, Level 1, 21 Solent Cct.,
Baulkham Hills, 2153 Australia
Telephone: +61 2 9846 6200

E-mail address

For questions about SDS content: manager.sds@syensqo.com
For all other topics use: www.syensqo.com/en/form/documentation

1.4 Emergency telephone number

+61 2 8014 4558 [CareChem 24]
MULTI LINGUAL EMERGENCY NUMBER (24/7)
Europe/Latin America/Africa: +44 1235 239 670 (UK)
Middle East/Africa speaking Arabic: +44 1235 239 671 (UK)
Asia Pacific : +65 3158 1074 (Singapore)
China : 400 120 6011 (toll-free, access from China only)
North America : +1 800 424 9300

Poisons information

- "For advice, contact a Poison Information Center (e.g. phone Australia 13 1126) or a doctor (at once)"

Disclaimer

The ® indicates a Registered Trademark in the United States and the ™ indicates a trademark in the United States. The mark may also be registered, subject of an application for registration, or a trademark in other countries.

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Work Health and Safety Regulation 2011**

- | | |
|--|---|
| - Flammable gases , Category 1A | H220: Extremely flammable gas. |
| - Pyrophoric gas | H232: May ignite spontaneously if exposed to air. |
| - Gases under pressure , Liquefied gas | H280: Contains gas under pressure; may explode if heated. |
| - Acute toxicity , Category 1 | H330: Fatal if inhaled. |
| - Skin corrosion , Sub-category 1B | H314: Causes severe skin burns and eye damage. |
| - Serious eye damage , Category 1 | H318: Causes serious eye damage. |

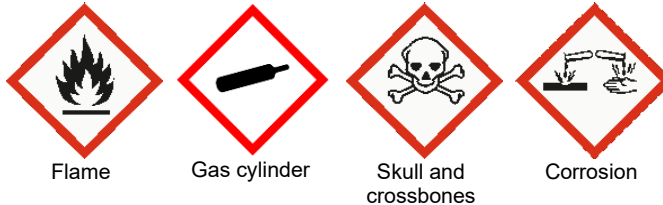
SUSMP (AU)

- Schedule 7: Dangerous Poison
Please use the original publication to check for specific uses, specific conditions or threshold limits that might apply for this chemical.

2.2 Label elements

Work Health and Safety Regulation 2011

- CAS-No. 7803-51-2 phosphine

Pictogram

Flame

Gas cylinder

Skull and crossbones

Corrosion

Signal word

- Danger

Hazard statements

- H220 Extremely flammable gas.
- H232 May ignite spontaneously if exposed to air.
- H280 Contains gas under pressure; may explode if heated.
- H314 Causes severe skin burns and eye damage.
- H330 Fatal if inhaled.

Precautionary statementsPrevention

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P222 Do not allow contact with air.
- P260 Do not breathe gas.
- P264 Wash skin thoroughly after handling.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.
- P284 Wear respiratory protection.

Response

- P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
- P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
- P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
- P363 Wash contaminated clothing before reuse.
- P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
- P381 In case of leakage, eliminate all ignition sources.

Storage

- P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
- P405 Store locked up.
- P410 + P403 Protect from sunlight. Store in a well-ventilated place.

Disposal

- P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards which do not result in classification

- Short-term (acute) aquatic hazard, Category 1 H400: Very toxic to aquatic life.
- No hazards to be specially mentioned.

VAPORPH3OS® PHOSPHINE FUMIGANT

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SECTION 3: Composition/information on ingredients**3.1 Substance**

- Chemical nature Phosphorus trihydride (phosphine)

Information on Components and Impurities

Chemical name	CAS-No.	GHS Classification	Concentration [%]
Phosphine	7803-51-2	Flammable gases, Category 1A ; H220 Gases under pressure, Compressed gas ; H280 Acute toxicity, Category 1 ; H330 Skin corrosion, Sub-category 1B ; H314 Serious eye damage, Category 1 ; H318	> 97
Non-hazardous ingredients *			Balance

* (Ingredients present at non-hazardous concentrations, according to criteria of SWAC (Australia), and the Hazardous Substances (Classification) Regulations 2001 (New Zealand), based on available information).

3.2 Mixture

- Not applicable, this product is a substance.

SECTION 4: First aid measures**4.1 Description of first aid measures****In case of inhalation**

- Quickly move the person away from the contaminated area. Make the affected person rest.
- Immediate medical attention is required.
- Show this sheet to the doctor.
- Be prepared to provide first aid or medical support if necessary.
- If person is not breathing, immediately call for emergency medical support then, begin cardiopulmonary resuscitation. For artificial respiration, use a bag-valve-mask device. If artificial respiration is not possible due to physical or psychological reasons, start only heart massage as soon as possible.
- Rescuers within the areas of potentially unsafe levels of this product "(the ""HOT ZONE"") should employ appropriate personal protective equipment" such as SCBA during the rescue of the victim.

In case of skin contact

- Take off contaminated clothing and shoes immediately.
- Wash off immediately with plenty of water for at least 15 minutes.
- Use appropriate protective equipment when treating a contaminated person.
- Immediate medical attention is required.
- Show this sheet to the doctor.
- Be prepared to provide first aid or medical support if necessary.

In case of eye contact

- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- Keep eye wide open while rinsing.
- Show this sheet to the doctor.
- Always obtain medical advice, even if there are no symptoms.
- Be prepared to provide first aid or medical support if necessary.

In case of ingestion

- Not applicable

4.2 Most important symptoms and effects, both acute and delayed

In case of inhalation

Symptoms

- Fatigue
- discomfort in the chest

Symptoms

- Weakness
- Vomiting
- chest pain
- Diarrhoea
- Difficulty in breathing

Symptoms

- pulmonary oedema
- Dizziness
- Cyanosis
- Unconsciousness

Symptoms

- Symptoms will depend on the target organs.
- Inhalation may provoke the following symptoms:
- Cough
- Breathing difficulties
- Irritation
- Redness
- Swelling of tissue
- May cause respiratory tract irritation.
- Dermatitis
- Causes skin burns.
- Lachrymation
- Conjunctivitis
- Causes eye burns.

Effects

- Serious effects on health can appear after exposure, even death.
- The effects will depend on target organs.
- If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.
- In case of inhalation, irritation/corrosion of the respiratory tract.
- Risk of respiratory disorder
- May cause irreversible skin damage.
- Chronic exposure may cause dermatitis.
- May cause irreversible eye damage.
- Loss of the eye

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician

- If breathed in, move person into fresh air.
- Be aware to maintain life support if necessary.
- Take victim immediately to hospital.
- Immediate medical attention is required.
- Consult with an ophthalmologist immediately in all cases.
- Burns must be treated by a physician.
- Treat symptomatically.
- Contact a poison control center.
- Keep under medical supervision for at least 48 hours.

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing media**

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special hazards arising from the substance or mixture

- Highly flammable
- Dense white fumes are given off which may obscure the area.
- On combustion forms:
 - Toxic and highly flammable gases are released, which increase fire/explosion hazards.
 - In the presence of water, forms acidic solutions.

5.3 Advice for firefighters**Special protective equipment for firefighters**

- Wear full protective clothing and self-contained breathing apparatus.
- Hazchem Code 2PE

Specific fire fighting methods

- Cool containers/tanks with water spray.
- Evacuate personnel to safe areas.
- Remove undamaged containers from fire area if it is safe to do so.

Further information

- Control the use of water due to environmental risk (see section 6).

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

- Do not breathe gas.
- Wear self-contained breathing apparatus and protective suit.
- If spillage occurs on the public highway, indicate the danger and notify the authorities (police, fire brigade).
- Evacuate personnel to safe areas.
- Remove all sources of ignition.
- Only qualified personnel equipped with suitable protective equipment may intervene.
- Avoid contact with the skin and the eyes.
- Do NOT approach from DOWNWIND.
- Stop the leak as quickly as possible (using non-sparking tools).
- Mechanically ventilate the spillage area, whilst avoiding the formation of explosive concentrations.

6.2 Environmental precautions

- Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

- Keep container tightly closed.
- Flammable product. Take all necessary precautions. Earth the containers and the equipment.
- Ventilate the area.

6.4 Reference to other sections

- For personal protection, see section 8.
- For disposal considerations see section 13.

Dangerous Goods - Emergency Response Guidebook (ERG) (AU ERG2018)

Guide : 119

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

- Wear protective gloves/ protective clothing/ eye protection/ face protection.
- Wash hands after handling.
- Do not breathe gas.
- The gas deadens the sense of smell. Do not depend on odor to detect presence of gas.
- Keep cylinder out of sun and away from heat.
- Keep cylinder in an upright position and protect from falling.
- Before dispensing product, purge equipment with an inert gas.
- Cylinders must be handled in accordance with industry standards for compressed gases.
- Metals such as brass, copper and other copper alloys and precious metals are susceptible to corrosion.

Hygiene measures

- Handle in accordance with good industrial hygiene and safety practice.
- Wash hands before breaks and at the end of workday.
- When using do not eat, drink or smoke.
- Eye wash bottles or eye wash stations in compliance with applicable standards.
- Ensure that eyewash stations and safety showers are close to the workstation location.
- Keep away from food and drink.

7.2 Conditions for safe storage, including any incompatibilities**Technical measures/Storage conditions**

- Keep in properly labelled containers.
- Keep away from incompatible materials to be indicated by the manufacturer.
- Keep away from heat and sources of ignition.

Requirements for storage rooms and vessels**Recommended storage temperature:** < 50 °C

- The building should be adequately ventilated and equipped with a continuous monitoring and alarm system.
- Keep in a dry, cool and well-ventilated place.
- Store in a fireproof area.
- Indoor storage in a separate building with no other occupancy is suitable.
- The indoor storage of toxic gases is prohibited in some jurisdictions.
- Store in upright position only.
- It is recommended that both full and used cylinders be stored outdoors in a dedicated and properly designed and labeled storage area, away from other building ventilation intakes.
- The storage of these gases in occupied spaces is not recommended.
- This area should be secured, locked and have a well-drained, firm and level surface, preferably reinforced concrete.
- To guarantee safety keep according to Storage temperature and conditions.

Australian AS 1940 Storage Classification

- (Not applicable)

7.3 Specific end use(s)

- Contact your supplier for additional information

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SECTION 8: Exposure controls/personal protection**8.1 Control parameters****Components with national occupational exposure limits**

Components	Value type	Value	Basis
Phosphine	TWA	0.3 ppm 0.42 mg/m ³	Australia. Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment
Phosphine	STEL	1 ppm 1.4 mg/m ³	Australia. Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment

Components with other occupational exposure limits

Components	Value type	Value	Basis
Phosphine	TWA	0.05 ppm	USA. ACGIH Threshold Limit Values (TLV)
Phosphine	C	0.15 ppm	USA. ACGIH Threshold Limit Values (TLV)

8.2 Exposure controls**Control measures****Engineering measures**

- Ensure adequate ventilation.
- Apply technical measures to comply with the occupational exposure limits.
- Use a closed system process where feasible.

Individual protection measures**Respiratory protection**

- Self-contained breathing apparatus in confined spaces/insufficient oxygen/in case of large uncontrolled emissions/in all circumstances when the mask and cartridge do not give adequate protection.
- Use only respiratory protection that conforms to international/ national standards.
- Wear a positive-pressure supplied-air respirator.
- Use the indicated respiratory protection if the occupational exposure limit is exceeded.

Hand protection

- Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).
- Impervious gloves

Eye protection

- Ensure that eyewash stations and safety showers are close to the workstation location.
- Chemical resistant goggles must be worn.
- Tightly fitting safety goggles.

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Skin and body protection

- Impervious clothing
- Full protective suit
- Change working clothes after each workshift.
- Contaminated work clothing should not be allowed out of the workplace.
- Gas is not known to be absorbed through skin.
- Steel toed safety shoes are recommended for anyone handling compressed gas cylinders.

Hygiene measures

- Handle in accordance with good industrial hygiene and safety practice.
- Wash hands before breaks and at the end of workday.
- When using do not eat, drink or smoke.
- Eye wash bottles or eye wash stations in compliance with applicable standards.
- Ensure that eyewash stations and safety showers are close to the workstation location.
- Keep away from food and drink.

Environmental exposure controls

- Dispose of rinse water in accordance with local and national regulations.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

<u>Physical state</u>	gaseous
<u>Form</u>	Liquefied gas
<u>Colour</u>	colourless
<u>Odour</u>	garlic
<u>Odour Threshold</u>	No data available
<u>Melting point/freezing point</u>	sublimes
<u>Initial boiling point and boiling range</u>	sublimes
<u>Flammability (solid, gas)</u>	Pyrophoric
<u>Flammability (liquids)</u>	Not applicable
<u>Flammability/Explosive limit</u>	<u>Lower flammability/explosion limit:</u> 1.80 %(V)
	<u>Upper flammability/explosion limit:</u> 98.00 %(V)
<u>Flash point</u>	Pyrophoric
<u>Auto-ignition temperature</u>	<u>Ignition temperature:</u> 38 °C
<u>Decomposition temperature</u>	No data available
<u>pH</u>	Not applicable
<u>Viscosity</u>	No data available
<u>Solubility</u>	<u>Water solubility:</u> 364 mg/l (20 °C)
<u>Partition coefficient: n-octanol/water</u>	Not applicable
<u>Vapour pressure</u>	Not applicable
<u>Density</u>	1.17 g/cm ³ (20 °C)

<u>Relative density</u>	1.17 (20 °C)
<u>Relative vapor density</u>	1.146 (20 °C) (Air = 1.0)
<u>Particle characteristics</u>	No data available
<u>Evaporation rate (Butylacetate = 1)</u>	Not applicable
9.2 Other information	
<u>Explosiveness</u>	Not explosive, In use, may form flammable/explosive vapour-air mixture.
<u>Oxidizing properties</u>	Not considered as oxidizing
<u>Self-ignition</u>	The substance or mixture is pyrophoric
<u>Peroxides</u>	The substance or mixture is not classified as organic peroxide.
<u>Corrosion of Metals</u>	Corrosive to copper and copper alloys.
<u>Surface tension</u>	Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity

- No data available

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

- No data available

10.4 Conditions to avoid

- Keep away from direct sunlight.
- Keep away from open flames, hot surfaces and sources of ignition.

10.5 Incompatible materials

- Exposure to air.
- Oxidizing agents
- dimethyl sulfoxide.
- copper
- Brass
- Copper alloys
- Noble metals

10.6 Hazardous decomposition products

Hazardous decomposition products

- Oxides of phosphorus

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity No data available
Acute inhalation toxicity

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phosphine	LC50 - 4 h (gas) : ca. 57 ppm - Rat , male and female This product is classified as acute toxicity, category 1 Unpublished reports
Acute dermal toxicity	No data available
Acute toxicity (other routes of administration)	No data available
<u>Skin corrosion/irritation</u>	
phosphine	Causes burns.
<u>Serious eye damage/eye irritation</u>	
phosphine	Corrosive
<u>Respiratory or skin sensitisation</u>	No data available
<u>Mutagenicity</u>	
Genotoxicity in vitro	
phosphine	Ames test Strain: Salmonella typhimurium with and without metabolic activation negative Method: OECD Test Guideline 471 Unpublished reports
Genotoxicity in vivo	
phosphine	Chromosome aberration test in vivo - Mouse male Inhalation negative Published data
<u>Carcinogenicity</u>	
phosphine	Rat , male and female Inhalation NOAEC: 0.004mg/l Method: OECD Test Guideline 453 Highest dose tested Animal testing did not show any carcinogenic effects. Published data
<u>Toxicity for reproduction and development</u>	
Toxicity to reproduction/Fertility	No data available
Developmental Toxicity/Teratogenicity	
phosphine	Rat, female, Inhalation General Toxicity Maternal NOAEL: > 0.007 mg/l Developmental Toxicity NOAEL: > 0.007 mg/l Method: OECD Test Guideline 414 Highest dose tested, No toxicity to reproduction, Published data
<u>STOT</u>	
STOT - single exposure	No data available
STOT - repeated exposure	
phosphine	Exposure routes: Inhalation The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
phosphine	Inhalation (gas) two-year - Rat NOAEC: 0.0042 mg/l Method: OECD Test Guideline 453 no observed effect Published data
<u>Experience with human exposure</u>	No data available

CMR effects

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Carcinogenicity phosphine	Not classified as a carcinogen according to GHS criteria
Mutagenicity phosphine	Not classified as mutagen according to GHS criteria.
Teratogenicity phosphine	Not classified as toxic for the reproduction (development) according to GHS criteria
Reproductive toxicity phosphine	Not classified as toxic for the reproduction (fertility and/or development) according to GHS criteria
Aspiration toxicity	No data available

SECTION 12: Ecological information**12.1 Toxicity****Aquatic Compartment****Acute toxicity to fish**
phosphine

By analogy

LC50 - 96 h : - Oncorhynchus mykiss (rainbow trout)
static testVery toxic to fish.
Freshwater species**Acute toxicity to daphnia and other aquatic invertebrates**

No data available

Toxicity to aquatic plants

No data available

Toxicity to microorganisms

No data available

Chronic toxicity to fish

No data available

Chronic toxicity to daphnia and other aquatic invertebrates

No data available

M-Factor

phosphine

Acute aquatic toxicity = 100
(according to the Globally Harmonized System (GHS))**12.2 Persistence and degradability****Abiotic degradation**

No data available

Physical- and photo-chemical elimination

No data available

Biodegradation**Biodegradability**

phosphine

Not applicable (inorganic substance)

12.3 Bioaccumulative potential**Partition coefficient: n-octanol/water**

phosphine

Not applicable (inorganic substance)

Bioconcentration factor (BCF)

No data available

VAPORPH3OS® PHOSPHINE FUMIGANT

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12.4 Mobility in soil

Adsorption potential (Koc) No data available

Known distribution to environmental compartments No data available

12.5 Results of PBT and vPvB assessment

phosphine Not applicable (inorganic substance)

12.6 Other adverse effects**Ecotoxicity assessment**

Short-term (acute) aquatic hazard
phosphine Very toxic to aquatic life.

Long-term (chronic) aquatic hazard
phosphine Not classified due to lack of data.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product Disposal**

- The Company encourages the recycle, recovery and reuse of materials, where permitted. If disposal is necessary, The Company recommends that organic materials, especially when classified as hazardous waste, be disposed of by thermal treatment or incineration at approved facilities. All local and national regulations should be followed.

SECTION 14: Transport information**Road and Rail transport – ADG (Australia)**

14.1 UN number UN 2199

14.2 Proper shipping name PHOSPHINE

14.3 Transport hazard class 2.3
Subsidiary hazard class 2.1
Label(s) 2.3 (2.1)

14.4 Packing group
Packing group
Hazchem Code 2PE

14.5 Environmental hazards YES
Marine pollutant

14.6 Special precautions for user
For personal protection, see section 8.

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IMDG

14.1 UN number	UN 2199
14.2 Proper shipping name	PHOSPHINE
IMDG Code segregation group	Not Relevant
14.3 Transport hazard class	2.3
Subsidiary hazard class	2.1
Label(s)	2.3 (2.1)
14.4 Packing group	
Packing group	
14.5 Environmental hazards	YES
Marine pollutant	
14.6 Special precautions for user	
EmS	F-D , S-U
For personal protection, see section 8.	
14.7 Transport in bulk vessels according to IMO instruments	
No data available	

IATA

14.1 UN number	UN 2199
14.2 Proper shipping name	Not permitted for transport
14.3 Transport hazard class	Not permitted for transport
14.4 Packing group	
14.5 Environmental hazards	YES
Marine pollutant	
14.6 Special precautions for user	
Packing instruction (cargo aircraft)	Not permitted for transport
Packing instruction (passenger aircraft)	Not permitted for transport

For personal protection, see section 8.

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transport regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Poison Schedule (SUSMP Australia)**

- Schedule 7: Dangerous Poison
- Please use the original publication to check for specific uses, specific conditions or threshold limits that might apply for this chemical.

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Notification status

Inventory Information	Status
United States TSCA Inventory	- All substances listed as active on the TSCA inventory - This product is regulated under the United States Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).
Canadian Domestic Substances List (DSL)	- Listed on Inventory
Australian Inventory of Industrial Chemicals (AIIC)	- Listed on Inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- Listed on Inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- Listed on Inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	- Listed on Inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- Listed on Inventory
Taiwan Chemical Substance Inventory (TCSI)	- Listed on Inventory
New Zealand. Inventory of Chemical Substances	- All components are listed on the NZIoC inventory. Additional HSNO obligations may apply. Please refer to Section 15 of SDS for New Zealand.
Korea. Act on Registration and Evaluation of Chemicals	- When purchased from a Syensqo legal entity based in Korea, this product is compliant with "Act on Registration and Evaluation of Chemicals" (AREC or K-REACH, Article 10) as all its components are either excluded, exempt, and/or (pre)registered. When purchased from a legal entity outside of Korea, please contact your local representative for additional information.

SECTION 16: Other information**Full text of H-Statements**

- H220: Extremely flammable gas.
- H232: May ignite spontaneously if exposed to air.
- H280: Contains gas under pressure; may explode if heated.
- H314: Causes severe skin burns and eye damage.
- H318: Causes serious eye damage.
- H330: Fatal if inhaled.
- H400: Very toxic to aquatic life.

Key or legend to abbreviations and acronyms used in the safety data sheet

- C: Ceiling limit
- STEL: Exposure standard - short term exposure limit
- TWA: Exposure standard - time weighted average
- ca.: approximately
- ADR: European Agreement on International Carriage of Dangerous Goods by Road.
- ADN: European Agreement on the International Carriage of Dangerous Goods by Inland Waterways.
- RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
- IATA: International Air Transport Association.
- ICAO-TI: Technical Instructions for Safe Transport of Dangerous Goods by Air.

VAPORPH3OS® PHOSPHINE FUMIGANT

Revision Date 08.11.2025

- IMDG: International Maritime Dangerous Goods.
- TWA: Time weighted average
- ATE: Estimated value of acute toxicity
- EC: European Community number
- CAS: Chemical Abstracts Service.
- LD50: Substance that causes 50% (half) death in the test animals group (Median Fatal Dose).
- LC50: Substance concentration causing 50% (half) death in the test animals group.
- EC50: Effective Concentration of the substance causing the maximum of 50%.
- PBT: Persistent, Bioaccumulative and Toxic substance.
- vPvB: Very Persistent and Very Bioaccumulative.
- GHS/CLP/SEA: Classification, labeling, packaging regulation
- DNEL: Derived No Effect Level
- PNEC: Predicted No Effect Concentration
- STOT: Specific Target Organ Toxicity

Not all acronyms listed above are referenced in this SDS.

Further information

- Distribute new edition to clients
- Update
- See section 3

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. The information exclusively relates to the designated product in its unaltered state. Safety and health hazards may change if such product is used in combination with other materials or in any other manufacturing process. Users are responsible for compliance with all regulations linked to product related activities, and to use the products in accordance with technical instructions given by Syensqo, if any.

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

- Trade name ECO2FUME® FUMIGANT GAS

1.2 Relevant identified uses of the substance or mixture and uses advised against**Uses of the Substance/Mixture**

- Fumigant

1.3 Details of the supplier of the safety data sheet**Company**

CYTEC AUSTRALIA HOLDINGS PTY LTD.
Suite 1.06b, Level 1, 21 Solent Cct.,
Baulkham Hills, 2153 Australia
Telephone: +61 2 9846 6200

E-mail address

For questions about SDS content: manager.sds@syensqo.com
For all other topics use: www.syensqo.com/en/form/documentation

1.4 Emergency telephone number

+61 2 8014 4558 [CareChem 24]
MULTILINGUAL EMERGENCY NUMBER (24/7)
Europe/Latin America/Africa: +44 1235 239 670 (UK)
Middle East/Africa speaking Arabic: +44 1235 239 671 (UK)
Asia Pacific : +65 3158 1074 (Singapore)
China : 400 120 6011 (toll-free, access from China only)
North America : +1 800 424 9300

Poisons information

- "For advice, contact a Poison Information Center (e.g. phone Australia 13 1126) or a doctor (at once)"

Disclaimer

The ® indicates a Registered Trademark in the United States and the ™ indicates a trademark in the United States. The mark may also be registered, subject of an application for registration, or a trademark in other countries.

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Work Health and Safety Regulation 2011**

- | | |
|--|---|
| - Gases under pressure , Liquefied gas | H280: Contains gas under pressure; may explode if heated. |
| - Acute toxicity , Category 3 | H331: Toxic if inhaled. |
| - Skin irritation , Category 2 | H315: Causes skin irritation. |
| - Eye irritation , Category 2A | H319: Causes serious eye irritation. |

SUSMP (AU)

- Schedule 7: Dangerous Poison
- Please use the original publication to check for specific uses, specific conditions or threshold limits that might apply for this chemical.

2.2 Label elements

Work Health and Safety Regulation 2011

- CAS-No. 7803-51-2 phosphine

Pictogram



Gas cylinder



Skull and crossbones

Signal word

- Danger

Hazard statements

- H280 Contains gas under pressure; may explode if heated.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H331 Toxic if inhaled.

Precautionary statements

Prevention

- P261 Avoid breathing gas.
- P264 Wash skin thoroughly after handling.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear protective gloves/ eye protection/ face protection.

Response

- P302 + P352 IF ON SKIN: Wash with plenty of water.
- P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor.
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P332 + P313 If skin irritation occurs: Get medical advice/ attention.
- P337 + P313 If eye irritation persists: Get medical advice/ attention.
- P362 + P364 Take off contaminated clothing and wash it before reuse.

Storage

- P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
- P405 Store locked up.
- P410 + P403 Protect from sunlight. Store in a well-ventilated place.

Disposal

- P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards which do not result in classification

- Short-term (acute) aquatic hazard, Category 1 H400: Very toxic to aquatic life.

SECTION 3: Composition/information on ingredients

3.1 Substance

- Not applicable, this product is a mixture.

3.2 Mixture

- Chemical nature Physical mixture of phosphine and carbon dioxide

Information on Components and Impurities

Chemical name	CAS-No.	GHS Classification	Concentration [%]
Carbon dioxide	124-38-9	Acute toxicity, Category 4 ; H332	98
Phosphine	7803-51-2	Flammable gases, Category 1A ; H220 Gases under pressure, Compressed gas ; H280 Acute toxicity, Category 1 ; H330 Skin corrosion, Sub-category 1B ; H314 Serious eye damage, Category 1 ; H318	2
Non-hazardous ingredients *			Balance

* (Ingredients present at non-hazardous concentrations, according to criteria of SWAC (Australia) based on available information).

SECTION 4: First aid measures**4.1 Description of first aid measures****In case of inhalation**

- Quickly move the person away from the contaminated area. Make the affected person rest.
- Immediate medical attention is required.
- Show this sheet to the doctor.

In case of skin contact

- Remove contaminated clothing and shoes.
- Immediate medical attention is required.
- Wash off with soap and water.
- Wash off immediately with plenty of water for at least 15 minutes.

In case of eye contact

- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- Keep eye wide open while rinsing.
- Show this sheet to the doctor.
- Always obtain medical advice, even if there are no symptoms.

In case of ingestion

- Not applicable

4.2 Most important symptoms and effects, both acute and delayed**In case of inhalation****Symptoms**

- Fatigue
- discomfort in the chest

Symptoms

- Weakness
- Vomiting
- chest pain
- Diarrhoea
- Difficulty in breathing

Symptoms

- pulmonary oedema
- Dizziness
- Cyanosis
- Unconsciousness

Effects

- Serious effects on health can appear after exposure, even death.
- The effects will depend on target organs.
- If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.
- In case of inhalation, irritation/corrosion of the respiratory tract.
- Risk of respiratory disorder
- May cause irreversible skin damage.
- Chronic exposure may cause dermatitis.
- May cause irreversible eye damage.
- Loss of the eye

Symptoms

- Symptoms will depend on the target organs.
- Inhalation may provoke the following symptoms:
 - Cough
 - Breathing difficulties
 - Irritation
 - Redness
 - Swelling of tissue
 - May cause respiratory tract irritation.
- Dermatitis
- Causes skin burns.
- Lachrymation
- Conjunctivitis
- Causes eye burns.

4.3 Indication of any immediate medical attention and special treatment needed**Notes to physician**

- If breathed in, move person into fresh air.
- Be aware to maintain life support if necessary.
- Immediate medical attention is required.
- Consult with an ophthalmologist immediately in all cases.
- Burns must be treated by a physician.
- Treat symptomatically.
- Contact a poison control center.
- Keep under medical supervision for at least 48 hours.

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing media**

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Keep containers and surroundings cool with water spray.

5.2 Special hazards arising from the substance or mixture

- Dense white fumes are given off which may obscure the area.

5.3 Advice for firefighters

Special protective equipment for firefighters

- Wear full protective clothing and self-contained breathing apparatus.
- Hazchem Code 2XE

Specific fire fighting methods

- Cool containers/tanks with water spray.

Further information

- Control the use of water due to environmental risk (see section 6).

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

- Where exposure level is known, wear approved respirator suitable for level of exposure.
- Where exposure level is not known, wear approved, positive pressure, self-contained respirator.
- Do not breathe gas.
- Wear self-contained breathing apparatus and protective suit.
- If spillage occurs on the public highway, indicate the danger and notify the authorities (police, fire brigade).
- Evacuate personnel to safe areas.
- Remove all sources of ignition.
- Only qualified personnel equipped with suitable protective equipment may intervene.
- Stop the leak as quickly as possible (using non-sparking tools).
- Mechanically ventilate the spillage area, whilst avoiding the formation of explosive concentrations.

6.2 Environmental precautions

- Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

- Keep container tightly closed.
- Ventilate the area.

6.4 Reference to other sections

- For personal protection, see section 8.
- For disposal considerations see section 13.

Dangerous Goods - Emergency Response Guidebook (ERG) (AU ERG2018)

Guide : 123

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

- Wear protective gloves/ protective clothing/ eye protection/ face protection.
- Wash hands after handling.
- Do not breathe gas.
- The gas deadens the sense of smell. Do not depend on odor to detect presence of gas.
- Keep cylinder out of sun and away from heat.
- Keep cylinder in an upright position and protect from falling.
- Cylinders must be handled in accordance with industry standards for compressed gases.

Hygiene measures

- Handle in accordance with good industrial hygiene and safety practice.
- Wash hands before breaks and at the end of workday.
- When using do not eat, drink or smoke.
- Eye wash bottles or eye wash stations in compliance with applicable standards.

7.2 Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

Recommended storage temperature: < 60 °C

- The building should be adequately ventilated and equipped with a continuous monitoring and alarm system.
- Keep in a dry, cool and well-ventilated place.
- Store in a fireproof area.
- Indoor storage in a separate building with no other occupancy is suitable.
- The indoor storage of toxic gases is prohibited in some jurisdictions.
- Store in upright position only.
- It is recommended that both full and used cylinders be stored outdoors in a dedicated and properly designed and labeled storage area, away from other building ventilation intakes.
- The storage of these gases in occupied spaces is not recommended.
- This area should be secured, locked and have a well-drained, firm and level surface, preferably reinforced concrete.
- To guarantee safety keep according to Storage temperature and conditions.

Australian AS 1940 Storage Classification

- (Not applicable)

7.3 Specific end use(s)

- Contact your supplier for additional information

SECTION 8: Exposure controls/personal protection**8.1 Control parameters****Components with national occupational exposure limits**

Components	Value type	Value	Basis
Carbon dioxide	TWA	5,000 ppm 9,000 mg/m ³	Australia. Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment
Carbon dioxide	STEL	30,000 ppm 54,000 mg/m ³	Australia. Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment
Carbon dioxide	TWA	12,500 ppm 22,500 mg/m ³	Australia. Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment
Carbon dioxide	STEL	30,000 ppm 54,000 mg/m ³	Australia. Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment
Phosphine	TWA	0.3 ppm 0.42 mg/m ³	Australia. Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment

ECO2FUME® FUMIGANT GAS

Revision Date 09.11.2025

Phosphine	STEL	1 ppm 1.4 mg/m ³	Australia. Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment
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Components with other occupational exposure limits

Components	Value type	Value	Basis
Carbon dioxide	TWA	5,000 ppm	USA. ACGIH Threshold Limit Values (TLV)
Carbon dioxide	STEL	30,000 ppm	USA. ACGIH Threshold Limit Values (TLV)
Phosphine	TWA	0.05 ppm	USA. ACGIH Threshold Limit Values (TLV)
Phosphine	C	0.15 ppm	USA. ACGIH Threshold Limit Values (TLV)

8.2 Exposure controls**Control measures****Engineering measures**

- Ensure adequate ventilation.
- Apply technical measures to comply with the occupational exposure limits.
- Use a closed system process where feasible.

Individual protection measures**Respiratory protection**

- Self-contained breathing apparatus in confined spaces/insufficient oxygen/in case of large uncontrolled emissions/in all circumstances when the mask and cartridge do not give adequate protection.
- Use only respiratory protection that conforms to international/ national standards.
- Respirator with a vapour filter (EN 141)
- Recommended Filter type:
- Use the indicated respiratory protection if the occupational exposure limit is exceeded.

Hand protection

- Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).
- Impervious gloves

Eye protection

- Chemical resistant goggles must be worn.
- Ensure that eyewash stations and safety showers are close to the workstation location.

Skin and body protection

- Full protective suit
- Change working clothes after each workshift.
- Contaminated work clothing should not be allowed out of the workplace.
- Gas is not known to be absorbed through skin.
- Steel toed safety shoes are recommended for anyone handling compressed gas cylinders.

Hygiene measures

- Handle in accordance with good industrial hygiene and safety practice.
- Wash hands before breaks and at the end of workday.
- When using do not eat, drink or smoke.
- Eye wash bottles or eye wash stations in compliance with applicable standards.

Environmental exposure controls

- Dispose of rinse water in accordance with local and national regulations.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

<u>Physical state</u>	gaseous
<u>Form</u>	Liquefied gas
<u>Colour</u>	colourless
<u>Odour</u>	garlic
<u>Odour Threshold</u>	No data available
<u>Melting point/freezing point</u>	sublimes
<u>Initial boiling point and boiling range</u>	sublimes
<u>Flammability (solid, gas)</u>	No data available
<u>Flammability (liquids)</u>	No data available
<u>Flammability/Explosive limit</u>	<u>Lower flammability/explosion limit:</u> The product is not flammable. <u>Upper flammability/explosion limit:</u> The product is not flammable.
<u>Flash point</u>	The product is not flammable.
<u>Auto-ignition temperature</u>	No data available
<u>Decomposition temperature</u>	No data available
<u>pH</u>	Not applicable, substance/mixture is a gas
<u>Viscosity</u>	No data available
<u>Solubility</u>	<u>Water solubility:</u> slightly soluble
<u>Partition coefficient: n-octanol/water</u>	Not applicable
<u>Vapour pressure</u>	Not applicable
<u>Density</u>	Not applicable
<u>Relative density</u>	No data available
<u>Relative vapor density</u>	1.53 (25 °C)
<u>Particle characteristics</u>	No data available
<u>Evaporation rate (Butylacetate = 1)</u>	Not applicable
9.2 Other information	
<u>Oxidizing properties</u>	Not considered as oxidizing
<u>Self-ignition</u>	Not applicable
<u>Peroxides</u>	The substance or mixture is not classified as organic peroxide.

Corrosion of Metals

Corrosive to copper and copper alloys.

SECTION 10: Stability and reactivity**10.1 Reactivity**

- No data available

10.2 Chemical stability

- Stable

10.3 Possibility of hazardous reactions

- No data available

10.4 Conditions to avoid

- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Keep away from direct sunlight.

10.5 Incompatible materials

- Copper
- Brass
- Copper alloys
- Noble metals

10.6 Hazardous decomposition products**Hazardous decomposition products**

- Carbon oxides
- Oxides of phosphorus

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity****Acute oral toxicity**

Not classified as hazardous for acute oral toxicity according to GHS.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

Acute inhalation toxicity

LC50 - 1 h (gas) 5,011 ppm - Rat
Published data

Asphyxiation Hazard

This product is classified as acute toxicity, category 3
This product is a simple asphyxiant.

Acute dermal toxicity

Not classified as hazardous for acute dermal toxicity according to GHS.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

Acute toxicity (other routes of administration)

Not applicable

Skin corrosion/irritation

Skin irritation

Serious eye damage/eye irritation

Irritating to eyes.

Respiratory or skin sensitisation

Does not cause skin sensitisation.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

Does not cause skin sensitisation.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

Mutagenicity

Genotoxicity in vitro

Product is not considered to be genotoxic.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

Genotoxicity in vivo

Product is not considered to be genotoxic.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

Carcinogenicity

The product is not considered to be carcinogenic.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

Toxicity for reproduction and development

Toxicity to reproduction/Fertility

The product is not considered to affect fertility.,According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

Developmental Toxicity/Teratogenicity

The product is not considered to be toxic for development.,According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

STOT

STOT - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

STOT - repeated exposure

The substance or mixture is not considered to cause damage to organs through prolonged or repeated exposure.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

The product itself has not been tested.

Experience with human exposure

Experience with human exposure : Inhalation

No data is available on the product itself.

Experience with human exposure : Skin contact

No data is available on the product itself.

Experience with human exposure : Eye contact

No data is available on the product itself.

Experience with human exposure : Ingestion

No data is available on the product itself.

CMR effects

Carcinogenicity

phosphine

Not classified as a carcinogen according to GHS criteria

Mutagenicity

phosphine

Not classified as mutagen according to GHS criteria.

Teratogenicity

phosphine

Not classified as toxic for the reproduction (development) according to GHS criteria

Reproductive toxicity

phosphine

Not classified as toxic for the reproduction (fertility and/or development) according to GHS criteria

Aspiration toxicity

No aspiration toxicity classification, According to the available data on the components, According to the classification criteria for mixtures.

SECTION 12: Ecological information**12.1 Toxicity****Aquatic Compartment****Acute toxicity to fish**

The product itself has not been tested.

Acute toxicity to daphnia and other aquatic invertebrates

The product itself has not been tested.

Toxicity to aquatic plants

The product itself has not been tested.

Toxicity to microorganisms

The product itself has not been tested.

Chronic toxicity to fish

The product itself has not been tested.

Chronic toxicity to daphnia and other aquatic invertebrates

The product itself has not been tested.

Sediment compartment**Toxicity to benthic organisms**

The product itself has not been tested.

Terrestrial Compartment**Toxicity to soil dwelling organisms**

The product itself has not been tested.

Toxicity to terrestrial plants

The product itself has not been tested.

Toxicity to above ground organisms

The product itself has not been tested.

M-Factor

phosphine

Acute aquatic toxicity = 100
(according to the Globally Harmonized System (GHS))**12.2 Persistence and degradability****Abiotic degradation****Stability in water**

Conclusion is not possible for a mixture as a whole.

Photodegradation

Conclusion is not possible for a mixture as a whole.

Other Physico-Chemical reactions

Conclusion is not possible for a mixture as a whole.

Physical- and photo-chemical elimination**Physico-chemical removability**

Conclusion is not possible for a mixture as a whole.

Biodegradation**Biodegradability**

As (bio)degradability is not relevant for mixtures, all the components of the mixture were assessed individually (rapid degradability assessment available)

below).

Ratio BOD/COD Conclusion is not possible for a mixture as a whole.

Ratio BOD/ThOD Conclusion is not possible for a mixture as a whole.

Biochemical Oxygen Demand (BOD) Conclusion is not possible for a mixture as a whole.

Dissolved organic carbon (DOC) Conclusion is not possible for a mixture as a whole.

Chemical Oxygen Demand (COD) Conclusion is not possible for a mixture as a whole.

Adsorbed organic bound halogens (AOX) Conclusion is not possible for a mixture as a whole.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water phosphine Not applicable (inorganic substance)

Bioconcentration factor (BCF) No data available

12.4 Mobility in soil

Adsorption potential (Koc) Conclusion is not possible for a mixture as a whole.

Known distribution to environmental compartments No data available

12.5 Results of PBT and vPvB assessment

phosphine Not applicable (inorganic substance)

12.6 Other adverse effects

Global warming potential

carbon dioxide

Regulatory basis: Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) of the United Nations Framework Convention on Climate Change (UNFCCC)

20-year global warming potential: 1

100-year global warming potential: 1

500-year global warming potential: 1

Radiative efficiency: 0.000013 Wm²ppb

Additional Information: Major Greenhouse Gases

Ecotoxicity assessment

Short-term (acute) aquatic hazard Very toxic to aquatic life.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

Long-term (chronic) aquatic hazard No chronic environmental hazard identified.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

PRCO90072885

Version : 2.04 / AU (EN)

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Product Disposal

- The Company encourages the recycle, recovery and reuse of materials, where permitted. If disposal is necessary, The Company recommends that organic materials, especially when classified as hazardous waste, be disposed of by thermal treatment or incineration at approved facilities. All local and national regulations should be followed.

SECTION 14: Transport information**Road and Rail transport – ADG (Australia)**

14.1 UN number	UN 3162
14.2 Proper shipping name	LIQUEFIED GAS, TOXIC, N.O.S. (Phosphine)
14.3 Transport hazard class	2.3
Label(s)	2.3
14.4 Packing group	
Packing group	
Hazchem Code	2XE
14.5 Environmental hazards	YES
Marine pollutant	
14.6 Special precautions for user	
For personal protection, see section 8.	

IMDG

14.1 UN number	UN 3162
14.2 Proper shipping name	LIQUEFIED GAS, TOXIC, N.O.S. (Phosphine)
IMDG Code segregation group	Not Relevant
14.3 Transport hazard class	2.3
Label(s)	2.3
14.4 Packing group	
Packing group	
14.5 Environmental hazards	YES
Marine pollutant	
14.6 Special precautions for user	
EmS	F-C , S-U

For personal protection, see section 8.

14.7 Transport in bulk vessels according to IMO instruments

No data available

IATA

14.1 UN number	UN 3162
14.2 Proper shipping name	Not permitted for transport
14.3 Transport hazard class	Not permitted for transport
14.4 Packing group	
14.5 Environmental hazards	YES
Marine pollutant	
14.6 Special precautions for user	
Packing instruction (cargo aircraft)	Not permitted for transport
Packing instruction (passenger aircraft)	Not permitted for transport

For personal protection, see section 8.

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transport regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Poison Schedule (SUSMP Australia)**

- Schedule 7: Dangerous Poison
- Please use the original publication to check for specific uses, specific conditions or threshold limits that might apply for this chemical.

Notification status

Inventory Information	Status
United States TSCA Inventory	- All substances listed as active on the TSCA inventory - This product is regulated under the United States Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).
Canadian Domestic Substances List (DSL)	- Listed on Inventory
Australian Inventory of Industrial Chemicals (AIIC)	- Listed on Inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- Listed on Inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- Listed on Inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	- Listed on Inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- Listed on Inventory
Taiwan Chemical Substance Inventory (TCSI)	- Listed on Inventory
New Zealand. Inventory of Chemical Substances	- All components are listed on the NZIoC inventory. Additional HSNO obligations may apply. Please refer to Section 15 of SDS for New Zealand.
Korea. Act on Registration and Evaluation of Chemicals	- When purchased from a Syensqo legal entity based in Korea, this product is

	<p>compliant with "Act on Registration and Evaluation of Chemicals" (AREC or K-REACH, Article 10) as all its components are either excluded, exempt, and/or (pre)registered. When purchased from a legal entity outside of Korea, please contact your local representative for additional information.</p>
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SECTION 16: Other information

Full text of H-Statements

- H220: Extremely flammable gas.
- H280: Contains gas under pressure; may explode if heated.
- H314: Causes severe skin burns and eye damage.
- H315: Causes skin irritation.
- H318: Causes serious eye damage.
- H319: Causes serious eye irritation.
- H330: Fatal if inhaled.
- H331: Toxic if inhaled.
- H332: Harmful if inhaled.
- H400: Very toxic to aquatic life.

Key or legend to abbreviations and acronyms used in the safety data sheet

- C: Ceiling limit
- STEL: Exposure standard - short term exposure limit
- TWA: Exposure standard - time weighted average
- ca.: approximately
- ADR: European Agreement on International Carriage of Dangerous Goods by Road.
- ADN: European Agreement on the International Carriage of Dangerous Goods by Inland Waterways.
- RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
- IATA: International Air Transport Association.
- ICAO-TI: Technical Instructions for Safe Transport of Dangerous Goods by Air.
- IMDG: International Maritime Dangerous Goods.
- TWA: Time weighted average
- ATE: Estimated value of acute toxicity
- EC: European Community number
- CAS: Chemical Abstracts Service.
- LD50: Substance that causes 50% (half) death in the test animals group (Median Fatal Dose).
- LC50: Substance concentration causing 50% (half) death in the test animals group.
- EC50: Effective Concentration of the substance causing the maximum of 50%.
- PBT: Persistent, Bioaccumulative and Toxic substance.
- vPvB: Very Persistent and Very Bioaccumulative.
- GHS/CLP/SEA: Classification, labeling, packaging regulation
- DNEL: Derived No Effect Level
- PNEC: Predicted No Effect Concentration
- STOT: Specific Target Organ Toxicity

Not all acronyms listed above are referenced in this SDS.

Further information

- Distribute new edition to clients

ECO2FUME® FUMIGANT GAS

Revision Date 09.11.2025

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. The information exclusively relates to the designated product in its unaltered state. Safety and health hazards may change if such product is used in combination with other materials or in any other manufacturing process. Users are responsible for compliance with all regulations linked to product related activities, and to use the products in accordance with technical instructions given by Syensqo, if any.

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name NITROGEN COMPRESSED

Synonyms 10831001 - SDS NUMBER • 221, 222, 223, 224, 225, 226 - PRODUCT CODES • 221110,221122,221152, 224123,224150, 220110,220123,220150 - PRODUCT CODES • COREGAS NITROGEN COMPRESSED • NITROGEN 3.0 • NITROGEN 4.0 • NITROGEN 5.0 • NITROGEN 5.5 • NITROGEN 6.0 • NITROGEN AVIATION GRADE • NITROGEN FOOD GRADE • NITROGEN PHARMA GRADE

1.2 Uses and uses advised against

Uses INDUSTRIAL APPLICATIONS

1.3 Details of the supplier of the product

Supplier name COREGAS PTY LTD

Address 66 Loftus Rd, Yennora, NSW, 2161, AUSTRALIA

Telephone 1800 807 203

Email info@coregas.com

Website <http://www.coregas.com>

1.4 Emergency telephone numbers

Emergency 1300607577

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Gases Under Pressure: Compressed gas

Health Hazards

Not classified as a Health Hazard

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word WARNING

Pictograms



Hazard statements

H280 Contains gas under pressure; may explode if heated.

Prevention statements

None allocated.

Response statements

None allocated.

PRODUCT NAME NITROGEN COMPRESSED

Storage statements

P410 + P403 Protect from sunlight. Store in a well-ventilated place.

Disposal statements

None allocated.

2.3 Other hazards

Asphyxiant. Effects are proportional to oxygen displacement.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
NITROGEN	7727-37-9	231-783-9	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	Adverse effects not expected from this product.
Inhalation	If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator or Self Contained Breathing Apparatus (SCBA). Apply artificial respiration if not breathing. Give oxygen if available.
Skin	Adverse effects not expected from this product.
Ingestion	Ingestion is not considered a potential route of exposure.
First aid facilities	None allocated.

4.2 Most important symptoms and effects, both acute and delayed

In high concentrations may cause asphyxiation. Symptoms may include loss of mobility / consciousness. Victim may not be aware of asphyxiation.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use water fog to cool containers from protected area.

5.2 Special hazards arising from the substance or mixture

Non flammable.

5.3 Advice for firefighters

Temperatures in a fire may cause cylinders to rupture. Cool cylinders or containers exposed to fire by applying water from a protected location. Remove cool cylinders from the path of the fire. Evacuate the area if unable to keep cylinders cool. Do not approach cylinders or containers suspected of being hot.

5.4 Hazchem code

2T	
2	Fine Water Spray.
T	Wear full fire kit and breathing apparatus. Dilute spill and run-off.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

If the cylinder is leaking, evacuate area of personnel. Inform manufacturer/supplier of leak. Use Personal Protective Equipment (PPE) as detailed in Section 8 of the SDS.

6.2 Environmental precautions

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

PRODUCT NAME NITROGEN COMPRESSED

6.3 Methods of cleaning up

Carefully move material to a well ventilated remote area, then allow to discharge if safe to do so. Do not attempt to repair leaking valve or cylinder safety devices.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Use of safe work practices are recommended to avoid inhalation. Do not drag, drop, slide or roll cylinders. The uncontrolled release of a gas under pressure may cause physical harm. Use a suitable hand truck for cylinder movement.

7.2 Conditions for safe storage, including any incompatibilities

Do not store near incompatible materials. Cylinders should be stored below 65°C in a secure area, upright and restrained to prevent cylinders from falling. Cylinders should also be stored in a dry, well ventilated area constructed of non-combustible material with firm level floor (preferably concrete), away from areas of heavy traffic and emergency exits.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Nitrogen	SWA [AUS]	Asphyxiant			

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

PPE

Eye / Face	Wear safety glasses.
Hands	Wear leather gloves.
Body	Wear safety boots.
Respiratory	Where an inhalation risk exists, wear Self Contained Breathing Apparatus (SCBA) or an Air-line respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	COLOURLESS GAS
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	-196°C
Melting point	-210°C
Evaporation rate	NOT RELEVANT
pH	NOT RELEVANT
Vapour density	NOT AVAILABLE
Relative density	NOT AVAILABLE

PRODUCT NAME NITROGEN COMPRESSED

9.1 Information on basic physical and chemical properties

Solubility (water)	INSOLUBLE
Vapour pressure	NOT RELEVANT
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	100%
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10. STABILITY AND REACTIVITY

10.1 Reactivity

Unreactive under normal conditions.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Compatible with most commonly used materials. Avoid heating cylinders.

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	Based on available data, the classification criteria are not met.
Skin	Not classified as a skin irritant.
Eye	Not classified as an eye irritant.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Asphyxiant. Effects are proportional to oxygen displacement. Over exposure may result in dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No ecological damage caused by this product. Nitrogen is the major component of the atmosphere (78 % v/v). It is a fairly unreactive gas and will not contribute to ozone depletion or global warming. If released to soil or water, nitrogen will quickly disperse to the atmosphere. Not toxic to plants or animals except at extremely high (asphyxiating) levels.

12.2 Persistence and degradability

Nitrogen occurs naturally in the atmosphere. The gas will be dissipated rapidly in well-ventilated areas.

PRODUCT NAME NITROGEN COMPRESSED

12.3 Bioaccumulative potential

Not applicable.

12.4 Mobility in soil

The substance is a gas, not applicable.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Cylinders should be returned to the manufacturer or supplier for disposal of contents.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1066	1066	1066
14.2 Proper Shipping Name	NITROGEN, COMPRESSED	NITROGEN, COMPRESSED	NITROGEN, COMPRESSED
14.3 Transport hazard class	2.2	2.2	2.2
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code 2T
GTEPG 2C1
EmS F-C, S-V

Other information Ensure cylinder is separated from driver and that outlet of relief device is not obstructed. Refer to Commonwealth, State and Territory Dangerous Goods Legislation which contain requirements which affect gas storage and transport.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

PRODUCT NAME NITROGEN COMPRESSED

Additional information

The storage of significant quantities of gas cylinders must comply with AS4332 The storage and handling of gases in cylinders.

APPLICATION METHOD: Gas regulator of suitable pressure and flow rating fitted to cylinder or manifold with low pressure gas distribution to equipment.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (highly acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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