Environmental Protection Authority
Te Mana Rauhī Taiao

Performance Standard for Site Plans and Drawings

For Test Certifiers

JULY 2012

PERFORMANCE STANDARD

New Zealand Government

Preface

This standard is one of a series produced by the Environmental Protection Authority (EPA) to assist test certifiers in their certification work. The EPA expects all test certifiers to adhere to the information given. The performance of test certifiers will be audited against these standards, as will any complaint made against a test certifier.

This document is not intended to be a comprehensive review of the relevant legislation. It covers those items subject to test certification. If in doubt, refer to the appropriate regulations or site and storage document.

This standard does not address the test certification of class 1 explosive substances.

This document includes checklists and supporting forms for test certifiers to use. These checklists (or equivalent) must be completed and kept for future reference and audit.

This standard was updated in 2012.

Introduction

This standard establishes the test certificate requirements for site plans and drawings under the location test certificate provisions of the Hazardous Substances and New Organisms Act,1996.

Test certificates must be held for locations where flammable or oxidising[1] substances are present.

The test certifier must certify that the hazardous substance location has a site plan available for inspection. The plan must show in relation to the legal boundary of the site the physical position of:

- all hazardous substance locations within the place, and
- all hazardous atmosphere zones and controlled zones within the place

Any non-compliance must be noted and the person in charge advised of the shortcomings. Non-compliances must be rectified before the test certificate may be issued or renewed. If a certificate cannot be issued, you must notify the enforcement agency, the Ministry of Business, Innovation and Employment (MBIE).

This standard is designed to:

- set out the criteria specified in the legislation to ensure compliance with the site plan controls that are subject to test certification
- advise test certifiers of the components of the test certificate
- ensure assessments are consistent and that the test certifier is able to identify the reason for issuing or not issuing a test certificate
- provide test certifiers with a record of their assessment
- provide a point of reference against which the performance of test certifiers may be audited
- provide a point of reference for the investigation of any complaint levelled against a test certifier

It refers to the relevant parts of:

- Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001, referred to as the classes 1 to 5 controls regulations
- Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice 2004, referred to as the Transfer Notice
- Site and storage conditions for group standards[2], referred to as the site and storage conditions

[1] Classes 2, 3, 4 and 5.

[2] The site plans and drawings conditions set out in site and storage documents repeat the classes 1 to 5 controls regulations. The clause numbers vary from group standard to group standard and consequently are not referenced in this document.

Hazardous Substance location test certificates

A hazardous substance location test certificate must be issued where flammable and oxidising classes of hazardous substances are held in quantities that exceed their respective thresholds. The threshold limits for a hazardous substance location are set out in Schedule 3, Table 4 of the classes 1 to 5 controls regulations or in the site and storage conditions. Toxic, corrosive and ecotoxic substances are not part of the location test certificate and do not need to be examined.

The test certificate must list the hazardous substance locations that have been certified at a place as well as the classifications involved so that the person in charge is in no doubt regarding the extent of the assessment.

The requirements of a site plan are set out in regulations 77(4)(b), 94(5)(b) and 116(5)(b) of the classes 1 to 5 controls regulations. These regulations are referred to in the test certification requirements where flammable or oxidising substances are present at a hazardous substance location, notably, regulations 81, 82, 99, 100, 121 and 122.

When is a site plan required?

A site plan is required whenever a hazardous substance location is to be established. The threshold quantity and length of time the substance is present at the location will dictate whether or not a hazardous substance location exists.

Where hazardous atmosphere zones exist, these must be shown on the site plan. The threshold quantities for a hazardous atmosphere zone may be less than that for the hazardous substance location.

What is required of the site plan?

The plan or plans must be maintained and accurately show the physical position, relative to the legal boundaries of the site, of:

- all hazardous substance locations within the place that contain classes 2, 3, 4, or 5 substances
- all hazardous atmosphere zones where classes 2 or 3 substances are located, and
- all controlled zones within the place

What standards are required of the plan?

The legislation does not specify the format of a site plan. Local authorities often specify standards for drawings, particularly when a resource consent is sought. The typical requirements are plans to a 1:100 or 1:200 metric scale, or to a scale that shows sufficient detail of the proposal to determine its effects. As most hazardous facilities are subject to the consent process, such drawings should be available to the person in charge. In addition, the Ministry of Business, Innovation and Employment (MBIE), which incorporates the former Department of Building and Housing, has published a “Guide to applying for a building consent (simple residential buildings)” see Attachment 1.

Site drawings for a location test certificate should meet these or an equivalent standard. The site plan may take the form of a scaled drawing, a concise sketch, an aerial photograph or a map. In the case of the last three, all important dimensions or distances should be marked on the plan to provide an accurate relationship between site features.

A plan should be at least A4 size, larger if necessary, to ensure the legibility of site features. Where colours, shaded areas, symbols or abbreviations are used, a legend or key should be included.

To ensure the detail is readily understood, separate plans covering the site layout, hazardous atmosphere zones and controlled zones may be presented. In most cases, two drawings showing the plan view should suffice. An elevation drawing for any hazardous atmosphere zone may be combined by way of drawing insets. Where there is more than one drawing, both hazardous substance location(s) and legal boundaries must appear on each drawing.

The main point to remember about site plans is making sure the measurements are clear and accurate and there can be no confusion as to the location of the hazardous substances, hazardous atmosphere zones and controlled zones on the property.

What has to be test certified for site plans?

The person in charge must ensure that they have plans that cover the requirements of the classes 1 to 5 controls regulations. Subject to the substance classification, the test certifier must certify that the requirements of the classes 1 to 5 controls regulations 77(4)(b), 94(5)(b), 116(5)(b) and 122(b) are complied with.

Regulation 81 of the classes 1 to 5 controls regulations was varied in Schedule 10 of the Transfer Notice to include test certification of the controls relating to the adverse effects of unintended ignition of class 2 and class 3.1 hazardous substances. Among other things, this schedule sets out the extent of any controlled zone which should be checked as part of the certification process.

The test certifier must not only sight the plans but also certify that they are an **accurate and true representation of the place**. Site plans must be checked for the correctness of controlled zone dimensions and the controlled zone representations on the plan. A physical check on site must be undertaken to verify that the required separation distances are correct. The physical checks must confirm any conditions of an approval given by the Authority for a separation distance variation are being adhered to.

The site plan may also show:

- that the requirements of classes 1 to 5 regulations 76, 95, 96, 117 and 118 are being complied with by including measurements to confirm necessary separation distance
- the position of fire extinguishers (emergency management regulations 21 and 22)
- the location of emergency equipment (emergency management regulation 31)

To certify these matters a physical check is necessary and a checklist for this is provided in Appendix 3.

What is regarded as an “acceptable” site plan?

As a minimum:

- the plan must be accurate and include dimensions and a scale
- all drawings should contain:
  - a drawing number and title
  - the designer’s and owner’s name and job address, and
  - a date for version control

Where the layout has been changed, or equipment added or removed, the drawings must reflect this. Check the accuracy of the drawing, it is surprising what can change, even within a 12-month period.

The drawing(s) must show:

- all hazardous substance locations within the place that contain classes 2, 3, 4, or 5 substances
- all hazardous atmosphere zones where classes 2 or 3 substances are located, and
- all controlled zones within the place

Examples of site plans are set out in Appendix 2.

What if the plans are not to an “acceptable” standard?

When a test certificate cannot be issued due to defective or absent drawings, the person in charge must be informed with a written report confirming the reason for not issuing the certificate.

If the non compliance is minor and technical the test certifier must consider issuing a conditional location test certificate. For further information see *Performance Standard for Conditional Location Test Certificates* (EPA0022).

If proper drawings are not forthcoming within the timeframe and you are unable to issue a test certificate, you must bring the failure to the attention of the enforcement agency.

Can a test certifier help a client prepare a site plan?

Test certifiers must ensure that they do not find themselves in a situation where there is a conflict of interest. However, there may be circumstances where they may choose to help clients to prepare site plans and identify the extent of the hazardous atmosphere and controlled zones.

The client must understand that this is a consultancy service and not test certification, and that they may engage others to do this work. As a consultant, a test certifier must be satisfied they have the knowledge to provide such drawings or advice on drawings, particularly where, for example, a hazardous atmosphere zone becomes complex.

Appendix 1: Typical information required for a Resource Consent

This appendix provides information typically required for site plans when seeking a resource consent. The same standard should be sought when providing site plans for a location test certificate.

Site plans must be drawn at a 1:100 or 1:200 metric scale where possible, or to such a scale as to show sufficient detail of the proposal to determine its effects. If the plans are larger than A3 size, copies reduced to A3 must also be provided. The site plans must show:

- a north point accurately orientated, and
- a unique plan number and title describing the proposal and the site

The applicant must provide a site plan detailing, where relevant, the existing situation including:

- details of hazardous areas (for example uncompacted filling or flood-prone areas)
- topography (noting significant landforms and natural features)
- water bodies and catchment orientation
- vegetation (including that located on adjacent road reserve or surrounding properties) and/or habitats of indigenous fauna
- all certificate of title boundaries
- road frontages
- existing buildings (indicating those to be retained)
- buildings on adjacent sites

The applicant must provide a site plan detailing, where relevant, the proposed development including:

- design of earthworks and final levels and contours of the site
- layout and location of proposed structures and buildings or alterations to existing structures and buildings
- location of proposed activities, vehicle parking, servicing, circulation and manoeuvring, pedestrian and vehicular access
- floor plans
- calculation of site coverage, and
- a landscaping plan that outlines landscape design, site planting and fencing

The applicant must provide, where relevant, elevation drawings, numbered and drawn to a metric scale of generally 1:100 or such as to clearly show the:

- relationship of buildings to existing and finished ground levels
- extent of compliance with relevant plan rules including solar access and maximum building height, and
- elevations from the street showing the relationship of proposed structures to structures on adjacent sites, including the location of existing private outdoor spaces and main living area windows (where these have outlook over the development)

Extract from Guide to applying for a building consent (simple residential buildings)[3]

3.3 Drawings

All drawings should contain a drawing number and title, the designer's and owner's name and job address, and be dated for version control.

Drawing conventions – line types and widths, lettering types and size, symbols for building features and elements, designation of spaces, representation of materials and cross referencing conventions – should generally conform to AS/NZS 1100 Technical Drawing. Either hand drawn or CAD (computer-aided design) drawings are acceptable.

Drawing sizes may vary according to circumstances and convenience, usually ranging from A0 to A4. The size of drawing sheet should be consistent within a single set of project drawings. However, occasionally drawings or diagrams of components and construction details are more appropriately provided in A4 size and bound in with specification data (for example, a specific engineering detail).

The recognised Standard for architectural and engineering drawings in New Zealand is set out in different parts under AS/NZS 1100 Technical Drawing. This group of Standards provides useful advice on drawing conventions. While they do not provide a model for a typical set of building consent documents or construction documents, they nevertheless provide a good base to work from.

3.4 Drawing Range

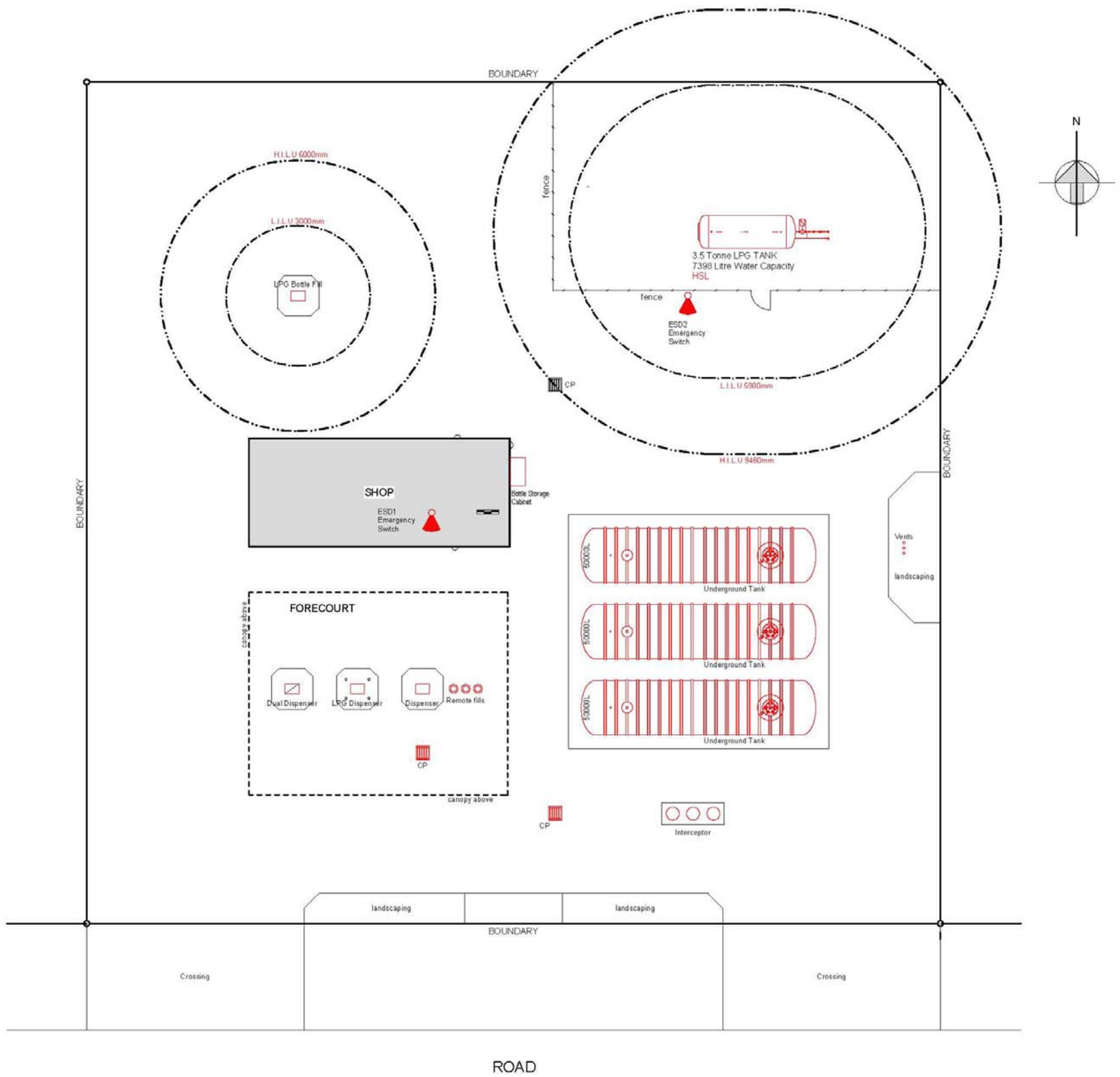
The size and complexity of the project often determines the level or amount of detail needed, and extent of associated structural and building services-related documents. You can find more detailed information on the form and content of drawings in section 6.0 of [the] guide.

3.5 Dimensions

AS/NZS 1100.301 sets out conventions for dimensions on drawings. When a finished dimension is critical for compliance or construction you should clearly identify it in the relevant drawing or specification. Timber size should be identified by its actual finished size.

[3] MBIE has published a *Guide to applying for a building consent (simple residential buildings*) see the Building and Housing section at http://www.mbie.govt.nz/

Appendix 2: Examples of site plans



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LEGEND:

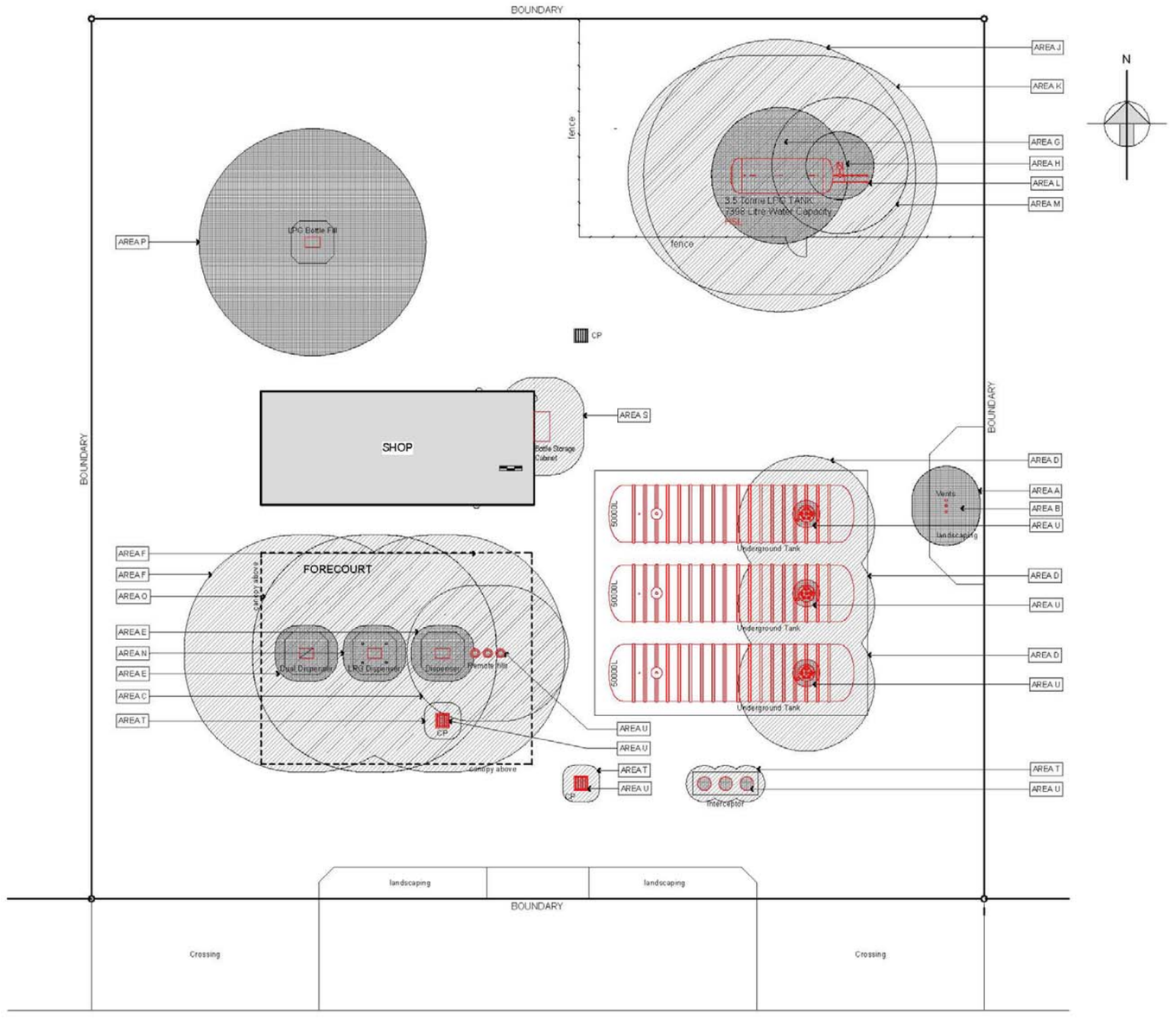
Power & Comms
Air
Water
Ducts
Sewer
Stormwater
Sludion Lines
Fill Lines
Vent Lines
LPG
CNG
MH = Manhole
CP = Catchpit
SV = Stop valve
BP = Backflowpreventer
DP = Down pipe
GT = Gully trap
Terminal Vent
Emergency Stop
Monitoring Well
Main Switchboard
HSL = Hazardous Substance Location — HSL
H.I.L.U = High Intensity Land Use Contour (dimension in mm)
L.I.L.U = Low Intensity Land Use Contour (dimension in mm)

SCHEDULE OF EMERGENCY ISOLATION SWITCH POINTS

REF	LOCATION	FUNCTIONS	RESET LOCATION
ESD1	Shop Counter	All Fuels	Shop Counter
ESD2	LPG Counpound	LPG Fuels	LPG Compound

HAMILTON
PH (07) 839 5622
FX (07) 838 2500
PO. BOX 1465
HAMILTON, NZ
www.sha.co.nz

AUCKLAND
PH (09) 309 9660
FX (09) 309 9661
PO. BOX 8232
SYMONDS ST
AUCKLAND, NZ



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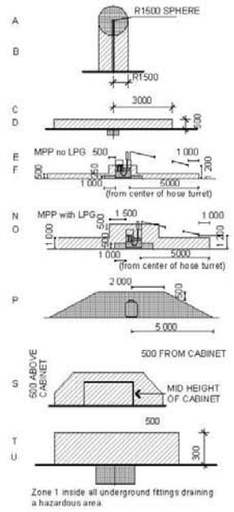
NOTES:
1. HAZARDOUS AREA ZONE 1
2. HAZARDOUS AREA ZONE 2
3. CLASSIFICATION OF HAZARDOUS AREAS TO AS/NZS 2430.3.2 2004 & AS/NZS 2430.3.4 2004

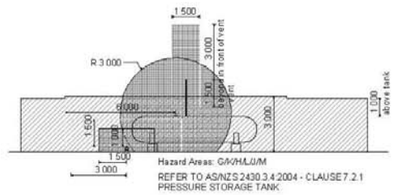


Zone 1 inside all underground fittings draining a hazardous area

HAZARDOUS AREA SCHEDULE

REFER TO AS/NZS 2430.3.2:2004
LPG REFER TO AS/NZS 2430.3.4:2004

AREA	ZONE	DESCRIPTION	SIZE	AREA	ZONE	DESCRIPTION	SIZE
A	1	TANK VENT	1500 SPHERE FROM OUTLET	K	2	LPG TANK	REFER TO AS/NZS 2430.3.4:2004 - CLAUSE 7.2.1 PRESSURE STORAGE TANK
B	2	TANK VENT	1500 RADIUS AROUND PIPE	L	1	LPG TANK PUMP	1500 LATERALLY TO 1000 ABOVE PUMP
C	2	TANK FILL POINT	3000 RADIUS FROM FILL POINT /500 ABOVE GROUND	M	2	LPG TANK PUMP	3000 LATERALLY TO 1500 ABOVE PUMP
D	2	TANK DIP POINT	3000 RADIUS FROM FILL POINT /500 ABOVE GROUND	N	1	LPG DISPENSER	1000 FROM DISPENSER 500 ABOVE GROUND
E	1	PETROL DISPENSER	HYDRAULIC COMPARTMENT OF DISPENSER CABINET 1000 LATERALLY FROM DISPENSER / 250 ABOVE GROUND	O	2	LPG DISPENSER	1500 FROM DISPENSER 1200 ABOVE GROUND / 5000 FROM DISPENSER 1000 ABOVE GROUND / ZONE 1 1000 AROUND DISPENSER 500 ABOVE GROUND
F	2	PETROL DISPENSER	4M FROM DISPENSER MIN. / 500 ABOVE GROUND OR 1M FROM HOSE NOZZLE WHICH EVER IS GREATER 500 FROM DISPENSER / 1200 ABOVE GROUND TO 500 ABOVE GROUND	P	1	LPG BOTTLE FILL	5000 RADIUS AT GROUND LEVEL TO 2000 RADIUS 500 ABOVE BOTTLE
G	1	LPG SAFETY RELIEF VALVE	1500 CYCLINDER FROM OUTLET TO 3000 ABOVE AND 1500 BELOW	S	2	HOMEGAS CABINET	500 FROM CABINET / 500 ABOVE CABINET TO 1500 FROM AT MID HEIGHT OF CABINET TO GROUND
H	1	LPG (ULLAGE) VENT VALVE	3000 RADIUS SPHERE FROM FILL POINT	T	2	ALL UNDERGROUND FITTINGS DRAINING A HAZARDOUS AREA	500 FROM DRAIN/300 ABOVE DRAIN
J	2	LPG TANK FILL	6000 RADIUS TO 3000 ABOVE GROUND	U	1	ALL UNDERGROUND FITTINGS DRAINING A HAZARDOUS AREA	THE AREA WITHIN COLLECTION DRAINS, SUMPS



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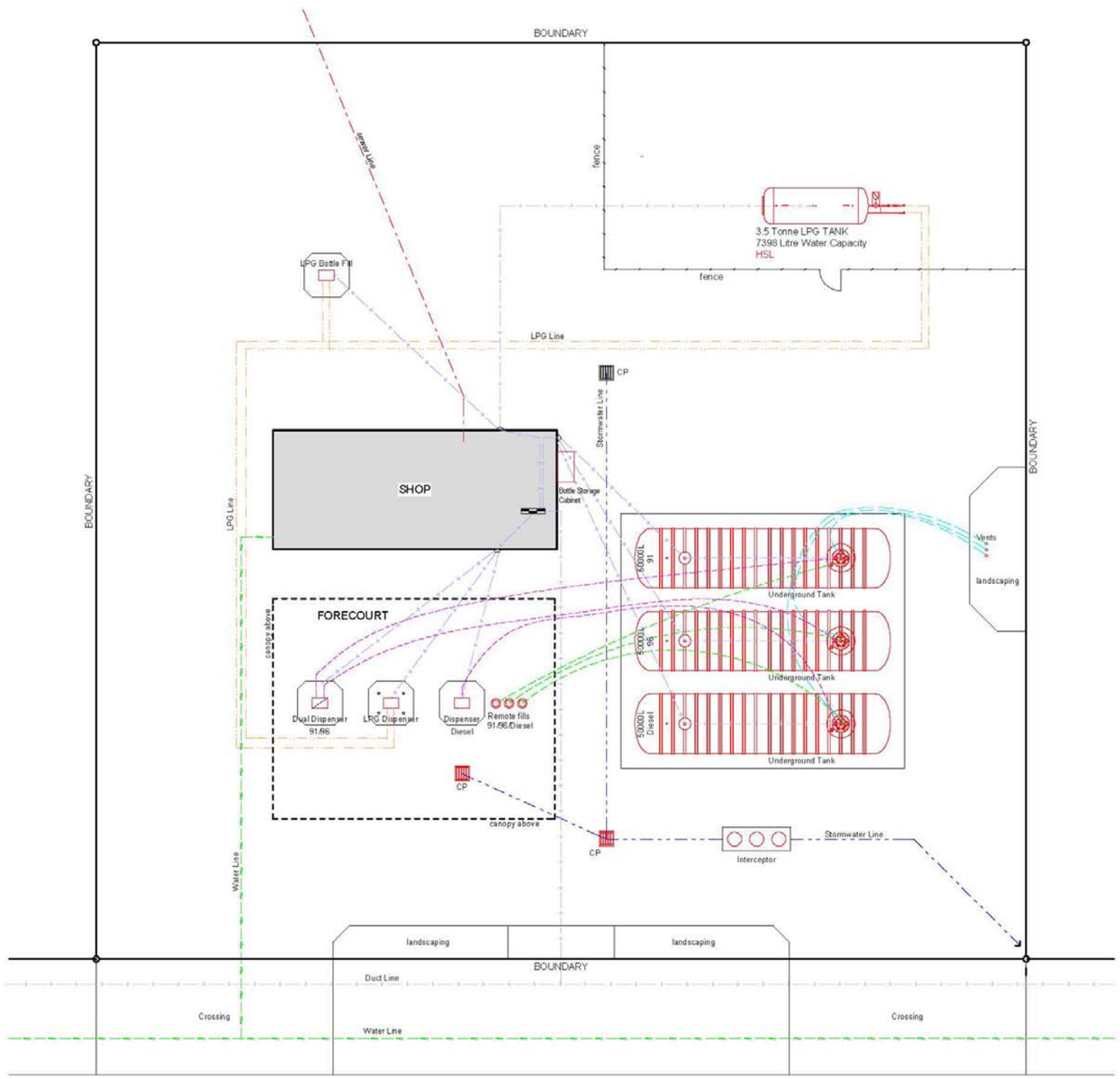

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LEGEND:

Power & Comms
Air
Water
Ducts
Sewer
Stormwater
Suction Lines
Fill Lines
Vent Lines
LPG
CNG
MH = Manhole
CP = Catchpit
SV = Stop valve
BP = Backflow preventer
DP = Down pipe
GT = Gully trap
Terminal Vent
Emergency Stop
Monitoring Well
Main Switchboard
HSL = Hazardous Substance Location HSL

ROAD

TANKAGE AND PIPING TABLE

TANK TYPE	TANK CAPACITY AND PRODUCT	DATE	TANK DEPTH	FILL	SPILL CONTAINER	OVERFILL VALVES	CATHODIC PROTECTION		ISO VALVE AT TANK	SAFE SUCTION	FILL LINES		SUCTION LINES		VENT LINES		PUMP SUMP
							INSTALLED	TYPE			MATERIAL	DATE	MATERIAL	DATE	MATERIAL	DATE	
Double Wall Fibreglass	50,000ltr 91	2006		Remote	Yes	Yes	No		Yes	Yes	UPP	2006	UPP	2006	UPP	2006	Yes
Double Wall Fibreglass	50,000ltr 96	2006		Remote	Yes	Yes	No		Yes	Yes	UPP	2006	UPP	2006	UPP	2006	Yes
Double Wall Fibreglass	50,000ltr D	2006		Remote	Yes	Yes	No		Yes	Yes	UPP	2006	UPP	2006	UPP	2006	Yes
Steel	3.5 Tonne LPG	2005		Direct	-	Yes	Yes		Yes	-							

HAMILTON
PH (07) 839 5622
FX (07) 838 2500
PO BOX 1465
HAMILTON, NZ
www.sha.co.nz

AUCKLAND
PH (09) 309 9660
FX (09) 309 9661
PO BOX 8232
SYMONDS ST
AUCKLAND, NZ

Appendix 3: Hazardous Substance Checklist for Plans and Drawings

This assessment is to evaluate the plans and drawings element of a location test certificate.

Test certifiers should complete this checklist as part of their assessment when certifying a location. If any of the controls are not met a test certificate must not be issued. The test certifier must advise the client and the MBIE of any deficient items.

There is no requirement to provide recommendation which could be construed as a conflict of interest.

Premises/Company:	
Contact Name:	
Physical Address:	
Date of Assessment:	
Test Certifier:	
Notes:	

Plans and Drawings

Item	Type of Drawing (tick as appropriate)					
1.	☐ Scale Drawing	☐ Sketch	☐ Aerial Photo	☐ Map	☐ Hard Copy	☐ Electronic

Item	Requirement	Complies Yes/No	Evidence of Compliance
2.	Drawing Number/Identifier	----	List number(s)
3.	Drawing prepared by a competent person		Qualifications
4.	True and accurate representation		
5.	To-scale, or all important dimensions and structures and distances specified		List all dimensions not specified
6.	Suitable size (A4 or larger)		State size
7.	Any site change or improvements incorporated since the date of the original drawing Are these relevant to the location test certificate		
8.	Legend/key defines colours, shaded areas, symbols or abbreviations		

Essential content (must have)

The following must be marked on each site plan or drawing.

Item	Requirement	Complies Yes/No	Evidence of Compliance
9.	Company/trading name of occupier		
10.	Street address of site		
11.	All parts of the site, buildings and/or rooms relevant to the test certification identified		
12.	All established hazardous substance locations clearly identified		
13.	Hazardous atmosphere zones clearly delineated		
14.	Controlled zones clearly delineated		
15.	Vehicular and pedestrian entry points to site and buildings where hazardous substances are situated are identified		

Additional content (can have)

Where appropriate the following may be marked on a site plan or drawing.

Item	Requirement	Complies Yes/No/NA	Evidence of Compliance
16.	Fire/evacuation assembly points		
17.	Location of fire-fighting equipment		
18.	Location of other emergency equipment		
19.	Positions of emergency shut-off controls (gas, liquid, electrical, drainage)		
20.	Electrical wiring, distribution boards		
21.	Map of underground pipelines for stationary tanks		
22.	Other		

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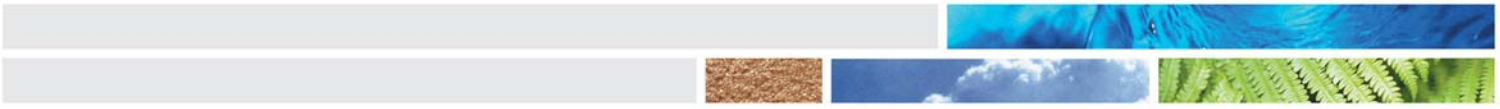
Environmental Protection Authority
Te Mana Rauhī Taiao

Level 10, 215 Lambton Quay, Wellington 6011, New Zealand



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