



Pipeline Hazard Analysis

Project Mars Data Centre - 12 Mars Road, Lane Cove West

Pipeline Hazard Analysis

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Goodman Property Services (Aust) Pty Ltd

Prepared by

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Quality Management

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0	11 April 2025	Issued final		
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B	18 February 2026	Revision B – Formal Lodgement		

Executive Summary

Background

This (RCE-24358_GoodmanMarsRd_Pipeline_Final_18Feb26_Revision B - Formal Lodgement) has been prepared by Riskcon Engineering Pty Ltd to accompany a State Significant Development Application (SSDA) for the construction and ongoing operation of a data centre facility at 12 Mars Road, Lane Cove West in the Lane Cove Government Area (LGA). The site is legally described as Lot 22 in Deposited Plan 732062.

This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the Project Mars Data Centre Project (SSD-82052708) dated 10th April 2025.

Goodman Property Services (Aust) Pty Ltd (Goodman) has proposed to develop a data centre at their site located at 12 Mars Road, Lane Cove West, NSW. It has been identified that the site may be located within the vicinity of existing high pressure dangerous goods or gas pipelines. In the event the pipelines are located within the construction area of the proposed development, there is a potential that excavation associated with the construction may impact the pipelines causing damage, leaks and potential ignitions of flammable materials.

Due to the location of the development in relation to the underground pipelines, it is necessary to consult with all operators of high-pressure dangerous goods or gas pipelines within or in the vicinity of the development with regards to requirements under Australian Standard AS 2885 Pipelines – Gas and liquid petroleum and to provide sufficient details on how these outcomes will be delivered or implemented.

Riskcon Engineering Pty Ltd (Riskcon) has been commissioned by Goodman to prepare a report assessing the potential impacts on the underground pipelines in support of the development application at 12 Mars Road, Lane Cove West, NSW.

Conclusions

The high-pressure dangerous goods and gas pipeline (the pipelines) review and consultation study conducted for the proposed Development at 12 Mars Rd, Lane Cove West, NSW has been assessed for the potential impact to the pipelines in the vicinity of the proposed Development.

It was identified that there is one high pressure and one medium pressure dangerous goods or gas pipelines in the area which may be impacted by the proposed Development, this is:

- Jemena gas pipeline (BYDA Sequence No: 245849360) 1050 kPa, south of the development.
- Jemena gas pipeline (BYDA Sequence No: 245849360) 210 kPa, along Mars Rd and within the north end of the development area.

The 210 kPa medium pressure pipeline runs along Mars Rd and enters the development area. Consultation was held with Jemena which indicated that provided there are no deep excavations along the site boundary or in the location of the pipeline of the site, there would be no impact to the pipeline. Subsequently, the developer has catered their design around the site to eliminate deep excavations within proximity of the site boundary such that no impact would occur near the pipeline.

It is therefore concluded that provided the recommendations are adhered to, there will be no impact to the high-pressure dangerous goods or gas pipelines in the area from the development at 12 Mars Rd, Lane Cove West, NSW.

Recommendations

Based on the discussion and assessment conducted within this report, the following recommendations have been made:

- The development at 12 Mars Rd, Lane Cove West, NSW shall be designed such that deep excavations within proximity of the northern site boundary and area of the 210 kPa pipeline on site are eliminated.
- Where it is not possible to eliminate deep excavations within proximity to pipelines, further consultation with Jemena shall occur and any works within 3 m of the pipelines shall have a Jemena standby present.
- Notwithstanding the above, Jemena shall be consulted to communicate any changes to the design and the proposed construction methodology to ensure no impact to the pipeline will occur.

Table of Contents

Executive Summary	i
1.0 Introduction	1
1.1 Background	1
1.2 Objectives	1
1.3 Scope of Services	2
2.0 Methodology	3
2.1 General Methodology	3
3.0 Site Description	4
3.1 Site Location and Layout	4
3.2 Project Description	4
3.3 Quantities of Dangerous Goods Stored and Handled & SEPP-RH Screening	5
4.0 High Pressure Dangerous Goods or Gas Pipeline Review	12
4.1 High Pressure Dangerous Goods or Gas Pipeline Identification	12
5.0 Hazard Identification	14
5.1 Introduction	14
5.2 Gas Pipelines	14
6.0 Pipeline Assessments	15
6.1 Introduction	15
6.2 High Pressure Natural Gas Assessment	15
6.2.1 External Interference	15
6.2.2 Hot-Tap by Error	16
6.2.3 Corrosion	17
6.2.4 Ground Movement	17
6.2.5 Construction Defect	17
6.2.6 Material Defect	17
6.2.7 Lightning	17
6.2.8 Fatality Risk	17
6.2.8.1 Jet Fire	18
6.2.8.2 Flash Fire	18
6.2.8.3 Explosion	18
6.2.8.4 Incident Frequency	18
7.0 Conclusion and Recommendations	20
7.1 Conclusions	20
7.2 Recommendations	20
8.0 References	21
Appendix A Hazard Identification Table	22
B1. Hazard Identification Table	23
Appendix B Details of Correspondence	24
B1. Pipeline Operator Correspondence	25

List of Figures

Figure 3-1: Site Location	4
Figure 3-2: Site Layout	6
Figure 4-1: Jemena Gas Pipeline Locations	8
Figure 6-1: Graphical Presentation of Exclusion Zones Around Pipeline	11

List of Tables

Table 1-1: SEARs - Hazards & Risks	1
Table 3-1: Maximum Classes and Quantities of Dangerous Goods Stored & SEPP-RH Screening	5
Table 4-1: Services in Proximity of Development	12
Table 6-1: Pipeline Failure Frequency	18

Abbreviations

Abbreviation	Description
ALARP	As Low As Is Reasonably Practicable
CBD	Central Business District
DGs	Dangerous Goods
DP	Deposited Plan
EGIG	European Gas Pipeline Incident Data Group
LGA	Local Government Area
NBN	National Broadband Network

1.0 Introduction

1.1 Background

This (RCE-24358_GoodmanMarsRd_Pipeline_Final_18Feb26_Revision B - Formal Lodgement) has been prepared by Riskcon Engineering Pty Ltd to accompany a State Significant Development Application (SSDA) for the construction and ongoing operation of a data centre facility at 12 Mars Road, Lane Cove West in the Lane Cove Government Area (LGA). The site is legally described as Lot 22 in Deposited Plan 732062.

This report has been prepared to address the Secretary’s Environmental Assessment Requirements (SEARs) issued for the Project Mars Data Centre Project (SSD-82052708) dated 10th April 2025.

Goodman Property Services (Aust) Pty Ltd (Goodman) has proposed to develop a data centre at their site located at 12 Mars Road, Lane Cove West, NSW. It has been identified that the site may be located within the vicinity of existing high pressure dangerous goods or gas pipelines. In the event the pipelines are located within the construction area of the proposed development, there is a potential that excavation associated with the construction may impact the pipelines causing damage, leaks and potential ignitions of flammable materials.

Due to the location of the development in relation to the underground pipelines, it is necessary to consult with all operators of high-pressure dangerous goods or gas pipelines within or in the vicinity of the development with regards to requirements under Australian Standard AS 2885 Pipelines – Gas and liquid petroleum and to provide sufficient details on how these outcomes will be delivered or implemented.

Riskcon Engineering Pty Ltd (Riskcon) has been commissioned by Goodman to prepare a report assessing the potential impacts on the underground pipelines in support of the development application at 12 Mars Road, Lane Cove West, NSW.

1.2 Objectives

The objectives of the study are to;

- Identify the location of high-pressure gas pipelines within or in the vicinity of the proposed development,
- Where there is potential for impact of the development on the pipelines, determine how the safeguards will meet the requirements of AS 2885 (Ref. [1]),
- Make recommendations for increased safeguards, where required, to ensure the risks are controlled to As Low As Is Reasonably Practicable (ALARP) as required by Industry Specific Secretary’s Environmental Assessment Requirements (SEARs, **Table 1-1**), and
- Report on the findings of the study in support of the development application for the proposed development.

Table 1-1: SEARs - Hazards & Risks

Item	Requirement	Report Section
Hazards and Risks	<ul style="list-style-type: none"> • Where there are dangerous goods and hazardous materials associated with the development provide a preliminary risk screening in accordance with Chapter 3 of SEPP (Resilience and Hazards) 2021. 	Accompanying report

Item	Requirement	Report Section
	<ul style="list-style-type: none"> Where required by SEPP (Resilience and Hazards) 2021, provide a Preliminary Hazard Analysis prepared in accordance with Hazardous Industry Planning Advisory Paper No.6 – Guidelines for Hazard Analysis and Multi-Level Risk Assessment. 	
	<ul style="list-style-type: none"> If the development is adjacent to or on land in a pipeline corridor, report on consultation outcomes with the operator of the pipeline, and prepare a hazard analysis. 	Section 6.0
	<ul style="list-style-type: none"> The EIS must demonstrate the relevant aspects of the FM Global Property Loss Prevention Data Sheet 5-32 – Data Centres and Related Facilities have been considered and could be implemented as part of the development. It must also demonstrate the development would comply with the relevant aspects of the following standards: <ul style="list-style-type: none"> o AS/NZS 4681 – Storage and handling of Class 9 (miscellaneous) dangerous goods and articles o AS IEC 62619 – Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for secondary lithium cells and batteries, for use in industrial applications o AS 1940 – Storage and handling of flammable and combustible liquids. 	Accompanying report

1.3 Scope of Services

The scope of work is for the identification of the high-pressure gas pipeline on or within the vicinity of the proposed development and consult with the operators to ascertain the operators are concerned with the proposed development and the potential risks to the pipeline. The assessment does not include any other sites nor additional work which may be identified in the course of the assessment.

2.0 Methodology

2.1 General Methodology

The methodology used in this assessment is as follows:

- Identify the high-pressure gas pipeline on or within the vicinity of the proposed development using the “Before You Dig Australia” organisation,
- Review the proposed development to identify the potential impacts the development could have on the pipeline to determine the level of threat is posed to the pipeline.
- Contact the pipeline operators and confirm whether there are any risks posed to the pipeline.
- Report on the findings of the assessment including recommendations from operators regarding required safeguards during the development application process.

3.0 Site Description

3.1 Site Location and Layout

The proposed data centre is located at 12 Mars Road, Lane Cove West NSW 2066 which is approximately 9 km northwest of the Sydney Central Business District (CBD). **Figure 3-1** shows the location of the site in relation to the Sydney CBD. Provided in **Figure 3-2** is the layout of the site.

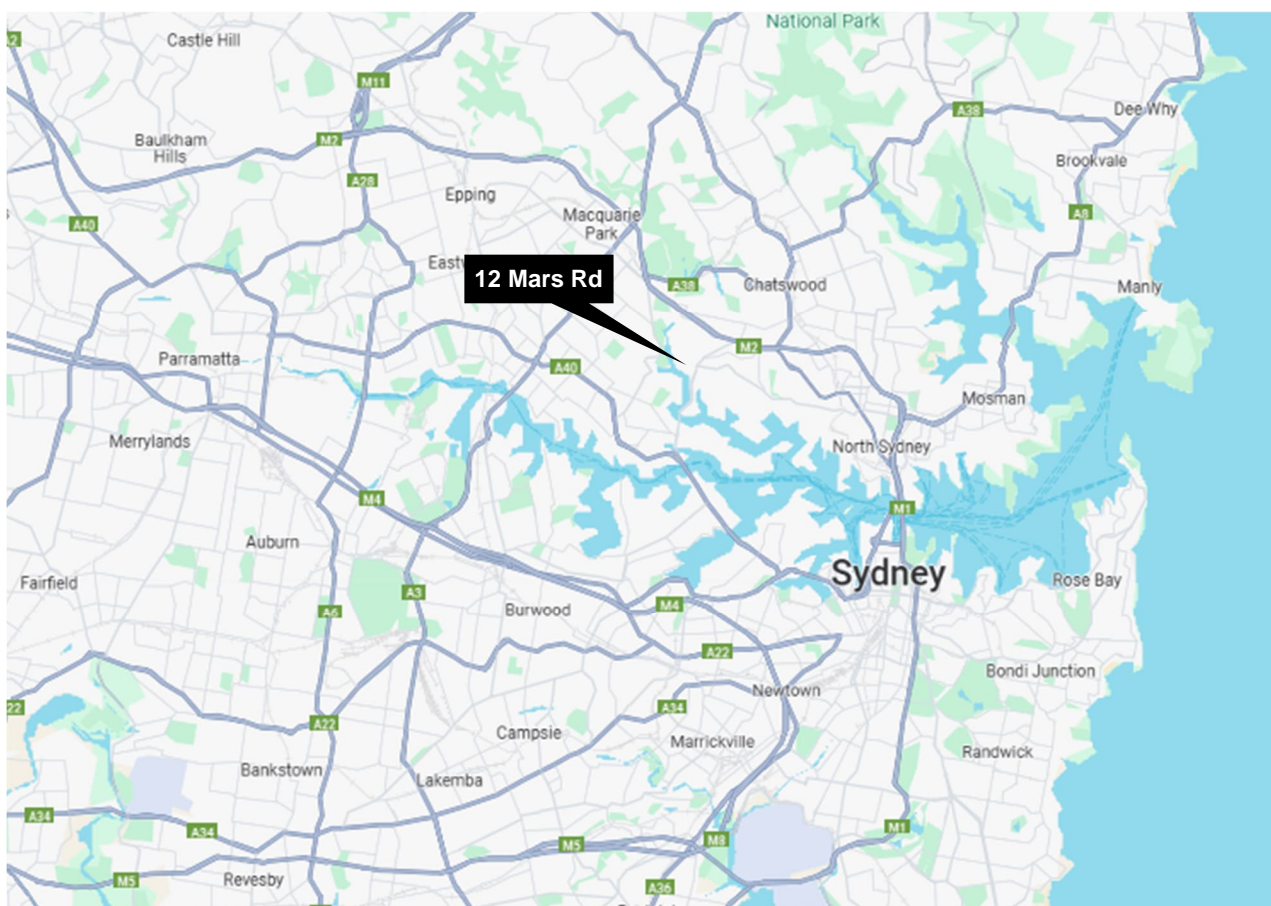


Figure 3-1: Site Location

3.2 Project Description

A State Significant Development Application (SSDA) has been prepared to support a data centre at 12 Mars Road, Lane Cove West. The site area is 33,559m² and is zoned E4 General Industrial.

The proposal will include:

- Site preparation works including demolition, bulk excavation and removal of existing structures on the site, tree and vegetation clearing and bulk earthworks.
- Construction, fit-out and operation of a three-storey data centre building with a total gross floor area of approximately 21,832m² comprising:
 - 24 parking spaces
 - 2 loading dock spaces
 - 2 levels of technical data hall floor space

- 3 level office and amenities building
- Provision of required utilities including:
 - diesel storage tanks
 - water tanks
 - substations on site
- Vehicle and pedestrian access provided via Mars Road
- Associated landscaping and site servicing
- Installation of site services and drainage infrastructure
- A floor space ratio of approximately 0.65:1

3.3 Quantities of Dangerous Goods Stored and Handled & SEPP-RH Screening

The classes and quantities of DGs to be stored at the facility are summarised in **Table 3-1**, alongside the SEPP-RH assessment.

Table 3-1: Maximum Classes and Quantities of Dangerous Goods Stored & SEPP-RH Screening

Class	Packing Group (PG)	Description	Quantity (L or kg)	SEPP-RH Applicable? (Y/N)
9	n/a	Li-ion batteries	170,000 kg	N
C1	n/a	Diesel	1,054,000 L	N
C2	n/a	Transformer oils	50,000 L	N

Note that the classes stored (9 and combustible liquids) are not applicable to the SEPP-RH risk screening process (Ref. [2]), therefore the site does not require a PHA.



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REFER TO ARCHITECT PRIOR TO COMMENCEMENT OF THE WORK. DO
NOT SCALE DRAWINGS MANUALLY OR ELECTRONICALLY.

ALL WORKS ARE TO BE IN ACCORDANCE WITH NATIONAL
CONSTRUCTION CODE AND RELEVANT AUSTRALIAN STANDARDS.

NORTH POINT



REV	DESCRIPTION OF CHANGE	DATE	CHECKED	ISSUED
A	ISSUE FOR IGA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

LEGEND:

- BOUNDARY
- DCP LANDSCAPE SETBACK
- DCP SETBACK
- SECURITY FENCE
- PROPOSED LANDSCAPE
- PROPOSED EGRESS PATHWAY
- EXISTING TREES RETAINED
- PROPOSED TREES

CLIENT



PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW
2066

DRAWING TITLE
SITE PLAN

SCALE
1:500 @ A1

DRAWING NUMBER
MAR-AR-DRG-11003

PROJECT STATUS
SSDA APPLICATION

PROJECT NUMBER
10417434

ISSUE
B

Approved by: HDR Pty Ltd, Goodman Mars Rd, Lane Cove West NSW 2066



Figure 3-2: Site Layout

4.0 High Pressure Dangerous Goods or Gas Pipeline Review

4.1 High Pressure Dangerous Goods or Gas Pipeline Identification

In order to identify whether there are any high-pressure dangerous goods or gas pipelines in the vicinity of the Development, the “Before You Dig Australia” organisation was contacted. An inquiry was lodged with this organisation who replied with the details listed below.

- 210 kPa Medium Pressure Gas Main operated by Jemena; and
- 1050 kPa High Pressure Gas Main operated by Jemena.

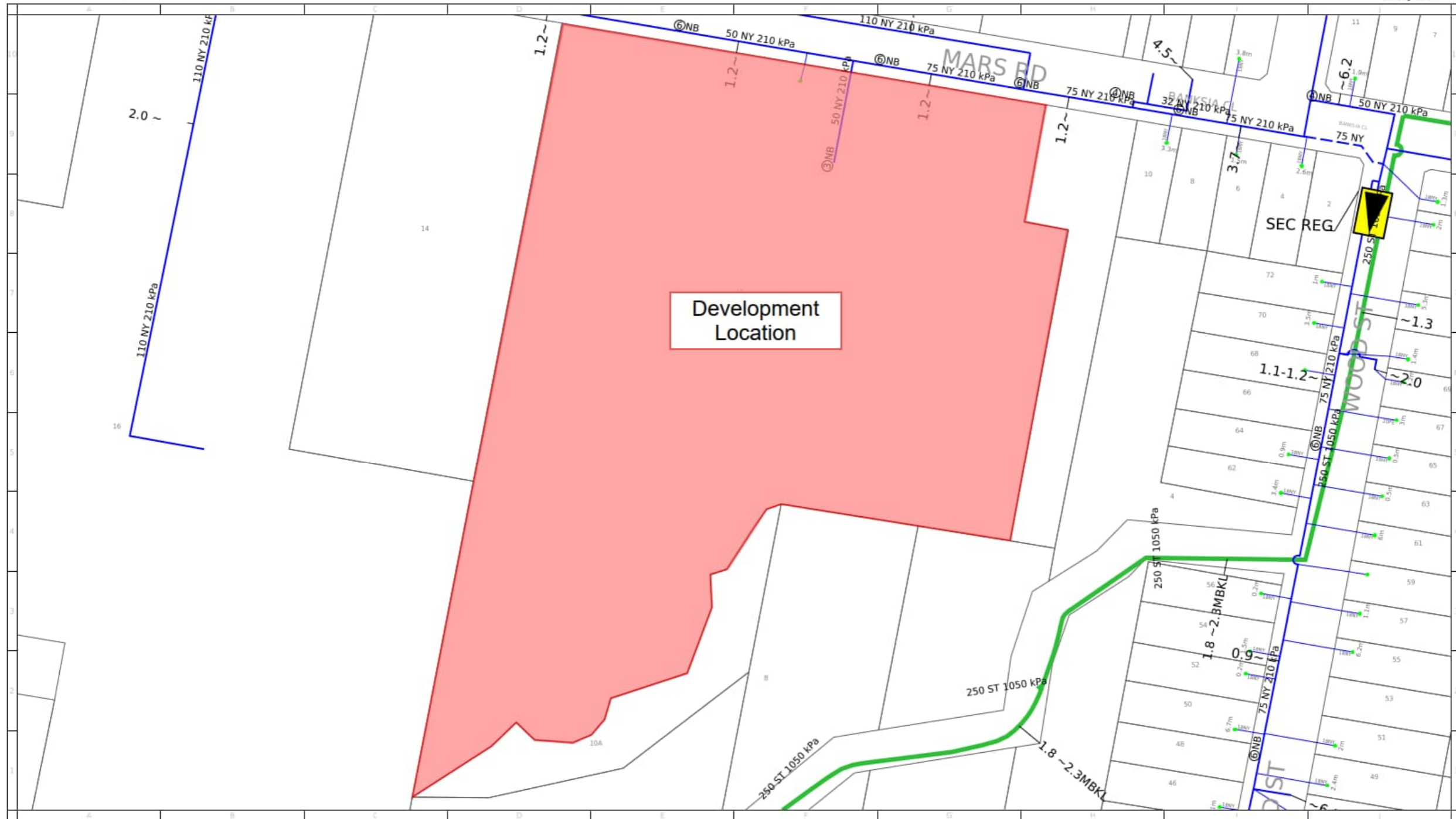
Table 4-1 identifies services that are located in the vicinity of the property.

Table 4-1: Services in Proximity of Development

Service	Discussion
Electricity	The operator is Ausgrid, who supply electrical services to the site. Electricity is not classified as a high pressure dangerous good or gas pipeline; hence, there is no further assessment for this service.
Gas Pipeline	The Jemena medium pressure gas pipeline (BYDA Sequence No: 245849360) 210 kPa was identified to be located along Mars Rd, and the high pressure gas pipeline 1050 kPa was identified to run along the south of the proposed development. The operator of the pipelines, Jemena, was contacted regarding the pipeline locations in relation to the proposed development and information regarding the risks associated with the proposed development. A detailed review of the pipelines has been performed in Section 6.2 .
Communications	The National Broadband Network (NBN) is installed in the area where the proposed development is located. The NBN is not-classified as a high pressure dangerous good or gas pipeline, hence, there is no further assessment for this service.
Water	Water services are supplied to the site and are located in the area where the proposed development is located. Water is not-classified as a high pressure dangerous good or gas pipeline, hence, there is no further assessment for this service.
Communications	Telstra telephone network is installed in the area where the proposed development is located. The telephone is not-classified as a high pressure dangerous good or gas pipeline, hence, there is no further assessment for this service.

BYDA Authority: Jemena Gas Networks (NSW)

BYDA Location: 12 Mars Rd Lane Cove West NSW, 2066





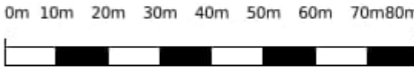
	<p>For legend details, please refer to the Coversheet attachment provided as part of this BYDA response.</p>	 <p>Scale: 1:2000</p>	<p>Issue Date: 10/10/2024 BYDA Seq No: 245849360 BYDA Job No: 37789627</p> 
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Figure 4-1: Jemena Gas Pipeline Locations

5.0 Hazard Identification

5.1 Introduction

It is necessary to understand the threats and risks posed by the development on the pipeline and the subsequent effects should the gas pipeline become damaged. A detailed hazard identification table has been prepared in **Appendix A** which has been discussed in further detail in the following section.

5.2 Gas Pipelines

A review of the surrounding area indicates there are two buried gas pipelines, one (medium pressure 210 kPa) running along Mars Rd and into the development area, and the other (high pressure 1050 kPa) to the south of the proposed development. The high pressure 1050 kPa pipeline is well outside of the development area and is not expected to be impacted during construction activities. The medium pressure line both runs along the road and has a section that branches off into the development area. The section in the road may only be impacted if works are performed within the road reserve (e.g. road widening, slip lane, or driveway, where directly over the gas main). Excavation work around the pipeline within the development area is expected due to the construction of access roads and car parks, in addition to the substation proposed for the northeast corner of the site adjacent to the site entrance. These excavation procedures are generally surface level and do not require depths greater than 2 m at the site boundary. Therefore, the risk of the gas pipeline being disturbed and damaged is low and spontaneous failure of the pipeline is an incredibly unlikely event.

Notwithstanding this, the pipelines have several typical protection systems to protect it in the event that excavation work is required. Typical protection systems around pipelines include “dial before you dig” to identify the location of pipelines, marker signs and marker tape, buried pipeline such that mechanical excavation can’t impact the pipeline without multiple actions, restrictions on mechanical works within 3 m of either pipeline. A Jemena standby is also to be present during all works within 3 m of the pipeline.

The location of the pipelines is already known; hence, excavation work is to be planned to avoid impacting the pipeline. In the event of a site error resulting in excavation along the pipelines, the marker tape should be identified prior to impact; however, this may only be the case if the operator is aware of what the marker tape means. It is noted that such an activity would only occur with the presence of a representative of the gas pipeline. Assuming, the protection systems work as intended, the potential damage to the gas pipeline should be minimised preventing damage and potential incident escalation.

It is noted that the protection of the gas pipeline relies on personnel working in the area to be aware of the gas pipeline and the protections associated with it. Therefore, to improve site personnel knowledge, the following recommendations have been made:

- The site induction shall include information regarding the gas pipeline including location and protections to identify the gas pipeline (i.e., marker tape, etc.).
- All personnel working at the site shall be inducted prior to commencing any work.
- Appropriate markings shall be provided along the length of the gas pipeline as required to minimise the potential for unauthorised works occurring within the vicinity of the gas pipeline, in conjunction with the Site Induction and relevant site-specific construction management plans.

- Any work within the vicinity of the pipeline shall be submitted to operators and confirmed prior to commencement.

Incorporation of these recommendations will ensure that personnel are aware of the pipeline location and protections, reducing the risk of accidental damage during excavations to a low level. Notwithstanding this, this incident has been carried forward for further analysis to conceptually understand the risk posed by the pipeline on the development and vice versa.

6.0 Pipeline Assessments

6.1 Introduction

The purpose of this assessment is to review the potential impact of the development on the pipeline as required by Planning Circular PS 18-010 (Ref. [3]). Provided in the following section is an assessment of the pipeline and how various failure modes may occur which are reviewed against the development to confirm whether the proposal adequately addresses these risks to the pipeline.

6.2 High Pressure Natural Gas Assessment

An additional analysis has been conducted regarding the types of incidents and events that may impact a buried gas pipeline in order to confirm such incidents and events, as a result of the proposed Development, cannot cause impact to the pipeline.

The European Gas Pipeline Incident Data Group (EGIG) collects and publishes a range of data in relation to high pressure gas pipelines. The EGIG comprises a group of major gas pipeline operators and related organisations in Europe and has collected data in relation to gas pipelines (operations, failures, etc.) over a 50-year period with over 4 million km.yr exposure to operation of gas pipelines. Hence, based on the vast experience available within this organisation, incidents that may affect the Jemena pipeline from the proposed Development have been selected for review.

The EGIG (Ref. [4]) reports on the types of events that result in pipeline failure leading to loss of gas containment from the pipeline. The list of events have been extracted from the EGIG report (Ref. [4]) as follows:

- External interference
- Hot-tap by error
- Corrosion
- Ground movement
- Construction defect
- Material defect
- Other incidents

Each of these have been assessed in further detail in the following sections.

6.2.1 External Interference

External interference is the primary source of damage to pipelines which result in fire or explosion. Therefore, if damage can be prevented the risk of a pipeline loss of containment is drastically

reduced. While excavation along or near the pipeline is not expected, in the event that it is, the following restrictions shall be imposed.

- Pipeline is to be marked on site by a representative of the pipeline operator.
- No work is to be performed within 3 m of pipeline without a representative of the pipeline operator present.
- No mechanical equipment is to be used for excavation within one (1) metre of the pipeline in any radial direction even after the pipeline location has been visually prove; unless under explicit direction from a representative of the pipeline operator.
- No mechanical works are allowed within 600 mm in any radial direction of the pipeline visually proving the pipeline location; excavation is to be conducted with hand tools only until the pipeline location has been visually proven.
- No mechanical equipment is to be used for excavation within 300 mm in any radial direction; excavation is to be conducted with hand tools only.
- For backfill, suitable padding material (screened spoil or clean sand with particles less than 2.8 mm in size) is required for at least 150 mm around the pipe.

The above restrictions are shown graphically in **Figure 6-1**.

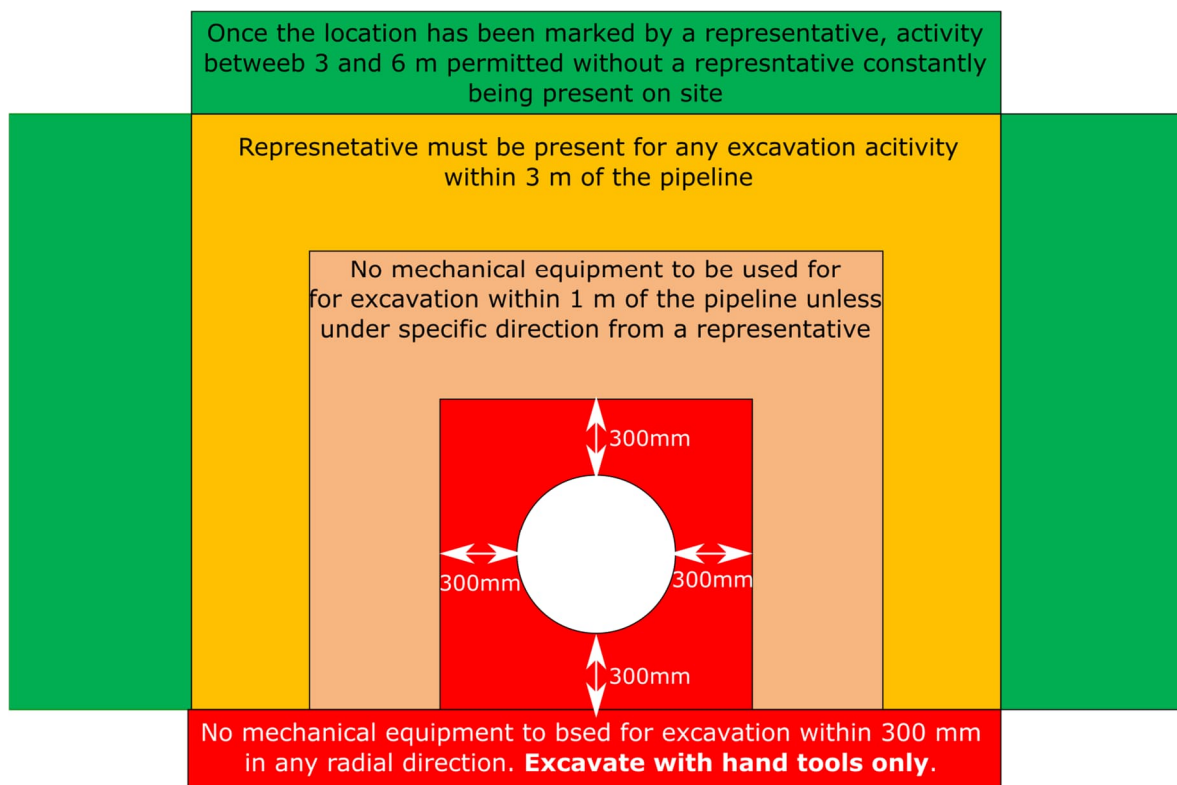


Figure 6-1: Graphical Presentation of Exclusion Zones Around Pipeline

6.2.2 Hot-Tap by Error

Work on adjacent pipelines in the same pipeline corridor resulting in identification of the wrong pipeline and hot tap to the gas pipeline. The development will not access the pipeline, nor are there adjacent pipelines that would require work; hence, hot-tap errors are not expected to occur.

6.2.3 Corrosion

External or internal corrosion resulting in loss of pipeline thickness can ultimately lead to pipeline failure. The construction operations at the Development will have no impact on pipeline internal/external corrosion. Notwithstanding this, it is known that standard procedure for pipelines involves 'pigging' the pipeline internally with an intelligent "pig" that performs corrosion detection along with a number of other condition monitoring functions.

6.2.4 Ground Movement

Subsidence as a result of earthquake or excavations close by causing ground collapse around the pipeline can result in pipeline failure and loss of containment. Earthquakes may have an impact on the pipeline; however, the proposed Development has no influence on earthquake in the Latrobe area.

Excavation in close proximity to the pipeline may lead to land subsidence adjacent to the pipeline resulting in exposure of the pipeline and loss of pipeline support. A review of the proposed construction activities at the Development indicates that excavation work is not intended to occur; hence, subsidence from adjacent excavations are not expected.

As noted, should excavations be required, the restrictions discussed in **Section 6.2.1** would be imposed which would dramatically reduce the potential impact to the pipeline. Therefore, ground movement is not expected to be an issue for the development.

6.2.5 Construction Defect

Incorrect weld installation (weld failure), poor ground preparation (i.e. pipeline bed contains rocks which damage the external corrosion protection) or poor overfill preparation (rocks in the overfill impacting the external corrosion protection). The proposed Development has no influence over construction defects that may have occurred when the pipeline was constructed.

6.2.6 Material Defect

Incorrect pipeline material selected for the specific application or poor material qualities not detected at time of pipeline section manufacture (i.e. poor-quality metallurgical assurance). The proposed Development has no influence over pipeline material selection or manufacture that may have occurred when the pipeline was constructed.

6.2.7 Lightning

Lightning impacts to the pipeline causing materials failure or maintenance induced failures (e.g. work on the pipeline leads to loss of containment during the project or after work is complete due to failure to complete the work correctly). The proposed Development has no influence over lightning impact or maintenance activities associated with the pipeline.

6.2.8 Fatality Risk

As the proposed development will increase the density in the area in proximity of the pipeline it is necessary to understand the risk that is posed to the personnel from the development in accordance with Planning Circular PS 18-010 (Ref. [3]). The risk posed from the pipeline to the development involves loss of containment from the high-pressure pipeline that may result in several physical effects depending on the direction and / or ignition probabilities. The following incidents may occur in the event of a loss of containment:

- Jet fire
- Flash fire
- Explosion

Each of these have been discussed further in the following subsections.

6.2.8.1 Jet Fire

Jet fires occur when a high-pressure gas is released, and it is ignited immediately or following a delay provided that the release is continuing resulting in a jet flame. A jet fire is considered to be a credible scenario from the pipeline within the vicinity of the development. It is noted that only larger releases (i.e. >50 mm) would be expected to result in sufficient consequence impact distances to result in injury or fatality at the proposed development.

6.2.8.2 Flash Fire

Flash fires occur when a gas release occurs and is not immediately ignited resulting in a flammable gas dispersion which if ignited will burn back through the flammable atmosphere back to the release point. A flash fire is considered to be a credible scenario from the pipeline within the vicinity of the development. It is noted that only larger releases (i.e. >50 mm) would be expected to result in sufficient consequence impact distances to result in injury or fatality at the proposed development.

6.2.8.3 Explosion

An explosion occurs when a gas release and dispersion occurs where there is sufficient confinement such that ignition of the flammable atmosphere results in an acceleration of the flame front through the atmosphere to the point of detonation. That area around the gas pipeline is open roadway which provides minimal confinement; hence, an explosion is considered to be an unlikely outcome following a release from the pipeline.

6.2.8.4 Incident Frequency

As noted, only larger releases exceeding 50 mm are considered to result in sufficient gas release such that the consequences would impact personnel in the proposed development to the point of injury or fatality. Provided in **Table 6-1** is a summary of the failure frequency of underground gas pipelines (Ref. [5]).

Table 6-1: Pipeline Failure Frequency

Hole Size (mm)	Failure Frequency (km ⁻¹ .y ⁻¹)
50	2.96x10 ⁻⁵
100	1.19x10 ⁻⁵
Rupture	5.93x10 ⁻⁶
Total	47.4x10⁻⁶

Approximately 200 m of pipeline is exposed to the North of the development and enters the development area; however, to ensure any incidents that occur downstream and upstream of the facility are captured the distance is taken as 300 m. Therefore, the incident frequency of release becomes $47.4 \times 10^{-6} \times 0.3 = 1.4 \times 10^{-5}$ p.a.

If ignition is assumed to be 100% and that injury or fatality occurs 100% of the time, then the frequency of either injury or fatality becomes 1.4×10^{-5} p.a. The acceptable fatality and injury risk

criteria at industrial developments is 50×10^{-6} p.a.; hence, this would be below the acceptable criteria and would be permissible.

7.0 Conclusion and Recommendations

7.1 Conclusions

The high-pressure dangerous goods and gas pipeline (the pipelines) review and consultation study conducted for the proposed Development at 12 Mars Rd, Lane Cove West, NSW has been assessed for the potential impact to the pipelines in the vicinity of the proposed Development.

It was identified that there is one high pressure and one medium pressure dangerous goods or gas pipelines in the area which may be impacted by the proposed Development, this is:

- Jemena gas pipeline (BYDA Sequence No: 245849360) 1050 kPa, south of the development.
- Jemena gas pipeline (BYDA Sequence No: 245849360) 210 kPa, along Mars Rd and within the north end of the development area.

The 210 kPa medium pressure pipeline runs along Mars Rd and enters the development area. Consultation was held with Jemena which indicated that provided there are no deep excavations along the site boundary or in the location of the pipeline of the site, there would be no impact to the pipeline. Subsequently, the developer has catered their design around the site to eliminate deep excavations within proximity of the site boundary such that no impact would occur near the pipeline.

It is therefore concluded that provided the recommendations are adhered to, there will be no impact to the high-pressure dangerous goods or gas pipelines in the area from the development at 12 Mars Rd, Lane Cove West, NSW.

7.2 Recommendations

Based on the discussion and assessment conducted within this report, the following recommendations have been made:

- The development at 12 Mars Rd, Lane Cove West, NSW shall be designed such that deep excavations within proximity of the northern site boundary and area of the 210 kPa pipeline on site are eliminated.
- Where it is not possible to eliminate deep excavations within proximity to pipelines, further consultation with Jemena shall occur and any works within 3 m of the pipelines shall have a Jemena standby present.
- Notwithstanding the above, Jemena shall be consulted to communicate any changes to the design and the proposed construction methodology to ensure no impact to the pipeline will occur.

8.0 References

- [1] Standards Australia, "AS 2885 Series – Pipelines – Gas and Liquid Petroleum," Standards Australia, Sydney.
- [2] Department of Planning, "Applying SEPP 33," Department of Planning, Sydney, 2011.
- [3] NSW Government, "Planning Circular PS 18-010 - Development adjacent to high pressure," NSW Government, Sydney, 2018.
- [4] European Gas Pipeline Incident Data Group, "10th Report of the European Gas Pipeline Incident Data Group (period 1970 – 2016), Document No. VA 17.R.0395," European Gas Pipeline Incident Data Group, March 2018.
- [5] R. McConnel and J. Haswell, "UKOPA Pipeline Product Loss Incidents," UKOPA, 2011.

Appendix A

Hazard Identification Table

B1. Hazard Identification Table

Area/Operation	Hazard Cause	Hazard Consequence	Safeguards
Gas pipeline	<ul style="list-style-type: none"> • Damage to pipeline during construction / excavation • Fire from building impacting pipeline 	<ul style="list-style-type: none"> • Failure of pipeline and loss of containment and fire, vapour cloud explosion, jet fire, flash fire 	<ul style="list-style-type: none"> • Underground pipeline protects against damage / radiant heat • Marker tape, marker signs • Before You Dig Australia • Known location of pipeline • Deep trenching to avoid impact AS 2885 • Yellow jacketed pipeline (anti-corrosion and impact protection) • Bed of sand in the trench to prevent rocks • Representative present during any works within 3 m of pipelines

Appendix B

Details of Correspondence

B1. Pipeline Operator Correspondence

From: dbyd@1100.com.au
Sent: Friday, 11 October 2024 1:04 AM
To: Renton Parker
Subject: BYDA JOB: 37789627 - 12 Mars Rd
Attachments: 37789627.PDF



THE BYDA SERVICE HAS CHANGED

You can now view and download utility responses online in the BYDA service, instead of receiving individual emails from the utility owners.

If you still need to receive the individual emails, check out this article for instructions on setting your preferences.

BYDA Job 37789627. 12 Mars Rd.

Thank you for lodging a Before You Dig enquiry and understanding the importance of safe excavation and infrastructure protection.

Attached is your Before You Dig confirmation sheet. Below is a direct link to view asset owner responses.

Before reviewing the responses from our asset owners, please consider the following important points:

- Read both pages of the confirmation sheet carefully and check that all details of your enquiry are correct
- Do not proceed with your project until you have received a response from all asset owners listed on your confirmation
- Please ensure you review and understand all information sent from asset owners, including plans and accompanying documents
- Please remember that the **plans are indicative only** unless stated otherwise

- Safe Excavation is your responsibility. Always follow the 5Ps of Safe Excavation. You will find them on page 2 of the attached document

You can now access your enquiry online, and view the asset owners' responses using this direct link

[View responses](#)

The Team at **Before You Dig Australia** thank you for your commitment to digging safely and helping us achieve Zero Damage – Zero Harm. [Learn more about the BYDA service](#) .

We offer free training sessions: Awareness (Damage Prevention) and Plan Reading. [Book a free BYDA session](#).

Remember: Check that the location of the dig site is correct. If not, you must submit a new enquiry. If the scope of works change or plan validity dates expire, you must submit a new enquiry. Do NOT dig without plans. Safe excavation is your responsibility. If you don't understand the plans or how to proceed safely, please contact the relevant asset owners.

Please do not reply to this email , it was automatically generated and replies are not monitored. Call 1100 to advise BYDA of any issues with this enquiry.



HIGH PRESSURE - ASSETS AFFECTED

This information is only valid for 28 days from the date of issue

There are **High Pressure Gas Mains and Services** in the vicinity of your intended work, as generally illustrated on the attached map. There may also be other mains or services at the location. For an explanation of the map, please see the legend attachment and read the Important Information.

Excavation Guidelines

Prior to any excavations in this area, you **must** contact the High Pressure Response Coordinator to arrange a survey via: <http://mygasservices.jemena.com.au> (High Pressure Works / High Pressure Standby)

Please note that a duty of care exists to ensure gas assets are not compromised or damaged. Jemena's expectation is that the excavator operator holds a current Verification of Competency (VOC) or equivalent for the machine to be used near Jemena High Pressure Gas Assets.

Further standby enquiries can be directed to the High Pressure Coordinator via:

E: infrastructureprotection@jemena.com.au or **PH:** 1300 665 380.

Appointments will be coordinated with availability of a Jemena Representative to arrange a survey. For all works in the vicinity of High Pressure Gas Mains you must arrange for a Jemena Representative to attend and supervise all excavations. Charges may apply.

Important Information:

1. The enclosed plans have been prepared solely for the use of Jemena Gas Networks (NSW) Ltd and Jemena Asset Management Pty Ltd (together "Jemena") and show the position of Jemena's underground gas mains and installations in public gazetted roads. If the enclosed plans show gas assets located on private property or other third party property, these are approximate locations.
2. There may be underground assets owned by other utilities in the vicinity of your work and it is your responsibility to identify and locate such assets.
3. The plans may show the position of underground mains and installations relative to fences, buildings and other structures – as they existed at the time the assets were installed and may not have been updated to take account of any subsequent change in the location or style of those features. Depth of underground assets may also vary as a result of changes to road, footpath or surface levels subsequent to installation.
4. While Jemena takes all reasonable care to ensure the accuracy and completeness of the information provided, it makes no warranty as to the accuracy or completeness of the enclosed plans and does not assume any duty of care to you nor any responsibility for the accuracy, adequacy, suitability or completeness of the plans or for any error or omission. It is intended to be indicative only and must not be solely relied upon when undertaking underground works.
5. Except to the extent that liability may not be capable of being lawfully excluded, Jemena, its employees, agents, officers and contractors will not be liable to any person for loss or damage (including indirect and consequential loss or damage) which may be suffered or incurred in connection with the provision of this information.
6. Persons excavating or carrying out other earthworks will be held responsible for any damage caused to Jemena's underground mains, service lines and equipment. In accordance with the *Work Near Underground Assets – Guide* published in 2007 by Work Cover Authority*, Jemena recommends that you carry out potholing by hand to accurately confirm the location of gas mains and installation prior to commencing excavations.

Network Mains

- Proposed New Main (coloured as per kPa)
- Proposed Isolate (coloured as per kPa)
- Unknown kPa
- 2kPa Low Pressure gas main
- 7kPa Low Pressure gas main
- 30kPa Medium pressure gas main
- 100kPa Medium Pressure gas main
- 210kPa Medium Pressure gas main
- 300kPa Medium Pressure gas main
- 400kPa Medium Pressure gas main
- 1050kPa High Pressure gas main
- 3500kPa High Pressure gas main
- 7000kPa High Pressure gas main
- >7000kPa Transmission pipeline
- Isolated Service - Former Med/High Pressure
- Isolated Steel Main - **Treat as High Pressure**
- Conduit or Casing
100 PVC Size & Material (see conduit material codes)
- Critical Main - **Treat as High Pressure**
(Main coloured as per kPa)
- Exposed Main section
EXPOSED
- Shallow Main section: see Protection Code below, no code assume no protection
SHALLOW-SP

SP	Steel Plate	CE	Concrete Encased
PP	PE Plate	UNK	Unknown Type
CS	Concrete Slab		
- Warning** - Blue Jacket Coated gas main
(Main coloured and styled as per kPa)

Gas Services

- Gas service – coloured by kPa
- Serviced Site indicator

Jemena has created service pipe features programmatically based on known pipe characteristics and cartographic principles. They may provide guidance to identify assets whilst in the field in addition to existing processes.

Network Assets

- Siphon
- Network Valve
- High Pressure Main Line Valve ($\geq 1050\text{kPa}$)
- High Pressure Automatic Line Break Valve ($> 1050\text{kPa}$)
- Boundary Regulator Set ($\leq 1050\text{kPa}$)
- Distribution Regulator Set ($\leq 1050\text{kPa}$)
- High Pressure Regulating Station ($> 1050\text{kPa}$)

Annotations

Pipe and Conduit Material Codes

NY	Nylon	NB	Nominal Bore – Cast Iron
PE	Polyethylene	ST	Steel
P/PL	Plastic (undefined)	C/CO	Copper
PVC	Polyvinyl Chloride		

Pipe code combinations and dimension references

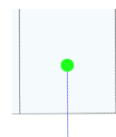
- 6 NB 50MM NY** 50mm Nylon main inserted into 6 inch (Nominal Bore) Cast Iron pipe
- 50MM 32MM NY** 32mm Nylon main inserted into 50mm Steel pipe

~1.5 Distance (in metres) of main from Boundary Line (MBL)

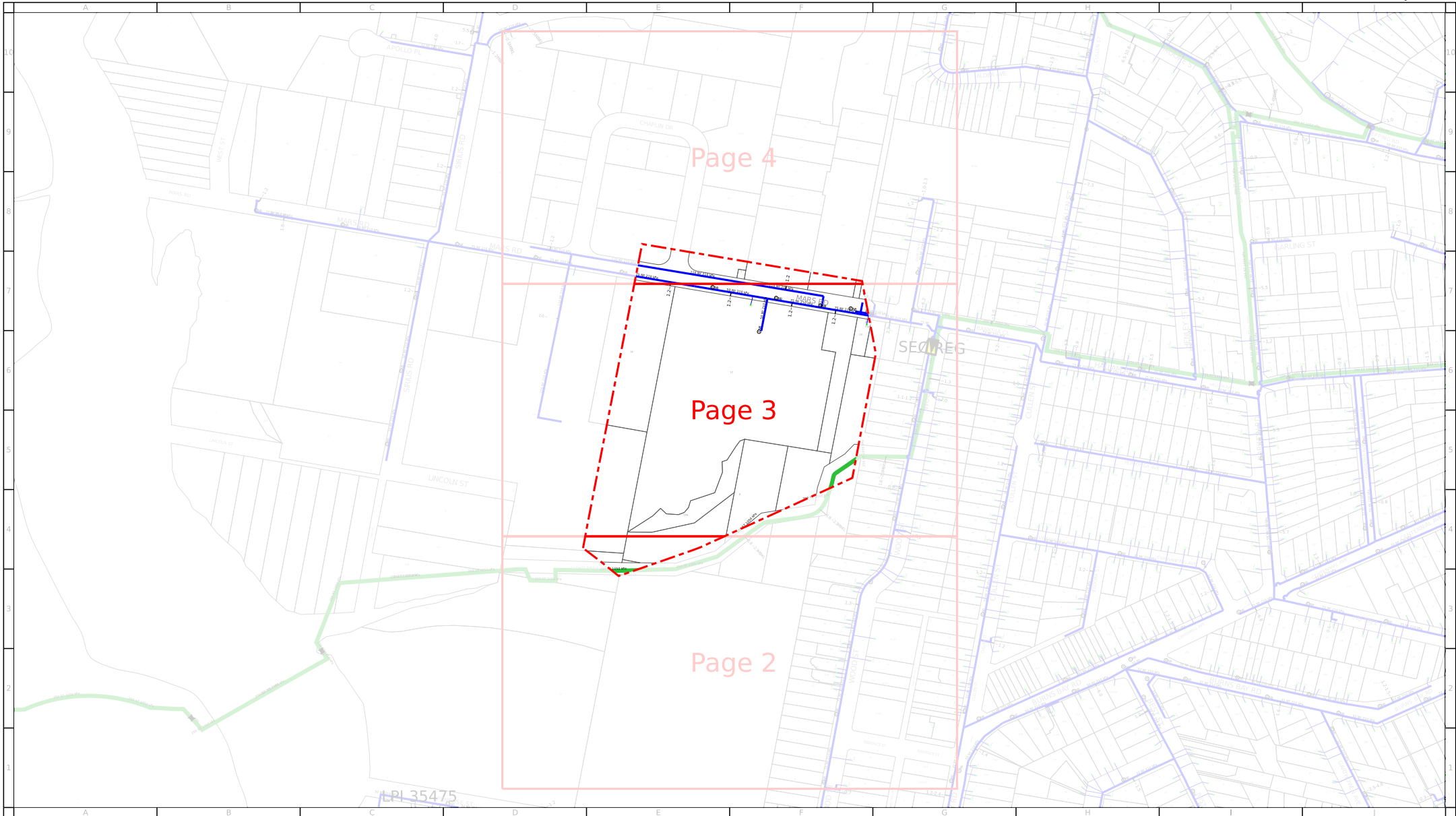
MBK	Distance in Metres Back of Kerb
MKL	Distance in Metres from Kerb Line
MEBL	Distance in Metres from Eastern Boundary Line (North/South/West)
MCL	Distance in Metres from Centre Line of Road
MFL	Distance in Metres from Fence Line



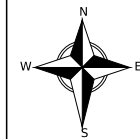
Distance (in metres) of service from side Boundary where the service pipe crosses from the road reserve into the private lot
Service placed towards left or right boundary
Service pipe size & material where known



For connected sites with insufficient asset details, service is shown down the centre of the lot with no attributes plotted



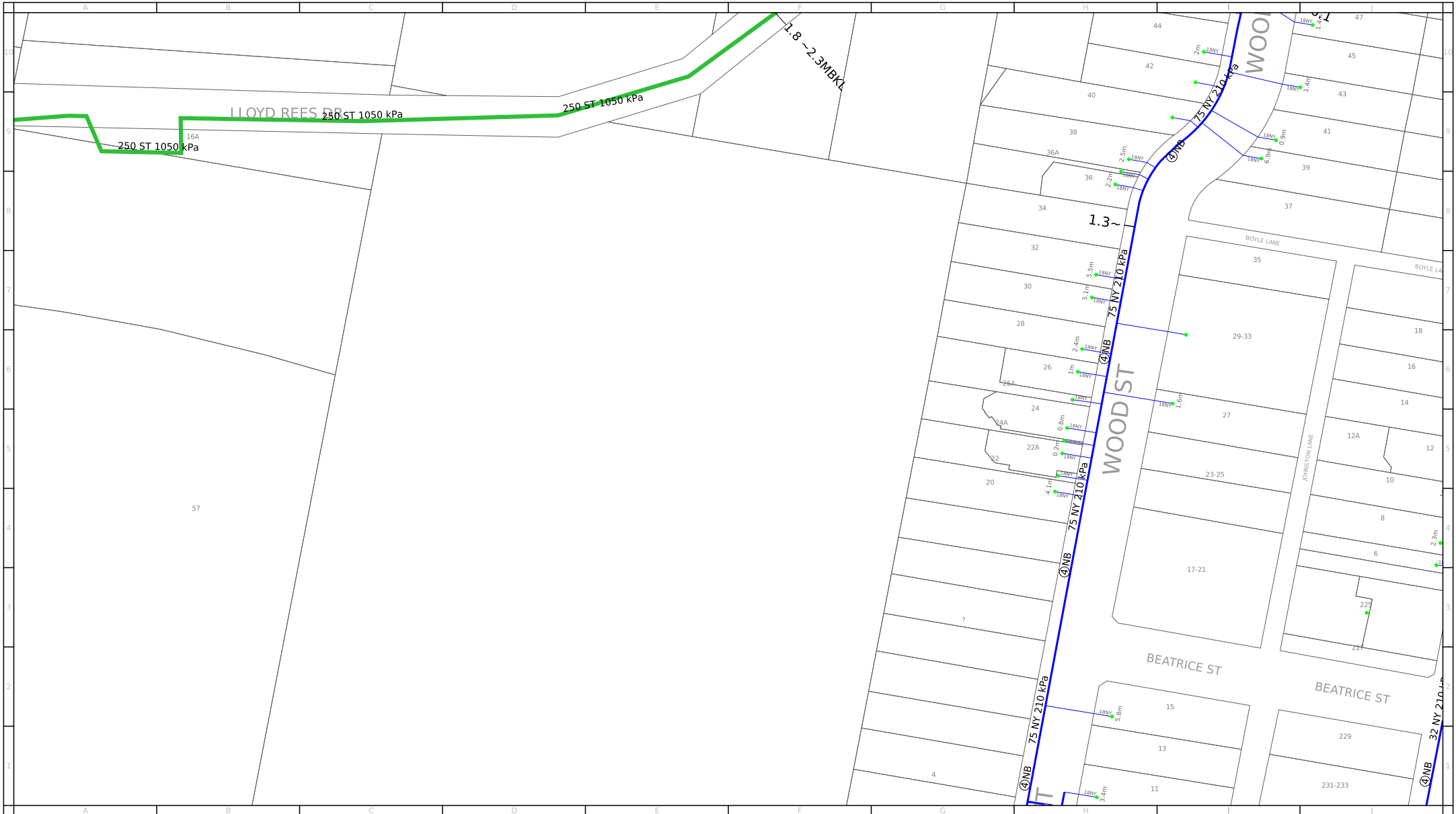
For legend details, please refer to the Coversheet attachment provided as part of this BYDA response.



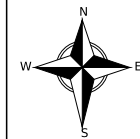
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Issue Date: 10/10/2024
 BYDA Seq No: 245849360
 BYDA Job No: 37789627
 Overview Page:

WARNING: This is a representation of Jemena Gas Networks underground assets only and may not indicate all assets in the area. It must not be used for the purpose of exact asset location in order to undertake any type of excavation. Please read all conditions and information on the attached information sheet. This extract is subject to those conditions. The information contained on this plan is only valid for 28 days from the date of issue.



For legend details, please refer to the Coversheet attachment provided as part of this BYDA response.



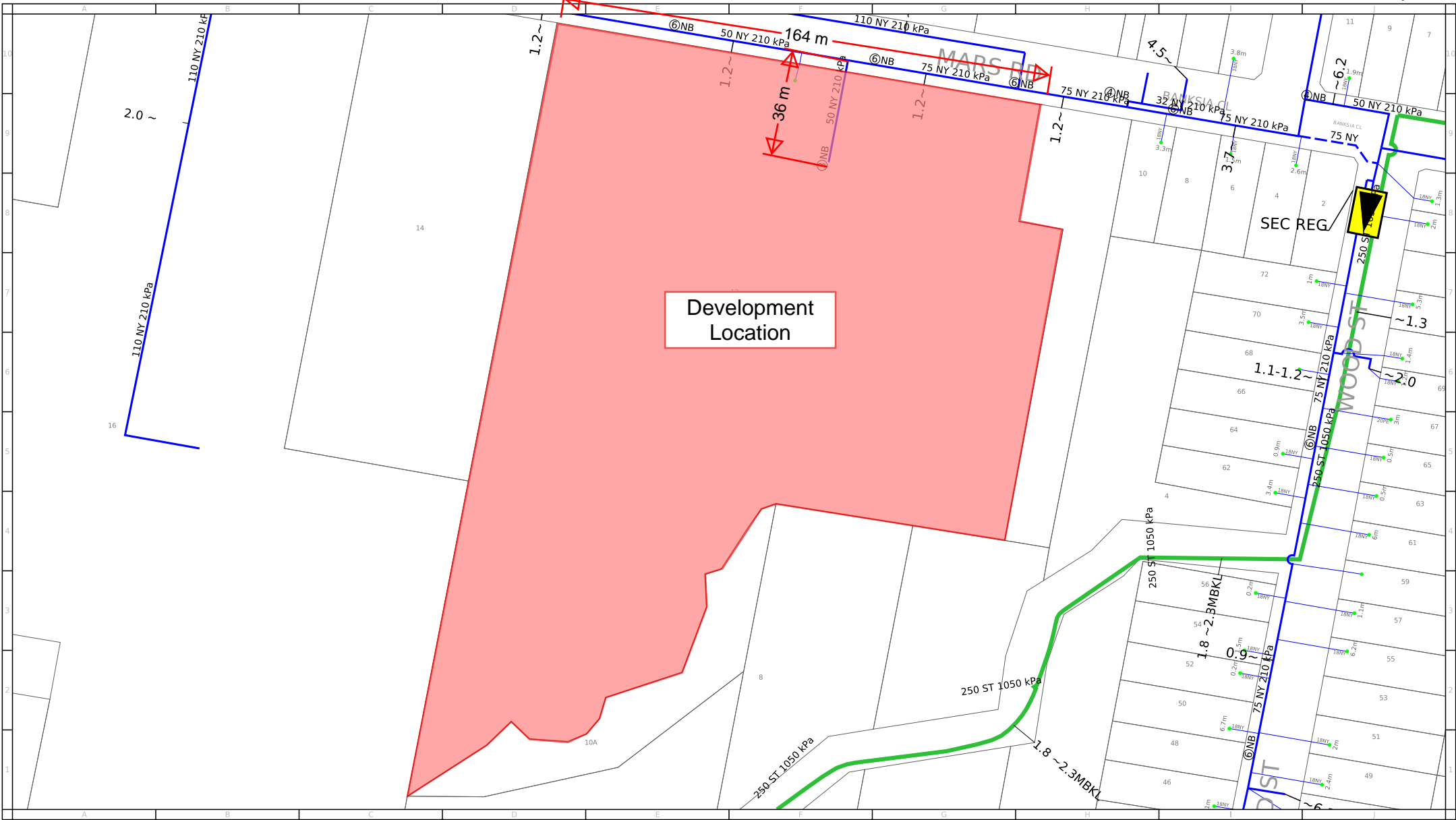
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Issue Date: 10/10/2024
 BYDA Seq No: 245849360
 BYDA Job No: 37789627

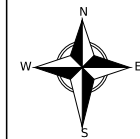
0m 10m 20m 30m 40m 50m 60m 70m 80m



WARNING: This is a representation of Jemena Gas Networks underground assets only and may not indicate all assets in the area. It must not be used for the purpose of exact asset location in order to undertake any type of excavation. This plan is diagrammatic only, and distances scaled from this plan may not be accurate. Please read all conditions and information on the attached information sheet. This extract is subject to those conditions. The information contained on this plan is only valid for 28 days from the date of issue.



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Scale: 1:2000

Issue Date: 10/10/2024
 BYDA Seq No: 245849360
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0m 10m 20m 30m 40m 50m 60m 70m 80m



WARNING: This is a representation of Jemena Gas Networks underground assets only and may not indicate all assets in the area. It must not be used for the purpose of exact asset location in order to undertake any type of excavation. This plan is diagrammatic only, and distances scaled from this plan may not be accurate. Please read all conditions and information on the attached information sheet. This extract is subject to those conditions. The information contained on this plan is only valid for 28 days from the date of issue.

