Information sheet for environmental audits and preliminary risk screen assessments (PRSAs)

Publication 2009 June 2021

Victoria's audit system

An environmental audit system has operated in Victoria since 1989. The *Environment Protection Act 2017* (the Act) provides for the appointment of environmental auditors. It also provides for Environment Protection Authority (EPA or the Authority) to have a system of preliminary risk screen assessments (PRSAs) and environmental audits. These are used in the planning, approval, regulation and management of activities, and in protection of human health and the environment.

Under the Act, the functions of an environmental auditor include to:

- conduct PRSAs and environmental audits
- prepare and issue PRSA statements and reports, and environmental audit statements and reports.

The purpose of a PRSA is to:

- assess the likelihood of the presence of contaminated land
- determine if an environmental audit is required
- recommend a scope for the environmental audit if an environmental audit is required.

The purpose of an environmental audit is to:

- assess the nature and extent of the risk of harm to human health or the environment from contaminated land, waste, pollution, or any activity
- recommend measures to manage the risk of harm to human health or the environment from contaminated land, waste, pollution, or any activity
- make recommendations to manage any contaminated land, waste, pollution or activity.

Upon completion, all PRSAs and environmental audits require preparation of either a PRSA statement, accompanied by a PRSA report, or an environmental audit statement, accompanied by an environmental audit report.

A person may engage an environmental auditor to conduct a PRSA or an environmental audit.

EPA administers the environmental audit system and ensures an acceptable quality of environmental auditing is maintained. This is achieved by assessing auditor applications and conducting a quality assurance program. These measures ensure that PRSAs and environmental audits that environmental auditors undertake are completed in accordance with the relevant sections of the Act or any other Act, and with the guidelines the Authority or other government agencies have published.

Environment Protection Authority Victoria
GPO BOX 4395 Melbourne VIC 3001
1300 372 842 (1300 EPA VIC) **epa.vic.gov.au**

File structures

EPA stores digital statements and reports from PRSAs and environmental audits in three parts:

- Part A, the PRSA or environmental audit report
- Part B, report appendices
- Part C, the PRSA statement and executive summary or environmental audit statement and executive summary.

Report executive summaries, findings and recommendations should be read and relied upon only in the context of the whole document, including any appendices and the PRSA statement or environmental audit statement.

Currency of PRSAs and environmental audits

PRSAs and environmental audits are based on the conditions encountered and information reviewed at the time of preparation. They don't represent any changes that may have occurred since the completion date. As it's not possible for the PRSA or audit report to present all data that could be of interest to all readers, consideration should be made to any appendices or referenced documentation for further information.

When information about the site changes from what was available at the time the PRSA or environmental audit was completed, or where an administrative error is identified, an environmental auditor may amend or withdraw PRSA or environmental audit statements and/or reports. Users are advised to check EPA's website to ensure documents' currency.

PDF searchability and printing

EPA can only provide PRSAs and environmental audit statements, reports and appendices that the environmental auditor provided to EPA via the EPA portal on the EPA website.

All statements and reports should be in a Portable Document Format (PDF) and searchable; however at times some appendices may be provided as image-only PDFs, which can affect searchability.

The PDF is compatible with Adobe Acrobat Reader, which is downloadable free from Adobe's Website (www.adobe.com).

Further information

For more information on Victoria's environmental audit system, visit EPA's website or contact EPA's Environmental Audit Unit.

Web: www.epa.vic.gov.au

Email: environmental.audit@epa.vic.gov.au

EPA VICTORIA

Flametree Property Pty Ltd

Preliminary Risk Screen Assessment

Under Part 8.3 of the Environment Protection Act 2017

51A Douglas Street, Noble Park Vic 3174
Lot 1 TP679381H and Lot 3 LP214150

4 September 2022

FINAL REPORT

Salient+
GeoEnvironmental Advisory

Report	Details
Status	Final
Prepared for	Flametree Property Pty Ltd, c/- Cedar Woods Properties Ltd
Project	Preliminary Risk Screen Assessment
Subject Site	51A Douglas Street, Noble Park Vic 3174
Reference No.	NA
Date of Issue	4 September 2023
Prepared by	Salient GeoEnvironmental Consulting Pty Ltd ABN 81 631 337 678 PO BOX 515 Camberwell Vic Australia 3124 Tel +61 (0)419 209 690

For and on behalf of
Salient GeoEnvironmental Consulting Pty Ltd

Warren Pump
Environmental Auditor
Principal/Director

Date: 4 September 2023

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(Cover photo courtesy of Apple Maps)

Table of Abbreviations

ABBREVIATION	DEFINITION
ACL	Added Contaminant Limit
AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment and Conservation Council
ASC NEPM	*National Environment Protection (Assessment of Site Contamination) Measure 1999*, as amended 2013
ASLP	Australian Standard leaching procedure
B(a)P	Benzo(a)pyrene
BTEX	Benzene, toluene, ethylbenzene and xylenes
COC	Chain of Custody
COPC	Contaminant of Potential Concern
CUTEP	Clean up of groundwater to the extent practicable
CSM	Conceptual Site Model
DO	Dissolved Oxygen
DQI	Data Quality Indicator
DQO	Data Quality Objective
DSI	Detailed Site Investigation
EC	Electrical Conductivity
Eh	Oxidation/Reduction Potential
EIL	Ecologically-based Investigation Levels
ESL	Ecological Screening Level
EPA	Victorian Environment Protection Authority
ESA	Environmental Site Assessment
GDA94	Geocentric Datum of Australia 1994
GWQO	Groundwater Quality Objective
HIL	Health-based Investigation Levels
HSL	Health-based Screening Level
IWRG	EPA Industrial Waste Resource Guidelines
LNAPL	Light Non-Aqueous Phase Liquids
LOR	Limit of Reporting
MAHs	Monocyclic Aromatic Hydrocarbons
mbgl	Metres below ground level
mg/kg	Milligrams per kilogram
mg/L	Milligrams per litre
ML	Management Limit
NATA	National Association of Testing Authorities
NEPC	National Environmental Protection Council
NEPM (ASC)	National Environment Protection Measure
NL	Not limiting (which means exposure pathway is not significant for this contaminant)
OCPs	Organochlorine Pesticides
OPPs	Organophosphorous Pesticides
PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PID	Photo-ionisation Detector

ABBREVIATION	DEFINITION
ppm	Parts per million
PSI	Preliminary Site Investigation
PRSA	Preliminary Risk Screen Assessment
QA	Quality Assurance
QC	Quality Control
RAS	Remediation Action Strategy
RPD	Relative Percentage Difference
RWP	Remediation Work Plan
SAP	Sampling and Analytical Plan
SEPP	State Environment Protection Policy
SOPs	Standard Operating Procedures
SVOCs	Semi-Volatile Organic Compounds
SWL	Static Water Level
TDS	Total Dissolved Solids
TOC	Top of Casing
TPH or TPHs	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
VOCs	Volatile Organic Compounds
µg/L	Micrograms per litre

Executive Summary

This report is in response to a request for a Preliminary Risk Screen Assessment in accordance with Division 2 of Part 8.3 of the *Environment Protection Act 2017*. The summary information on this audit is presented in the following table, in accordance with EPA Publication 2022.

Table E-1 Summary of Audit Information

Auditor	*Warren Pump*
Auditor account number	*EXT001137*
Environmental audit or PRSA Reference	*PRSA001111*
Name of person requesting the Audit	*Ben Power*
Relationship of person requesting audit to site	*Representative of the Site Owner/Developer*
Name of site owner	*Victorian Rail Track*
Date of auditor engagement	*11/08/2023*
Completion date of the PRSA	*04/09/2023*
Reason for PRSA	*Planning System*
Elements of the Environment Assessed	*Land, Groundwater, Surface Water*
Planning Permit No. of requirement detail if applicable	*PLN21/0713*
EPA Region	*South Metro*
Municipality	*City of Greater Dandenong*
Dominant – Lot on plan	*Lot 1 TP679381H*
Additional – Lot on Plan (s)	*Lot 3 LP214150*
Site/ Premises Name	*-*
Building/complex sub-unit No.	*-*
Street/Lot – Lower No.	*51A*
Street/ Lot – Upper No.	*-*
Street Name	*Douglas*
Street Type (Road, Court, etc.)	*Street*
Street Suffix (north, south, etc.)	
Suburb	*Noble Park*
Postcode	*3174*
Site Area (in square metres)	*2165*
Plan of Site showing the PRSA site boundary attached	*Yes*
Member and Categories of Support Team Utilised	*None*

Further work or requirements	*None*
Nature and extent of continuing risk	*None*
Outcome of the PRSA	*PRSA Report and Statement recommending that no environmental audit be conducted*

Table E-2 Physical site information

Historical land use	Car Parking
Current land use	Vacant
Proposed land use	Residential – high density (residential apartments and commercial office suites)
Current Land Use Zoning	Public Use Zone - Transport (PUZ4) Schedule to the Public Use Zone - Transport (PUZ4)
Surrounding land use - north	Car parking and Railway corridor (Cranbourne and Pakenham)
Surrounding land use - south	Douglas Street with commercial properties beyond (retail, cafes, offices)
Surrounding land use - east	Car Park
Surrounding land use - west	Open space Plaza area
Has EPA been notified about the site under Section 40 of the Environment Protection Act 2017?	No
Nearest surface water receptor – name	Mile Creek
Nearest surface water receptor – direction	East
Site aquifer formation	Upper Tertiary Aquifer (fluvial) sand, gravel and clay
Groundwater segment	A2

Summary of Report

In the capacity of an EPA-appointed Environmental Auditor, Warren Pump of Salient GeoEnvironmental Pty Ltd has completed a Preliminary Risk Screen Assessment (PRSA) of proposed residential land at 51A Douglas Street, Noble Park Vic ("the site") pursuant to the *Environment Protection Act 2017* (the Act).

The Site: Current and Proposed Uses

The development site is currently vacant. A review of the historical Certificates of Title has indicated that the site was formerly owned by the Victorian Railway Commissioners from 1913 until 2016 when the site was transferred to Victorian Rail Track. The use of the site in recent decades has been for open-air car parking.

Development of the site will comprise high-density residential and commercial uses. The proposed development will not include any change of ground contour levels or necessitate bulk excavations.

Planning Permit

As the responsible and planning authority, the City of Greater Dandenong issued a planning permit (Ref. PLN21/0713) on 8th June 2023 for the following:

- *Subdivision, use of land for retail premises, construction of a residential building with commercial uses at ground floor, removal of native vegetation, creation of an easement, and a reduction in car parking requirements*.

The overall development site is currently zoned as Public Use Zone - Transport (PUZ4).

Assessment Conducted by the Auditor

A PRSA is an environmental assessment that reviews information regarding the past use and activities undertaken at a site to consider the possible presence of contaminated land. Under section 204(2) of the *Environment Protection Act 2017*, the purpose of a preliminary risk screen assessment is to:

- assess the likelihood of the presence of contaminated land;
- determine if an environmental audit is required; and
- recommend a scope for the environmental audit, if an environmental audit is required.

A PRSA is not an environmental audit pursuant to section 203 of the Act and does not replace an environmental audit. The PRSA is a process to consider if an environmental audit is required, based on the likelihood of the site being contaminated land (Clause 45.03 of the current Victorian Planning Provisions, VPP). Further information on the situations where a PRSA is a recommended process in the planning framework is provided in *Planning Practice Note 30: Potentially Contaminated Land*, dated July 2021.

Findings of the Assessment

This PRSA has shown that the land is unlikely to be contaminated with respect to the following environmental values:

- *Land dependent ecosystems and species: highly modified ecosystems;*
- *Human Health*
- *Buildings and Structures;*
- *Aesthetics; and*
- *Production of flora and fauna and fibre.*

Auditor's Conclusions

An environmental audit is considered not to be required as, in accordance with Division 2 of Part 8.3 of the Act and the EPA *Guideline for Conducting Preliminary Risk Screen Assessments*, the condition of the site will not prevent or restrict the use or proposed land use.

No further investigation of the site is warranted.

The Auditor provides the PRSA Statement shown overleaf.

Use of the PRSA Statement

The person in management or control of the site must provide a copy of the preliminary risk screen assessment statement issued in respect of a site to any person who proposes to become the person in management or control of the site (section 214 of the *Environment Protection Act 2017*).

Preliminary risk screen assessment statement

Under Part 8.3 of the *Environment Protection Act 2017*

Publication F1031.1 published February 2022

The purpose of a preliminary risk screen assessment is:

(a) to assess the likelihood of the presence of contaminated land; and

(b) to determine if an environmental audit is required; and

(c) if an environmental audit is required, to recommend a scope for the environmental audit.

It is important to note that a PRSA statement is not an environmental audit statement or an environmental audit report. It should not be construed as an environmental audit conducted to assess the suitability of land use.

This statement is a summary of the findings of a preliminary risk screen assessment conducted under Part 8.3 of the *Environment Protection Act 2017* for:

51A Douglas Street

NOBLE PARK, Victoria 3174

Further details are provided in the preliminary risk screen assessment report that accompanies this statement.

Section 1: Preliminary risk screen assessment overview

Environmental auditor details

Name:	Warren Pump
Company:	Salient GeoEnvironmental Consulting Pty Ltd
Address:	PO Box 515, Camberwell Vic 3124
Phone:	0419 209 690
Email:	warren@salientplus.com

Site owner/occupant

Name:	NA
Company:	Victorian Rail Track

Environmental auditor engaged by

Name:	Mr Ben Power
Company:	Flametree Property Pty Ltd
Relationship to site owner:	Representative of the Developer

Reason for preliminary risk screen assessment

Planning scheme:	-
Permit details (if applicable):	Condition 9 of Permit PLN21/0713 dated 9th June 2023
Other:	NA
☒ Permit is attached (if applicable):	Attached in Annex D of this PRSA Report

Section 2: Assessment scope

Site details

Address:	51A Douglas Street, Noble Park Victoria 3174
Title details:	Lot 1 TP679381H (Lot 1 PS844109U proposed)
Area (hectares):	0.217

☒ a plan of the site is attached

Use or proposed use assessed

The below section details which land uses (current and proposed) the PRSA has assessed. Note, this is not a suitability of land use audit, rather an assessment to determine if an environmental audit is required for the land uses that apply to the specific PRSA.

Sensitive land use categories

Note that sensitive land uses in the *Environment Reference Standard 2021* (ERS 2021) are categorised as lower and high density. Lower density is where there is generally substantial access to soil and high density is restricted to developments that make maximum use of available land space, and there is minimal access to soil. For planning purposes, the *Ministerial Direction No. 1* (MD No.1) considers secondary schools and children's playgrounds to be sensitive land uses.

☒ High density

☒ Residential land use

☐ ~~Child care centre~~

☐ ~~Pre-school~~

☐ ~~Other (lower density)~~

☐ ~~Primary school~~

☐ ~~Secondary school~~

☐ ~~Children's playground (indoor)~~

☐ ~~Children's playground (outdoor)~~

Other land use categories

☐ ~~Recreation/open space~~

☐ ~~Parks and reserves~~

☐ ~~Agricultural~~

☒ Commercial

☐ ~~Industrial~~

☐ ~~Other~~

Environmental elements assessed

☒ Land

- ☒ all environmental values that apply to the land use category were considered **OR**
- ☐ all environmental values that apply to the land use category, other than the following, were considered:

Preliminary risk screen assessment statement

☒ Water

☒ Surface water

☒ all environmental values that apply to the applicable segment were considered **OR**
☐ all environmental values that apply to the applicable segment, other than the following, were considered:

☒ Groundwater

☒ all environmental values that apply to the applicable segment were considered **OR**
☐ all environmental values that apply to the applicable segment, other than the following, were considered:

Standards considered

Environment Reference Standard 2021
National Environment Protection (Assessment of Site Contamination) Measure 1999, amended 2013

Assumptions made during the assessment or any limitations

None

Exclusions from the assessment and the rationale for these

None

This statement is accompanied by the following preliminary risk screen assessment report

Title:	Preliminary Risk Screen Assessment – 51A Douglas Street, Noble Park Victoria 3174
Report no:	R01
Date:	4 September 2023

Section 3: Assessment outcome

Based on my assessment, I am of the opinion that an environmental audit is **not required** for the following land uses, **including** the use or proposed use for which the site has been assessed:

Sensitive land use categories

Note that sensitive land uses in the ERS 2021 are categorised as lower and high density. Lower density is where there is generally substantial access to soil and high density is restricted to developments that make maximum use of available land space, and there is minimal access to soil. For planning purposes, the MD No.1 considers secondary schools and children's playgrounds to be sensitive land uses.

☒ High density

☐ ~~Other (lower density)~~

☒ Residential land use

☐ ~~Child care centre~~

☐ ~~Pre-school~~

☐ ~~Primary school~~

☐ ~~Secondary school~~

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☐ ~~Children's playground (outdoor)~~

Other land use categories

☐ ~~Recreation/open space~~

☐ ~~Parks and reserves~~

☐ ~~Agricultural~~

☒ Commercial

☐ ~~Industrial~~

☐ ~~Other~~

Other information

(None)

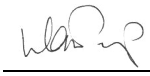
Note: An assessment that an audit is not required does not include any judgement as to whether responsibilities under section 39 of the *Environment Protection Act 2017* (duty to manage contaminated land) exist for the person in management or control of the land. Please refer to EPA publication 1977, *Assessing and controlling contaminated land risks: A guide to meeting the duty to manage for those in management or control of land* (https://www.epa.vic.gov.au/about-epa/publications/1977).

Section 4: Environmental auditor's declaration

I state that:

- I am appointed as an environmental auditor by the Environment Protection Authority Victoria under the *Environment Protection Act 2017*.
- The findings contained in this statement represents a true and accurate summary of the findings of the preliminary risk screen assessment that I have completed.

Date: 4 September 2023

Signed: 

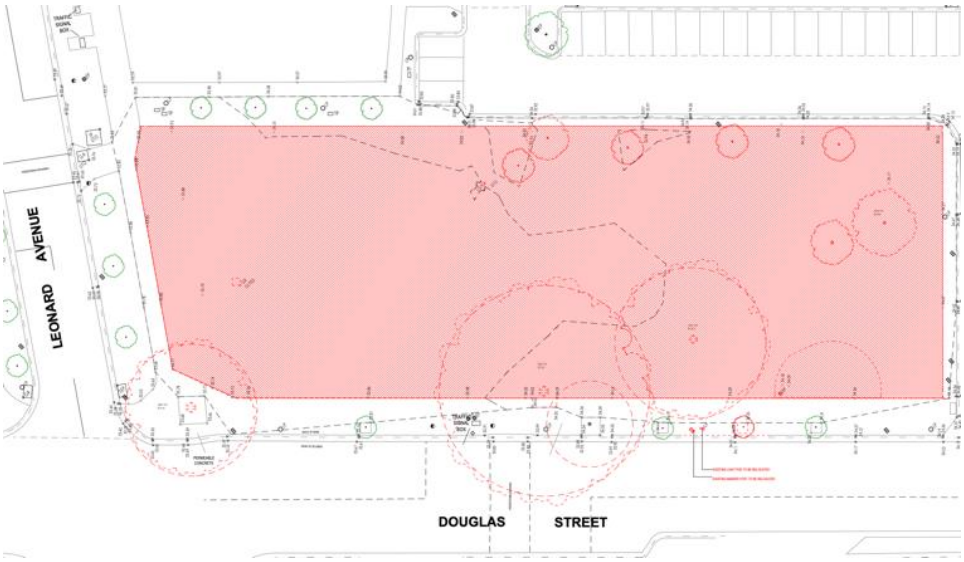
Name: Warren Pump
Environmental Auditor

Attached:

- **Site Plan**

Site at 51A Douglas Street, Noble Park Victoria 3174

(Courtesy DKO Architecture (Vic.) Pty Ltd)



1 Introduction

1.1 Background

This Preliminary Risk Screen Assessment (PRSA) Report has been prepared by Warren Pump of Salient GeoEnvironmental Consulting Pty Ltd, regarding the land located in 51A Douglas Street, Noble Park, Victoria ('site'). The PRSA has been conducted at the request of the owner's representative, Mr Ben Power of Cedar Woods Properties Ltd on behalf of Flametree Property Pty Ltd (hereafter referred to as 'the client').

The PRSA has been conducted in accordance with Division 2 of Part 8.3 of the *Environment Protection Act 2017* (the Act) and the *Guideline for Conducting Preliminary Risk Screen Assessments* (Publication 2021), published by the Environment Protection Authority (EPA) in February 2022. The Auditor has exercised professional judgement with reference to the Victorian *Environment Reference Standard*, the *Environment Protection Regulations* and national and state environmental guidelines, where relevant.

1.2 Purpose of Report

The PRSA is undertaken "to assess the likelihood of the presence of contaminated land and whether an environmental audit is required to determine if the potential contamination may prevent or restrict the use and/or the proposed use" (EPA Publication 2021).

A PRSA is an environmental assessment that reviews information regarding the past use and activities undertaken at a site to consider the possible presence of contaminated land.

The PRSA follows an investigation process consistent with that of the existing Preliminary Site Investigation (PSI) outlined in the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPM [ASC]).

Under section 204(2) of the Act, the purpose of a preliminary risk screen assessment is to:

- assess the likelihood of the presence of contaminated land;
- determine if an environmental audit is required; and
- recommend a scope for the environmental audit, if an environmental audit is required.

A PRSA results in a PRSA statement and a PRSA report prepared by the environmental auditor.

A PRSA is not an environmental audit pursuant to section 203 of the Act and does not replace an environmental audit. The PRSA is a process to consider if an environmental audit is required, based on the likelihood of the site being contaminated land.

If the outcome of the PRSA is that an environmental audit is required, then the audit process would assess the nature and extent of the risk of harm to human health or the environment from the contaminated land and make recommendations for measures to manage any identified risks of harm, as well as recommendations to manage the contaminated land.

Further information on the regulatory context of a PRSA is provided in Section 2 of this report.

This report by Salient GeoEnvironmental must be read and used in recognition of the limitations set out in Section 12.

1.3 Auditor Support Team

The Environmental Auditor has relied upon his own expertise in contaminated land to assess the risks of any contamination of land at the subject site. Warren Pump is the principal author of this report.

1.4 Parties involved

A list of parties involved in the audit is outlined in Table **1-1** below.

Table 1-1 - Relevant Parties

Site Owner(s):	Victorian Rail Track
Site Occupier(s):	None
Environmental Site Assessor(s):	Peraco Pty Ltd
Primary Laboratory Used by Assessor(s):	Eurofins Environment Testing Australia Pty Ltd (Eurofins)
Secondary Laboratory Used by Assessor(s):	ALS Environmental

1.5 Professional Judgement Exercised

The reader of this report is cautioned that the assessment and remediation of environmental impact is an emerging science. The technology associated with assessment and risk mitigation of land contamination is constantly changing as scientific information on data collection, risk assessment, toxicology and remediation technologies are published.

The reader is advised that the Auditor has considered these aspects and exercised professional judgement regarding the impact on the subject site. This is discussed further in Section 2.3 below.

1.6 Structure of this Report

This report contains the following information:

- An explanation of preliminary risk screen assessments and the role of the auditor (Section 2).
- The scope and methodology of the PRSA as applied to the subject site (Section 3).
- A detailed description of the site (Section 4).
- As assessment of the history of use of the site and its environs, and outline of its topography, geology and hydrogeology (Sections 5 and 6).
- An explanation of the Environmental Values of the land and waters relevant to the site and development of a Preliminary Conceptual Site Model (Sections 7 and 8).
- A review of the Site Investigations conducted at the site (Section 10).

- A detailed interpretation of the likelihood of site contamination and the need or otherwise of an environmental audit (Section 10).
- The Auditor's conclusions about the PRSA (Section 11).

Having regard to Appendix B of the EPA guidance in preliminary risk screen assessments (Publ'n 2021, dated February 2022), this PRSA report also contains the following information:

Table 1-2 – Contents of this PRSA Report

Item No.	Information Assessed	Location in Report
1	An executive summary, that includes the table of information outlined in EPA Publication 1147	Page PRSA-1
2	Details of the site assessed (e.g. address and property title details)	Sections 4.1 & 4.2
3	The current and proposed use and development	Section 0
4	The elements of environment assessed	Section 7
5	Land zoning information	Section 4.2.2
6	Completion date of the PRSA Statement and Report	Page ES-1
7	Background on why the PRSA is being undertaken	Section 4.6.1
8	Details of the scope and methodology for the PRSA, including whether the PRSA has considered land uses that are existing or proposed	Section 3
9	Summary of historical land use activities	Section 5
10	Site inspection observations and information on contamination that is present or is likely to be present	Section 4.3
11	List of documentation reviewed	Section 3.5
12	An opinion on the quality and completeness of prior assessment(s) of the site, including details of investigator, laboratory, sampling and analytical methods and type of assessment undertaken (if applicable)	Section 1.4 & 9
13	Description and outline of the initial conceptual site model with consideration of potential source - receptor - pathway linkages	Section 8
14	Assessment of the condition of the site, including: • the likelihood of contamination based on the PSI level of assessment undertaken • if sampling was undertaken, a comparison of any site-specific sampling data against relevant screening criteria • assessment of possible impacts on environmental values associated with the use or proposed use of the site	Section 10.2 Section 9.3.5 & Annex A Section 10
15	Determination of whether an environmental audit is required, providing justification as to why an environmental audit was or was not required. Also: • if an environmental audit is required, the environmental auditor must provide an environmental audit scope	Section 10.6 NA

Item No.	Information Assessed	Location in Report
	• where an environmental audit is required, consider the need to graphically present on a site plan the area(s) of concern or those that require further assessment • comment on the presence of, or potential for, offsite contamination • the presence of groundwater contamination at the site that is associated with offsite regional sources of contamination which is not to affect any relevant likely or existing environmental values of the site.	NA Sections 5.9 & 10.4 Section 10.4
16	Details of involvement of the environmental auditor's support team in the conduct of the PRSA	Section 1.3
17	Any other pertinent details of the PRSA, including: • the standards and guidelines considered; • any assumption or limitations made; • any exclusions from assessment, including environmental values.	Section 2 & 3
18	The Auditor's opinion on the environmental consultant's conclusions, as set out in the PSI report.	Sections 9.2 and 9.4

2 PRSA Guidelines

2.1 Preliminary Risk Screen Assessments

2.1.1 Regulatory Context

Development of land provides an opportunity to address contamination and mitigate any risks posed to human health, the environment, and building and structures. Contaminated land can often be safely used and developed following appropriate remediation, provided any necessary controls to manage residual contamination are implemented.

In the Auditor's summary review below of the current planning policy concerning potentially contaminated land, the Auditor has had regard to Amendment VC203 (1st July 2021) of the *Victoria Planning Provisions* (VPP).

The requirements in the planning framework to conduct a PRSA are addressed in *Ministerial Direction No. 1 – Potentially Contaminated Land and in Environmental Audit Overlays* (MD No.1) which are applied under the VPP. Further detail on the situations where a PRSA is a recommended process in the planning framework is provided in *Planning Practice Note 30: Potentially Contaminated Land*, dated July 2021. A PRSA will assess the likelihood of the presence of contaminated land on a site.

'**Land'** is defined in section 6 of the Act and means any land, whether publicly or privately owned, and includes any buildings or other structures permanently affixed to the land, and groundwater. This means that when the auditor is considering contamination of land, they also must consider groundwater.

'**Potentially contaminated land**' is defined in the *Ministerial Direction No 1* (MD No 1) and Clause 73.01 General Terms of the *Victoria Planning Provisions* (VPP) and means land;

- Used or known to have been used for industry or mining;
- Used of known to have been used for the storage of chemicals, gas, wastes or liquid fuel (other than minor above ground storage that is ancillary to another use of the land);
- Where a known past or present activity or event (occurring on or off the land) may have caused contamination on the land.

'**Contaminated land**' is defined in Part 3.5 of the Act and means land contaminated by waste, a chemical substance or a prescribed substance when present on or under the surface of the land, and the waste, chemical substance or prescribed substance:

- is present in a concentration above the background level; and
- creates a risk of harm to human health or the environment.

A '**Preliminary risk screen assessment**' is an assessment used to assess the likelihood of the presence of contaminated land, to determine if an environmental audit is required and if an environmental audit is required to recommend a scope for the environmental audit (section 204 of the Act).

2.1.2 Use of a PRSA by a Planning Authority

Section 12 of the *Planning and Environment Act 1987* requires a planning authority, when preparing a planning scheme or planning scheme amendment to 'take into account any significant effects which it considers the scheme or amendment might have on the environment or which it considers the environment might have on any use or development envisaged in the scheme or amendment'.

A planning authority must also consider the Planning Policy Framework of the VPP, including clause 13.041S *Contaminated and potentially contaminated land*. Clause 13.04 -1S aims to ensure that contaminated and potentially contaminated land is or will be suitable for its intended future use and development, and that this land is used and developed safely.

2.1.3 Land Uses Considered

MD No. 1 contains more specific requirements for land which is determined to be potentially contaminated. Additional requirements apply for land proposed to be used for sensitive uses, defined as residential uses, child care centres, kindergartens, pre-school centres or primary schools, even if ancillary to another use, and for secondary schools and children's playgrounds. Where an amendment allows these uses (whether or not subject to a permit) a process under the environmental audit system, administered by the Environment Protection Authority (EPA), is required to demonstrate that the land is suitable for its intended use.

2.2 Role of Environmental Auditor

An environmental auditor performs functions under the *Environment Protection Act 2017*, including the conduct of preliminary risk screen assessments and environmental audits. The auditor is required to have regard to guidelines and standards that ensure the environmental audit provides the best assurance available that the site is suitable for its intended use. Their primary role is to produce an independent environmental report for the site.

2.3 Auditor Independence

The Auditor, in undertaking this PRSA at the subject site, confirms stated that he is not aware of any conflict of interest which would preclude him from issuing a PRSA statement for the site and has not had prior involvement in any assessment or clean-up works at the site.

In forming his opinions and determinations, the Auditor has exercised impartiality and maintained independence from the client, its professional advisors and consultants.

2.4 Professional Judgement Exercised by the Auditor

The reader of this report is cautioned that the assessment and remediation of site contamination is an emerging science. The technology associated with assessment and remediation of site contamination is constantly changing as scientific information on data collection, risk assessment, toxicology and remediation technologies are published. In addition, assessment is based on sampling programmes that represent a common-sense balance between the costs and time associated with collection of the data against the benefits of accessing the data in question.

Site contamination assessments deal with chemical contamination of land, and seek to provide sufficient information concerning the nature, concentration and extent of such contamination to allow appropriate management decisions to be made. Such assessments also deal with natural and human-modified environments that may include multiple media such as soil, surface water,

groundwater, soil vapour and ground gas. Each of these media may be spatially heterogeneous and also vary, either systematically or randomly, with time.

Heterogeneity and variability introduce uncertainty into any environmental assessment, making it necessary to quantify (or at least qualify) the uncertainty as well as wells as the contamination and its human or ecological impacts.

Uncertainty may be partially addressed by adopting guideline-specified standards for sampling frequency and data quality, and by applying statistical methods to define the accuracy and precision of data and to describe the central tendencies and variance of datasets. However, this does not entirely avoid the need for subjective professional or ‘expert’ judgement in making management decisions concerning the status of complex sites or the behaviour of complex environmental systems.

It is often helpful to consider multiple lines of evidence when dealing with such systems. If evaluation of independent lines of evidence leads to similar conclusions, then confidence in the validity of those conclusions is increased.

The reader is advised that the Auditor has considered these aspects and exercised professional judgement regarding the impact on the subject site.

The reader is also cautioned that characteristics of the subsurface and surface materials may vary significantly between adjacent test points, sample intervals and at locations where direct observation, measurement or exploration have not occurred.

3 PRSA Scope and Methodology

3.1 PRSA Scope

With recognition of Section 3 of the PRSA guidelines (EPA Publication 2021), the scope of this PRSA has had regard to the following:

- the site in respect of which the assessment was conducted;
- the use and proposed use of the site;
- the elements of the environment assessed;
- the standards considered in the assessment;
- any assumptions made by the Auditor during the assessment;
- any limitations on the Auditor's assessment; and
- any exclusions from the assessment and the rationale for these exclusions.

The PRSA scope has addressed the following:

- the current land use; and
- the proposed land use, which is considered consistent with the zoning of the land.

3.2 Activities at the Site

'Activities' are the current use and historical uses of the site that may have led to contamination of the land and/or groundwater at the site (including both on-site and off-site activities).

In this report, identification of activities has drawn on all available information about the site or in proximity to the site. This will include the information that has been collated for a PSI of the site (as discussed in Section 9 below), as well as the results of any site investigations or remediation work that have been previously undertaken on the site and on nearby properties.

3.3 PRSA Methodology

In conducting this PRSA, the Auditor has:

- Made a site inspection on 24th August 2023.
- Undertaken a review of a PSI report and a DSI report produced by an environmental consultant, and completion of additional enquiries or filling of information gaps if considered necessary.
- Undertaken an assessment, on the basis of the information reviewed, whether the site is likely to be contaminated land.
- Where necessary, undertaken ongoing discussion and liaison with the client and the environmental consultant.
- Determined whether further investigation of the site in an environmental audit is required to consider the risk of harm that may be posed by the contamination to the use or proposed use of the site, and if necessary recommend a scope for any required environmental audit.
- Prepared a PRSA statement and this PRSA report.

3.4 Exclusions

The scope of the PRSA contains no exclusions.

3.5 Reports Reviewed

The following reports on the site has been reviewed and relied upon by the Auditor in undertaking this Environmental Audit:

- Peraco (2020), *Preliminary Site Investigation, 51A Douglas Street, Noble Park, Victoria 3174.* Report prepared for Cedar Woods Properties Ltd by Peraco Pty Ltd, dated 13 October 2020, Reference No. J8608.R01.

- Peraco (2021), *Limited Scope Detailed Site Investigation, 51A Douglas Street, Noble Park, Victoria 3174.* Report prepared for Cedar Woods Properties Ltd by Peraco Pty Ltd, dated 12 March 2021, Reference No. J608B.R01.

See copy of these (combined) reports in Annex F of this PRSA report.

Both of the above investigation reports were prepared prior to commencement of this PRSA and without any involvement by the Auditor.

The Auditor has also reviewed the following desktop report (being contained in Annex G of this PRSA report):

- Lotsearch (2023), "*Enviro Lite" Report – 51A Douglas Street, Noble Park, Victoria 3174.* Report prepared by Lotsearch Pty Ltd, dated 17th July 2023, Reference No. LS045825 EL.

4 Site Description

4.1 Site Location and Area

The overall development site at 51A Douglas Street lies approximately 25 km south-east of Melbourne's CBD, with a location as shown in Figure **4-1** below.

Figure 4-1 - Site Location

(Courtesy Lotsearch, 2023)

4.2 Property Description

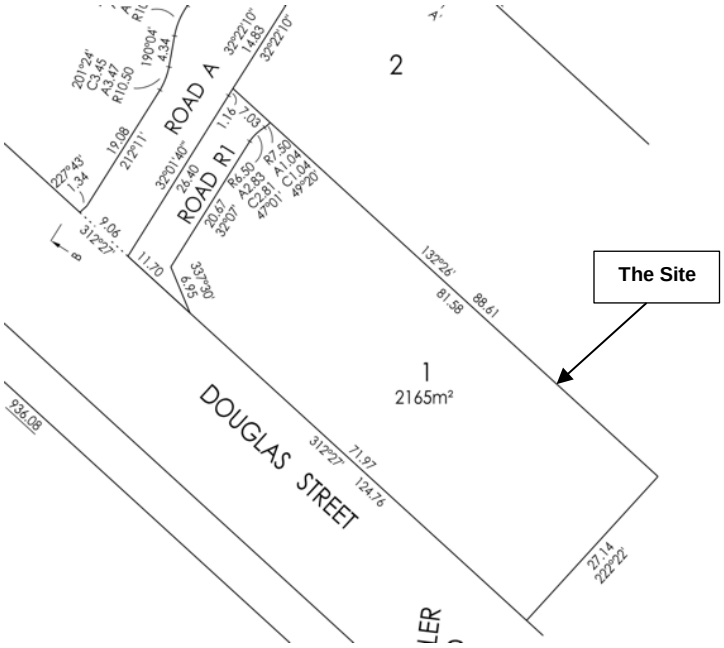
4.2.1 Certificate of Title

The legal description of the subject property subject to Lot 1 on TP679381H. The proposed Plan of Subdivision is provided in Annex B. The current owner of the site is Victorian Rail Track.

An extract of the proposed Plan of Subdivision is shown in Figure **4-2** below.

Figure 4-2 - Proposed Plan of Subdivision

(Extract of PS 844109U)



The layout of the existing condition of the overall development site (2165 m^2) is shown in Figure **4-3** and Figure **4-4** below.

Figure 4-3 – Existing Layout

(Courtesy DKO Architecture (Vic.) Pty Ltd)

Figure 4-4 – Site Boundary

(Courtesy Lotsearch, 2023)

4.2.2 Land Use Zone

According to the City of Greater Dandenong Planning Scheme the overall development site (2165 m^2) is zoned as *Transport Zone 1 - State Transport Infrastructure (TRZ1)*. The property has no Environmental Audit Overlay (EAO).

Copies of the Property Reports are contained in Annex C.

The Greater Geelong Planning Scheme states that the purpose of a TRZ1 is to:

To implement the Municipal Planning Strategy and the Planning Policy Framework.

To provide for an integrated and sustainable transport system.

To identify transport land use and land required for transport services and facilities.

To provide for the use and development of land that complements, or is consistent with, the transport system or

public land reservation.

To ensure the efficient and safe use of transport infrastructure and land comprising the transport system.

Principal uses permitted in TRZ1 include:

- Automated collection point
- Railway
- Railway station
- Tramway, etc.

4.3 Site Features

Based on the Auditor's inspection of the site on 24th August 2023, the physical condition of the overall development site is shown in Plate **4-1** below.

Plate 4-1 – Typical Site Conditions

The overall development site is currently vacant. The site is generally flat and slopes slightly down towards the north with an elevation of approximately 34 mAHD (Lotsearch, 2023).

The inspections by the Auditor of the overall development site revealed no visible evidence that the site has been filled in the past; existing ground levels are consistent with surrounding natural ground. No waste materials or stockpiles of soil were observed on the site.

No evidence of current chemical storage or use (or evidence of any above-ground or underground fuel storage tanks) was identified during the Auditor's site inspection. There were no electrical transformers visible on the overall development site.

There was no evidence of groundwater abstraction at the site.

No potential asbestos-containing material (either roof or wall cladding or on-ground fragments) were visible during the site inspection.

There was no evidence of observed during the site inspection of stained or odorous soil or distressed vegetation.

Overall, the Auditor considers that the site comprises a highly modified ecosystem.

4.4 Adjacent Site Uses

The nearby site uses are summarised in Table **4-1** below.

Table 4-1 – Adjacent Site Uses

North:	Car parking and Railway corridor (Cranbourne and Pakenham)
South:	Douglas Street with commercial properties beyond (retail, cafes, offices)
East:	Car Park
West:	Open space Plaza area

The nearest sensitive receptors to the site comprise low density residential properties located about 70 metres to the north-east across the railway line. The nearest known kindergarten/child care centre is the 'Goodstart Early Learning Centre' located about 195 metres to the south-east.

Plate **4-2** below shows the urban context of the site.

Plate 4-2 – Site Environs

(Courtesy Lotsearch, 2023)

Typical abutting land uses in August 2023 are shown in Plate **4-3** below.

Plate 4-3 – Typical Abutting Land Uses

4.5 Environmental Setting

The nearest surface water body identified is Mile Creek, located about 235 metres to the north east. In the Noble Park area, Mile Creek is a concrete-lined stormwater drain which discharges to a lake/stormwater detention basin about 1.4 km to the north north west of the site (inside the Sandown Racecourse and Entertainment Centre). Port Phillip Bay is 9.2km to the south west.

The nearest park/playground is the Mills Reserve and Playground (public open space) is located about 150 metres to the north east of the site. The Copas Park Playground (public open space) is located about 160 metres to the south west of the site.

Peraco (2020) advises that the site is underlain by Red Bluff Sandstone comprising of sandstone, conglomerate: pale yellow and brown; fine to coarse-grained, massive to well bedded; cross-bedded and local ironstone. Further details are described in Section 6 below.

Peraco (2020) also advises he probability of occurrence of Acid Sulfate Soils at the site is noted to be "Extremely Low (1-5%)".

The desktop assessment of site history prepared by Peraco (2020) show that there is no known history of mining activities at the site or within 1 km of the site. The report also indicates there is no evidence of historical or recent storage of chemicals, gas, waste or liquid fuel.

The site is not located within an EPA-nominated 500m buffer zone imposed around current and former landfill sites. Further details are provided in Section 5.5 below.

4.6 Proposed Site Use

4.6.1 Planning Permit Issued

As the responsible and planning authority, the City of Greater Dandenong issued a planning permit (Ref. PLN21/0713) on 8th June 2023 for the following:

> *Subdivision, use of land for retail premises, construction of a residential building with commercial uses at ground floor, removal of native vegetation, creation of an easement, and a reduction in car parking requirements*.

A copy of the planning permit is shown in Annex D of this PRSA audit report.

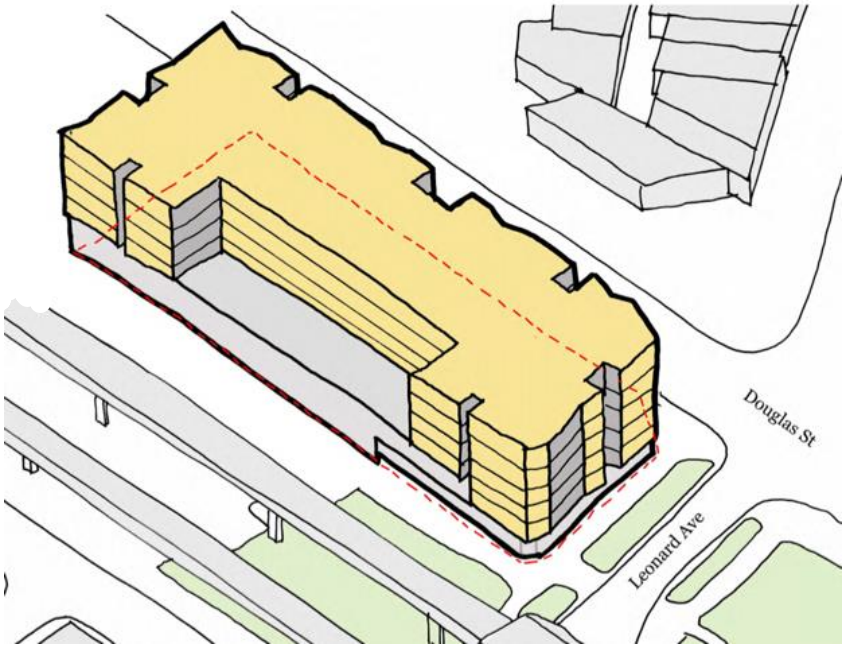
The Auditor is not aware of any Endorsed Plans for the proposed development of the site.

4.6.2 Layout of Proposed Uses

The development will consist primarily of 97 residential apartments. The proposed layout of the proposed commercial/residential use of the site is shown in Figure **4-5** below.

Figure 4-5 - Proposed Development Layout – looking south-east

(Courtesy: DKO Architecture)



The proposed built form of the proposed development of the site is shown in Figure **4-6** below.

Figure 4-6 - Proposed Built Form (elevation view)

(Courtesy: DKO Architecture)

(North Elevation and East Elevation)

The proposed commercial/residential development of the site will not include any significant change of ground contour levels or involve bulk excavations. The new building work and hard landscaping will take place essentially on existing ground level. Development works will not include any basement (e.g. for car parking).

The proposed use of the site includes a central paved, private courtyard but no scope for a pond, swimming/spa pool, or home production of fruit or vegetables. The proposed development (construction) works and the ongoing occupation of the site do not involve direct contact with groundwater beneath the site or any extractive use of the groundwater.

About 98% of the site area will be covered either by building slabs or hard paved areas such as stone paving.

5 Site History

5.1 Summary of Information Sources

A desktop review of various documents and records was undertaken to determine the historical use of the site and surrounding area and in particular to identify activities with the potential to result in potential contamination of the underlying soil and/or groundwater (Peraco, 2020, and Lotsearch, 2023, – as contained in Annex F and Annex G respectively of this PRSA report).

The following sources of historical information was accessed:

- Historical aerial photograph review;
- Sand and MacDougal directory records;
- Existing environmental audit reports of nearby sites;
- Groundwater databases held by the State Government Victoria - Department of Environment, Land, Water & Planning;
- Publicly available historical records including Commonwealth, State and local heritage records;
- EPA licences, approval and priority site registers;
- Desktop physical information review;
- Previous reports.

5.2 History of Site Uses

Peraco (2020) conducted a review of historical Certificates of Titles for the site from 1913 to 2020 in order to gain an understanding of previous site owners and occupiers, and to identify potentially contaminating historical land uses.

Table 4. 1 below summarises historical Certificates of Title details and historical site proprietors.

Table 5-1 - Summary of Historical Certificates of Title

(Courtesy Peraco, 2020)

Title Details	Date	Owner & Occupation (where noted)
Lot 1 on Title Plan 679381H		
Volume 3743, Folio 532	24/10/1913 – 02/11/2016	The Victorian Railways Commissioners
	02/11/2016 – present	Victorian Rail Track
Lot 1 PS844109U (proposed)		

Copies of the Certificate of Titles are presented in Appendix A of Peraco (2020) – see Annex F of this PRSA report.

The review of the historical Certificates of Title indicated that the site was owned by The Victorian Railway Commissioners from 1913 until 2016 when the site was transferred to Victorian Rail Track (being the current owners).

5.3 Historical Aerial Photography

Information on the site use and the surrounding land were obtained from aerial photographs, reviewed by Peraco (2020) and updated in Lotsearch (2023). The aerial photographs are contained within Appendix B of Peraco (2020) (as contained in Annex F of this PRSA report). The Auditor's assessment is summarised in Table **5-2** below.

Table 5-2 - Summary of Aerial Photographs

Date	Site Use Details
1931	On-Site: The site appears to be vacant land, a possible structure/building may be present in the southern portion of the site but from the photograph it is difficult to confirm. Off-Site: The railway line is present to the east of the site. The streets surrounding the site have been established with some development along the southern side of Douglas Street.
1945	On-Site: The photograph is clearer than the 1931 photograph and site features are more distinguishable. The structure is still present in the southern portion of the site. The site has some trees and vegetation and a path appears to transverse the site. Off-Site: There appears to be some storage or small structures east of the site, along the railway line. The southern side of Douglas Street is slightly more developed.
1954	On-Site: The photograph quality is poor and not very clear. The previously identified structure in the southern portion of the site appears to be gone and the site appears more overgrown. Off-Site: The land immediately south of the site has been cleared and there is a structure. The land to the north has also been cleared. More development is present on the surrounding streets, notable on the southern side of Douglas Street directly opposite the site and across the railway line along Jasper Street which appears light industrial in nature.
1960	On-Site: The site has been cleared further and appears to be used for car parking. There is a building in the southern portion of the site. Off-Site: There is additional development on the property immediately south of the site with several smaller structures, appears residential in nature. There is a structure on the eastern boundary along the railway track, believed to be the railway station building.
1974	On-Site: The site is further cleared and used for car parking. The southern portion of the site appears to have a structure associated with the land to the south of the site. Off-Site: The land to the immediate north is also cleared and used for car parking. Additional development along the northern side of Douglas Street to the north of the site.
1978	On-Site: Remains largely unchanged. Off-Site: Remains largely unchanged.
1984	On-Site: The structure in the southern portion of the site is gone. The rest of the stie remains largely unchanged. Off-Site: The property to the immediate south of the site has been cleared and the buildings are gone. The land across the railway track has been cleared and appears to be used for car parking.
1991	No significant changes since 1984. The site is vacant.
2001	No significant changes since 1991. The site is vacant.
2009	No significant changes since 2001. There is a small structure near the north eastern boundary which could possibly be bike storage for the train station.
2015	No significant changes since 2009.

Date	Site Use Details
	There are two structures on-site which could possibly be bike storage associated with the railway station. The site is still used for car parking.
2018	The Peraco (2020) report includes an air photo "Image 1 - February 2018" in Appendix C of that report. Such a photo shows that a portion of the site was used for storage of building materials for the abutting station/rail reconstruction. "Image 2 - September 2018" shows temporary buildings occupying the site (site offices?). A stockpile of unknown granular material (soil?) is visible at the NW end of the site. Off-site: The railway line has been converted to an elevated rail line. The old railway station is gone with the new railway station now to the north of the site.
2020	The site is vacant by 2020. Off-site: No significant changes since 2018.

In summary, a review of the historical aerial photographs indicates that the site was mostly undeveloped and vacant up to 1960 when it was used for open-air car parking and continued to be used so until early 2018 when the site appeared to be used for site offices during the construction of the nearby rail and station upgrade works and the development of the new railway station plaza.

The surrounding area has remained predominantly commercial/residential use since at least 1931 until present day with continued development along Douglas Street. The land to the immediate south of the site has changed use from possibly residential in 1978 to car parking in 2001 with the land vacant in between.

The property opposite the site across Douglas Street on the corner of Leonard Street appears to have been developed from at least 1960. To the north the industrial area on Jasper Street began development from at least 1954.

5.4 Historic and Current Nearby Business Premises

Lotsearch (2023) provided details of nearby business premises known to have operated (or are still operating) near the subject site and which may have involved potentially contaminating activities. Details are contained in Annex F of this PRSA report.

In summary, known business premises at and near the site are as follows:

- Numerous former businesses located near the site within Douglas Street and Leonard Avenue, comprising:
  - A former service station located south across Douglas Street opposite the site (apparently operating over the period 1965-1991) and which is now a tyre retailer (as shown in Plate **4-3** above).
  - Numerous former offices/retail outlets (consisting typically of accountants, real estate agents; food shops, hairdressers; fruiterers/greengrocers; etc.) operating in the 1980s/90s within 100m south of the site in Douglas Street and Leonard Avenue.
- There were service stations listed 140 m to the north, 180 m to the north, 200m to the north-west, 360m to the north-west, and another 890m east of the site. All appear to have closed by 1991 (or earlier).
- Two former dry cleaning outlets operated about 150m north in Heatherton Road, and 255 m north west in Douglas Street of the site, in the period 1980-1989.

Other than the former service station across Douglas Street, each of the above activities are considered either to be non-contaminating or have been conducted too distant to pose any significant environmental impact on the subject land.

The PSI report by Peraco (2020) mentions that former dry cleaning outlets existed near the site in Douglas Street in the 1970s:

- No. 12 Noble Park Dry Cleaners;
- No. 24 Spotless Laundry/Dry Cleaners; and
- No. 46 Brown Gough Laundry/Dry Cleaner.

However, the desktop study by Lotsearch (2023) makes no mention of such businesses.

The Lotsearch (2023) report shows that there are no known mining facilities, Defence sites, refineries or gasworks within 500 m radius of the site.

5.5 Waste Management Facilities near the Site

Lotsearch (2023) undertook a search of records of licensed waste disposal facilities near the site and found no such facilities within 1000m of the site.

Lotsearch identified several EPA-licenced waste handlers/treaters location about 900m to the south of the site, as follows:

Table 5-3 – Known EPA Prescribed Industrial Waste Licensees

(Courtesy Lotsearch, 2023)

Map Id	Company Name	Address	Suburb	Treatment /Disposal	Transport	Accredited Agent	EPA List Status	Loc Conf	Dist (m)	Dir
2900	CHHIN TRANSPORT PTY LTD	21 BLOOMFIELD RD	NOBLE PARK VIC 3174	No	Yes	No	Current EPA List	Premise Match	843m	South
1575	CABLE SOLUTIONS PTY LTD [DANDENONG SOUTH]	HILARY CT	NOBLE PARK	No	Yes	No	Previous EPA List	Road Match	940m	South
2591	SOKHOUT, CHEY	19 REX CT	NOBLE PARK VIC 3174	No	Yes	No	Previous EPA List	Premise Match	976m	South

Each of the above activities are considered either to be non-contaminating, are non-landfills or conduct activities too distant to pose any significant environmental impact at the subject site.

5.6 Other Possible Infrastructure Near the Site

Peraco (2020) also provide the following information in former or existing infrastructure that may have affected the site:

- **Cathodic Protection System Database** - A search of the Energy Safe Victoria Cathodic Protection System database was completed in October 2020 to identify if any cathodic protection systems had ever been registered for the site and no results were found and as such it is considered unlikely that any registered underground storage tanks are present at the site.
- **Dangerous Goods Database Search** - A search of the WorkSafe Dangerous Goods Storage and Handling Database was requested, and the results of the search did not identify any dangerous goods storage facility that had existed at the site.

5.7 EPA Priority Sites Register

A search by the Auditor of the Priority Sites Register held by the Victorian EPA, version dated 31st July 2023, indicated that the subject site is not listed on the EPA Priority Sites Register. The Register reported that no Clean-up or Pollution Abatement Notice had been issued to owners or occupiers of the site.

The Priority Sites Register lists sites for which EPA has requirements for active management of land and groundwater contamination (EPA Publication 735 EPA *Contaminated Site Information Systems Priority Sites Register,* December 2000). Necessary clean-up and management of contaminated sites is an EPA priority, and so “Clean Up’ or ‘Pollution Abatement’ notices are issued to occupiers/owners of such sites.

A total of three (3) such properties were listed as a Priority Site within the City of Greater Dandenong with the register of 31st July 2023. Being located in Springvale South and Dandenong South, the Auditor considers that all three sites were too distant to pose any significant environmental impact at the subject site.

It should be noted however, that the Priority Sites Register does not list all sites known to be contaminated in Victoria, and a site should not be presumed to be free of contamination if it does not appear in the Priority Sites Register. However, since the site does not exist on the EPA Priority Sites Register, no active management plan or clean up is inferred to be required by EPA.

5.8 Groundwater Quality Restricted Use Zones

The Auditor undertook a search of the Victorian Unearthed website to identity the locations of any Groundwater Quality Restricted Use Zones (GQRUZs) and found no such areas within a 500 metres radius of the site.

A GQRUZ (EPA Ref. 8002141; 59733-1) is located at 156-158 Corrigan Road, Noble Park, which is 750 metres west. The Auditor considers that this GQRUZ is too distant to pose any significant environmental impact at the subject site.

5.9 Nearby Environmental Audits of Land

A search of the Victorian EPA list of Issued Certificates and Statements of Environmental Audit was undertaken by Peraco in October 2020, and gain by the Auditor in August 2023, which indicated that no Certificates or Statements of Environmental Audit have been issued for the site.

A search of Environmental Audits completed in the vicinity of the site was also undertaken at this time which identified eight environmental audits within 1 km of the site, six of which were completed within 500 m of the site. These audit sites are shown in Table **5-4** and Figure **5-1** below.

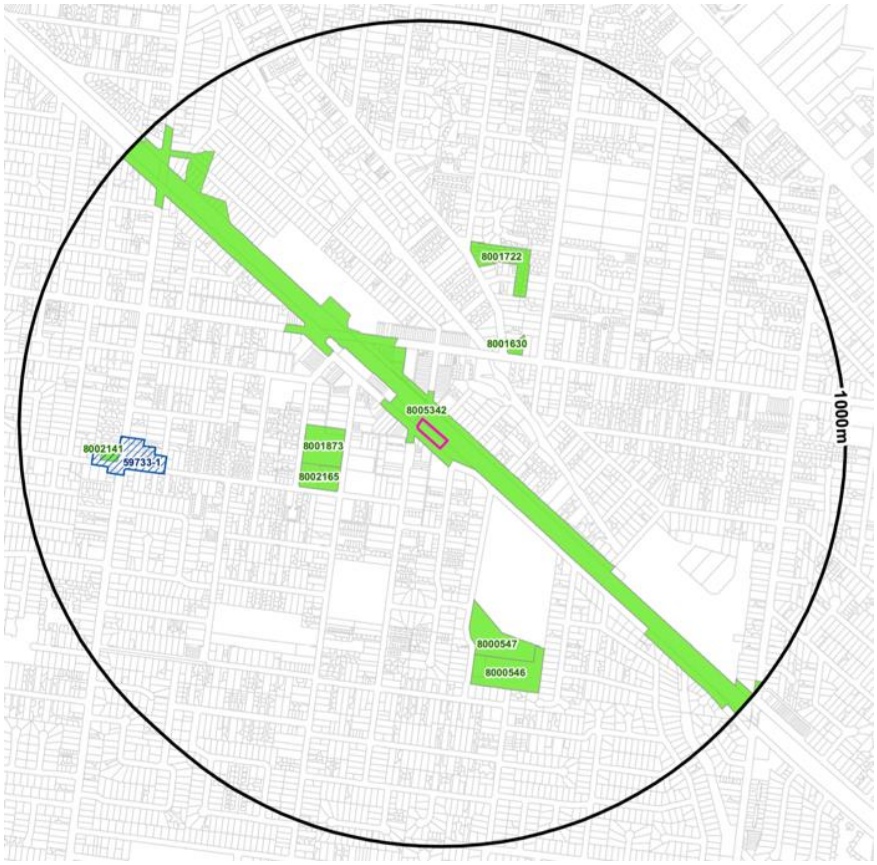
Table 5-4 – Environmental Audits of Sites within 500 metres of the Subject Site

(Courtesy Lotsearch, 2023)

Transaction No	CARMS No	Site	Address	Suburb	Date Complete	Audit Category	Loc Conf	Distance	Direction
8005342	75018-1		LEVEL CROSSING REMOVAL PROJECT CAULFIELD FLINDERS STREET	NOBLE PARK	25/06/2020	53V	Premise Match	0m	On-site
8001873	55401-1	36 BUCKLEY ST	36 BUCKLEY ST	NOBLE PARK	16/05/2006	53X Statement	Premise Match	181m	West
8002165	60013-1	19 NOBLE ST & SOUTHERN PORTION OF 36 BUCKLEY STREET	19 NOBLE ST & SOUTHERN PORTION OF 36 BUCKLEY STREET	NOBLE PARK	30/04/2010	53X Statement	Premise Match	218m	West
8001630	50701-1	1181-1183 HEATHERTON RD	1181-1183 HEATHERTON RD	NOBLE PARK	03/03/2003	53X Statement	Premise Match	266m	North East
8001722	52660-1	21 KELVINSIDE RD	21 KELVINSIDE RD	NOBLE PARK	28/10/2003	53X Statement	Premise Match	383m	North East
8000547	31113-2	ADDITIONAL PART FMR COLLEGE, THOMAS ST ADDITIONAL PORTION OF FORMER NOBLE PARK SECONDARY COLLEGE, T	, NOBLE PARK VIC 3174 37-53 THOMAS ST	NOBLE PARK	07/04/1997	53X Certificate	Premise Match	389m	South

Figure 5-1 – Nearby Audit Reports within 1000m

(Courtesy Lotsearch, 2023)



A review of the audit reports for the six audits within 500m was undertaken in order to provide an understanding of nearby historical land use as well as soil and groundwater quality in the vicinity of the site. A summary of pertinent findings from the review is provided below.

The audit report listed in Table **5-4** above, EPA Ref. 8005342; 75018-1, was conducted by Warren Pump of Salient GeoEnvironmental Pty Ltd in association with Environmental Resources Management Australia Pty Ltd (ERM, 2020). The audit focussed on risks to the environment associated with potentially contaminated spoil generated during construction activity associated with the linear transportation upgrade, referred to as the "Caulfield to Dandenong Level Crossing Removal Project" (CTD Project).

At the direction of the EPA, that audit (EPA Ref. 8005342; 75018-1) was undertaken pursuant to section 53V of the *Environment Protection Act 1970* to assess and verify the spoil management activities and contaminated soil reuse. The EPA required that audit scope include final land use, characterisation of material, decision making for spoil reuse and disposal, validation, contingency, spoil management, ongoing management plans for the sites, and the reuse of contaminated soil as structural/engineering fill. On this basis, the audit did not specifically address the potential contamination at the subject site at 51A Douglas Street, Noble Park.

Other audited sites within 500m of the subject land are as follows:

36 Buckley Street, Noble Park, CARMS 55401-1, 16/05/2006, 181m West

The soil investigation indicated elevated concentrations of total PAHs, benzo(a)pyrene and TPHs (C_{10}-C_{36}) were in excess of the human health guidelines for standard residential use (HIL'A' or equivalent) but were below the guidelines for medium to high density residential use (HIL'D' or equivalent).

A groundwater investigation was not undertaken at the site as it was considered very unlikely that the site had contributed to groundwater pollution.

A Statement of Environmental Audit was issued for the site.

This audited site at 36 Buckley Street is considered too distant to pose any significant environmental impact at the subject site.

19 Noble St & Southern Portion of 36 Buckley Street, Noble Park, CARMS 60013-1, 30/04/2010, 218m West

The soil investigation identified concentrations of heavy metals (copper, lead, nickel and zinc) at a number of locations that exceeded the NEPM EIL guideline values. The contamination was identified in shallow soil (surface to 0.5 mbgl) at the site with the exception of lead identified in one sample taken from a depth of 1.0mbgl. Lead and copper contamination was identified at some locations in excess of NEPM HIL A. Sampling adjacent to the locations where contamination was identified indicated that the contamination was localised and not indicative of contamination that would adversely affect the use of the site.

A groundwater investigation was not undertaken at the site as it was considered very unlikely that the site had contributed to groundwater pollution.

A Statement of Environmental Audit was issued for the site.

This audited site at 19 Noble Street/36 Buckley Street is considered too distant to pose any significant environmental impact at the subject site.

1181-1183 Heatherton Rd, Noble Park, CARMS 50701-1, 03/03/2003, 266m North East

The site is a former service station, assessment works included the removal of all USTs and infrastructure from the site. The soil investigation indicated elevated concentrations of nickel and vanadium in the fill material which were considered natural in origin.

The groundwater investigation indicated elevated concentrations of selenium. Regional groundwater flow direction was south westerly and Segment C was adopted.

A Statement of Environmental Audit was issued for the site.

This audited site at 1181-1183 Heatherton Road is considered too distant to pose any significant environmental impact at the subject site.

21 Kelvinside Rd, Noble Park, CARMS 52660-1, 28/10/2003, 383m North East

The site is a former nursery. Results of the soil investigation indicated elevated levels of vanadium and localised elevated levels of DDD and DDT. No groundwater investigation was not undertaken at the site.

This audited site at 21 Kelvinside Road is considered too distant to pose any significant environmental impact at the subject site.

Additional Portion of Former Noble Park Secondary College, 37-53 Thomas St, Noble Park, CARMS 31113-2, 07/04/1997, 391m South

and

Former Noble Park Secondary College Lot 2, Thomas Street, 1 - 3 Bloomfield Rd, Noble Park, CARMS 31113-1, 24/01/1997, 524m South

Limited soil investigations were conducted with samples taken at a total of five locations. All reported concentrations were below the adopted criteria. No groundwater investigation was not undertaken at the site. Certificates of Environmental Audit was issued for the two sites.

This audited site at the Former Noble Park Secondary College is considered to be uncontaminated and would not pose any significant environmental impact at the subject site.

156-158 Corrigan Rd, Noble Park, CARMS 59733-1, 19/09/2012, 750m West

The site is a former retail service station with seven USTs which were removed in 1997. A soil investigation indicated that near surface soil at the site was relatively free of chemical contamination; zinc exceeded ecological criteria at one location and the health criteria were not exceeded. Petroleum hydrocarbons were present and exceeded criteria at one deeper location.

A soil vapour investigation was also conducted and found that inhalation of vapours from contaminated soil and groundwater on and from the site did not pose an unacceptable health risks.

The groundwater investigation concluded that concentrations of metals, nitrate, ammonia and petroleum hydrocarbons were elevated above the ecological criteria, however these were not considered to preclude this use as they were considered to be background (metals, nitrate, ammonia) or would attenuate before the point of discharge (petroleum hydrocarbons). EPA determined that a GQRUZ applied to the site (see discussion in Section 5.8 above).

A Statement of Environmental Audit was issued for the site.

This audited site at 156-158 Corrigan Road is considered too distant to pose any significant environmental impact at the subject site.

5.10 Other Relevant Land Contamination Investigations

The s.53V environmental audit report listed in Table **5-4** above, EPA Ref. 8005342; 75018-1, focussed on risks to the environment associated with potentially contaminated spoil generated during construction activity associated with the linear transportation upgrade, referred to as the CTD Project. Appendix M of that audit report contains the following site investigation report associated with post-completion land uses after commissioning of the CTD rail upgrade:

- Coffey (2020), C*TD Alliance - Level Crossing Removal Project - Caulfield to Dandenong Linear Park Suitability Assessment*. Report dated 29 June 2020. Prepared for CTD Alliance by Coffey Services Australia Pty Ltd. Report Ref. 754-ENAUABTF20425AA-R10.

This report provides a summary of the environmental soil assessment works conducted along the CTD Project alignment relevant to the then proposed public linear park areas. The objective of this assessment report for linear parks across Area 1, Area 2 and Area 3 of the CTD Project was to provide the available environmental assessment data to demonstrate the suitability of the land for the open space and commercial uses.

One such portion in ‘Area 3’ comprised the Noble Park Station Precinct. The study area of this portion extended approximately 550 m from the Heatherton Road Community Space to the eastern

end of the Noble Park Station car parks. The study area included the subject site at 51A Douglas Street.

The scope of work for this linear park suitability report included:

- *Desktop review of available site history information and previously collected soil data and geology.*
- *Presentation of sampling methodology information.*
- *Selection of relevant soil screening criteria that are protective of human health and the*
- *environment in the relevant linear park settings.*
- *Comparison of the analytical data set against the adopted screening criteria, and associated discussion of the results.*

Nevertheless, the report by Coffey (2020) is not considered a detailed site investigation (DSI) report within that defined by the ASC NEPM.

At the time of the Coffey (2020) investigations, the Noble Park Station Precinct area was approximately 70% covered by permanent paving, including car parking, building slabs and recreational surfaces. The then proposed open space included rest areas, fitness, play and social spaces.

NATA accredited analytical laboratories were used for all laboratory testing. ALS was used as the primary laboratory and Eurofins-MGT was used as the secondary laboratory. The analytical program took into consideration the historical analytical program and generally comprised:

- *~ 90% of samples for TRH, PAH, BTEX, and metals.*
- *~ 10% of samples for a full IWRG621 broad screen.*
- *~ 20% of samples for fluoride and asbestos (presence/absence).*
- *~ 20% of samples for cation exchange capacity*

For the Noble Park Station Precinct, soil samples were collected at shallow depths (typically less than 1.0mbgl) over a broad grid-based sampling layout. Statistical assessment of the soil test results (estimated mean concentrations at 95% UCL for n=>30 sample analyses for each CoPC) met the NEPM HIL-B, HIL-C and EIL acceptance criteria, indicating that the contaminants in soil do not pose an unacceptable risk to human health in the Linear Park 3 precinct.

On this basis, the Auditor considers that the above work by Coffey (2020) indicated that the CTD Project area in the environs of the new Noble Park Rail Station exhibited a low and acceptable level of soil contamination for land uses involving low level exposure by human receptors (i.e., with minimal opportunities for soil access).

6 Geology and Hydrogeology

6.1 Regional Hydrogeology

The site is underlain by Red Bluff Sandstone comprising of sandstone, conglomerate: pale yellow and brown; and fine to coarse-grained.

The Brighton Group, represented in this area by the Red Bluff Sand Formation, forms a regional aquifer with generally unconfined conditions, and a predominantly clayey and silty sand lithology. In some locations there may be local confinement where the groundwater level is above a lower permeability upper layer. In general, the formation is fine grained but heterogeneous, and lenses of coarser material are present. The Red Bluff Formation has a typical hydraulic conductivity in the order of 1 to 2 m/day, but occasionally as low as 0.01 m/day, and as high as 5 m/day (ERM, 2020 - s.53V Audit Report, EPA Ref. 8005342; 75018-1).

Underlying the Red Bluff Formation is the Fyansford Formation, a regionally extensive Tertiary sedimentary unit with a generally lower hydraulic conductivity, typically around 0.01 m/day, but also with coarse sand and gravelly lenses occurring sometimes near the base. This formation is generally hydraulically connected to the Red Bluff Formation, and the boundary between them can be difficult to discern. The coarser lenses form aquifers of limited extent.

The Silurian Anderson Creek Formation comprises mainly thinly bedded siltstone. This formation functions as a fractured rock aquifer, with a typical bulk hydraulic conductivity of approximately 0.01 m/day.

According to the Victorian Department of Environment, Land, Water and Planning (DELWP) *Groundwater Resource Report*, groundwater beneath the site in the unconfined Brighton Group aquifer is identified as being within an area expected to have TDS concentrations of between 1001 - 3500 mg/L. The average TDS in the area places groundwater in Segment B or C (Table 5.3 of the ERS), with the likely depth to groundwater of 0-13 mbgl within an Upper Tertiary marine sands aquifer (see details Annex E of this PRSA report).

6.2 Site Geology and Hydrogeology

On-site lithology is shown in Table **6-1** below (Peraco, 2021) was derived from the Auditor's review of the results of drilling 9 grid-based on-site soil bores and collection of soil samples.

Table 6-1 – Summary of Site Lithology

(Courtesy Peraco, 2021)

Approximate Depth Interval (mbgs)	Soil lithology
0.0 - 0.8	FILL: Brown/pale grey silty gravel/gravelly silt, coarse sub-rounded to sub-angular gravels, fine grained, dry, poorly graded, occasional crushed rock Note: reworked natural/fill material encountered at two locations along the northern boundary (SB08 and SB07).
0.8 – 1.0	Sandy Clay/Clayey Sand: slightly moist, pale grey to orange/brown, fine grained
1.0 –2.7 (maximum depth of investigation)	Silty Clay: Medium-High plasticity, pale grey to orange, dry/slightly moist, stiff, trace sands.

Such a lithology is considered consistent with the regional geology.

The direction of flow of the regional groundwater is most likely north-east and north towards Mile Creek.

6.3 Existing Use of Groundwater

A search of the Department of Environment and Primary Industries' Water Measurement Information System was undertaken in October 2020 (Peraco, 2020) in order to identify groundwater users within the vicinity of the site. The search identified 105 registered groundwater bores within a 2 km radius of the site, 8 of which were located within 500 m of the site.

Table 6-2 - Summary of Registered Groundwater Bores within 2km, Oct 2020

(Courtesy Peraco, 2020)

Registered Use	No. of Bores	Distance Range from the Site (m)
Groundwater Investigation / Observation	32	147 – 1,733
Domestic & Stock	16	171 – 1,914
Commercial	2	162 - 171
Dewatering	2	220 - 284
Irrigation	3	860 - 934
Public/Town Water Supply	1	992
Unknown	50	990 – 1,988

As of October 2020, the closest registered bore to the site (Bore ID. 115834) was located approximately 147 m north west of the site and was registered for groundwater investigation use, completed in 2011. Geology at this bore was logged to be sandy clay to a depth of 5.0 mbgl overlying sand to the maximum depth of 6.0 mbgl. This well was screened between 3.0 to 6.0 mbgl.

As of October 2020, the closest bore registered bore an extractive use (Bore ID. 58171) was located approximately 284 m north west of the site and was registered for Domestic-Miscellaneous Use, completed in 2019.

A search by the Auditor of the Visualising Victoria's Groundwater online tool for groundwater bores within 2 km of the centre of the site was undertaken in August 2023. Such bores are also shown located in Figure **6-1** below.

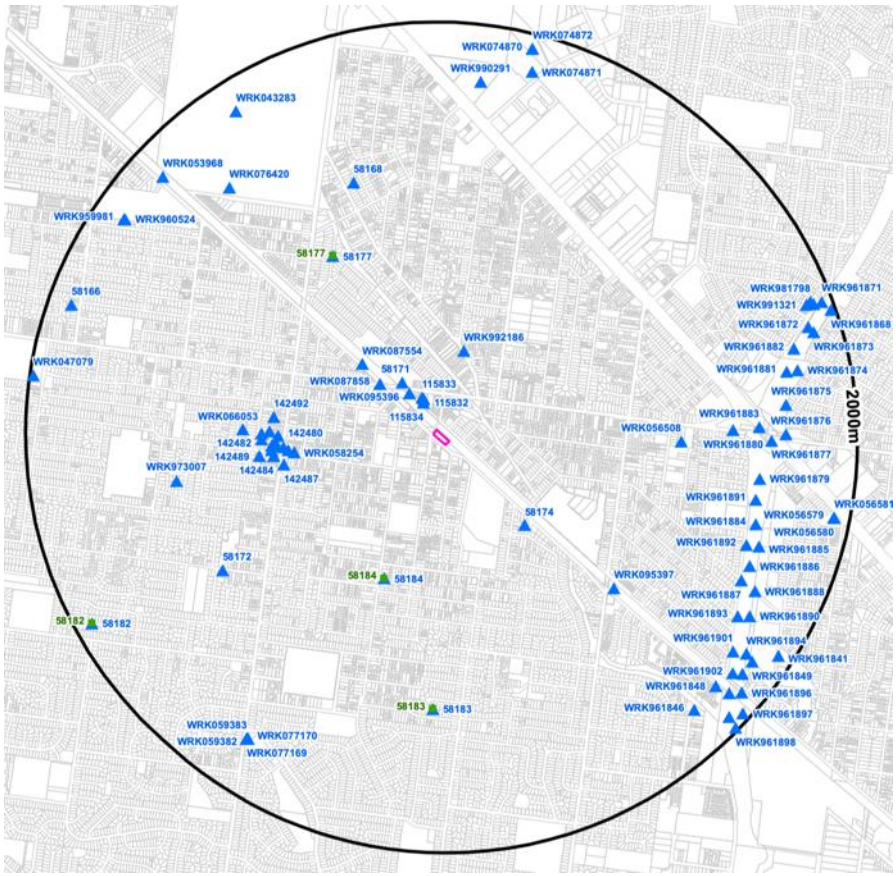
The search indicated that 101 groundwater bores were registered in the 2km radius search area. Consistent with the search by Peraco (2020), as noted above, the Auditor found that:

- the closest registered bore to the site (Bore ID. 115834) was located approximately 147 m north west of the site and was registered for groundwater investigation use.
- the closest bore registered bore an extractive use (Bore ID. 58171) was located approximately 284 m north west of the site and was registered for Domestic-Miscellaneous Use,

The Auditor considers that the closest registered bore used for extractive uses is too distant from the 51A Douglas Street site to be affected by any groundwater contamination that may exist at the subject site.

Figure 6-1 - Locations of Registered Groundwater Bores within 2km, July 2023

(Courtesy Lotsearch, 2023)



7 Environmental Values Considered

7.1 Indicators and Objectives

Within PRSA, the Auditor must assess the potential for the site environmental condition to be detrimental to any **environmental values** of the site. According to the *Environmental Reference Standard* ("ERS", dated 25 May 2021 and made under section 93 of the *Environment Protection Act 2017*), 'environmental values' are the uses, attributes and functions of the environment that Victorians value. Some examples are water that is safe to drink; air quality that sustains life, health and wellbeing; land that is suitable for production of food; and an appropriate ambient sound environment.

The Act states (section 93[1]) that the ERS is to be used 'to assess and report on environmental conditions in the whole or any part of Victoria'. The ERS is an environmental benchmark. It brings together a collection of environmental values, indicators and objectives that describe environmental and human health outcomes to be achieved or maintained in the whole or in parts of Victoria.

Importantly, in the context of a PRSA, the ERS allows decision makers (as well as environmental auditors) to evaluate potential impacts on human health and the environment that may result from a proposal or activity (see EPA Publication 1992, dated June 2021).

In using the ERS, 'indicators' and 'objectives' are selected by an environmental on the basis that any possible environmental values may be feasible, with preference for any existing and likely future uses of the site. All likely 'sensitive uses' (such as a residence) will also be considered.

Indicators are usually defined in relation to each environmental value. The indicators are the parameters or markers used to assess whether environmental values are being achieved or maintained, or if they are threatened.

Objectives are the assessment benchmarks. An objective is the character, level, load, concentration or amount of an indicator used to assess whether an environmental value (or several environmental values) is being achieved, maintained or threatened. Most objectives are scientifically derived quantitative assessment levels or a prescribed scientific basis for assessment.

In the event that contamination on a site prevents the protection of an environmental value, the Auditor will conclude that the condition of the site is detrimental or potentially detrimental to the environmental value.

The complexity of the environment means that the environmental values for land are, by necessity, general in nature. ERS clause 10(3) describes circumstances where an environmental value may not apply to the land environment. It is important to note that an environmental value of the land environment may not apply to a site if either:

- the background level of an indicator is greater than the relevant objective; or
- the achievement or maintenance of the environmental value is impracticable due to characteristics of the site.

Environmental values of land may also not apply in instances where protections under other legislation prevent the land being used for an environmental value.

7.2 Elements of the Environment

The PRSA must assess the land environment and water environments (groundwater and surface water, including sediment). In doing this, an environmental auditor must consider the environmental values for these elements of the environment.

An 'element' of the environment is defined as any of the principal constituent parts of the environment including waters, atmosphere, land, vegetation, climate, sound, odour, aesthetics, fish and wildlife.

For this site, and taking into account the land use zoning and the uses that are permitted, relevant elements are considered to be the following;

- Land on the site;
- Groundwater beneath the surface of the site and down-hydraulic gradient of the site;
- Any surface water on the site.
- Any surface water run-off from the site;

On this basis, the above elements are considered relevant and therefore part of the relevant segment for the purposes of the PRSA.

7.3 Status of Land in the PRSA

The framework for the prevention of contamination of land is defined in Part 4 of the ERS. The ERS defines 'land environment' as including soil, fill, rock, weathered rock and sand, the vapour and liquids within interstitial space in the unsaturated zone, and sub-aqueous sediment. (While the definition of land in section 35 of the Act [with respect to contaminated land] includes groundwater, the ERS addresses groundwater as part of the water environment.)

The ERS outlines certain land use categories and associated environmental values to be protected and sets out corresponding environmental quality indicators and objectives. The EPA also requires that a PRSA should consider the land use zoning and the uses that are permitted. Land uses permitted under the current zoning of the site (MUZ) are discussed in Section 4.2.2 above.

The ERS includes five environmental values that apply to Victoria's land environment. These are included in Table 4.1 of the ERS and briefly described as:

- land dependent ecosystems and species;
- human health;
- buildings and structures;
- aesthetics; and
- production of food, flora and fibre.

Clause 11 of the ERS identifies six types of land uses: parks and reserves, agriculture, sensitive use, recreation / open space, commercial and industrial. These land use types are broadly consistent with the planning zones specified in the Victorian Planning Provisions (VPP). The

categories include the most common types of land use and are based on those provided in the NEPM (ASC).

Some environmental values require access to soil for them to be realised. Accordingly, sensitive use is divided into two main categories – high density and other (lower density). This is in recognition that some developments make maximum use of the land area, resulting in minimum access to soil, whereas other developments result in substantial access to soil (EPA Publ'n 1992, June 2021).

For example, there are childcare centres in high-density suburbs with limited access to soil, and others in outer suburbs where the children have ready access to soil. Similarly, a sensitive use in an inner-city area may have different indicators when compared to a sensitive use in an outer suburban area. For example, a key pathway of exposure to contamination for sensitive land use is through food production, such as home-grown vegetables or urban farming.

In inner city areas, food will likely be grown in above-ground containers or in restricted areas due to limited access to the underlying soil, so the potential exposure to contamination at a specific site is often low. However, in the outer suburbs (or in inner suburban sites with sufficient space), plants may have substantial access to the underlying soil, meaning the potential for exposure to contaminated soil is higher.

Therefore, a sensitive land use type may occur in a high-density development area where access to underlying soil is minimal, or in an area where the access to the underlying soil is greater. Section 10.3 below discusses the aspect in relation to the subject site.

The environmental values of land to be protected are dependent on the proposed land use and are shown in Table **7-1** below.

Table 7-1 – Environmental Values of Land

Environmental Value	Land Use							Remarks
	Parks and Reserves	Agriculture	Sensitive Use (high density)	Sensitive Use (lower density)	Recreation / Open Space	Commercial	Industrial	
Land dependent ecosystems and species: natural ecosystems	✓							Land quality that is suitable to protect soil health and the integrity and biodiversity of natural ecosystems, modified ecosystems and highly modified ecosystems.
Land dependent ecosystems and species: modified ecosystems	✓	✓		✓	✓			
Land dependent ecosystems and species: highly modified ecosystems		✓	✓	✓	✓	✓	✓	

Environmental Value	Land Use							Remarks
	Parks and Reserves	Agriculture	Sensitive Use (high density)	Sensitive Use (lower density)	Recreation / Open Space	Commercial	Industrial	
Human Health	✓	✓	✓	✓	✓	✓	✓	Land quality that is suitable for the specific land use and safe for the human use of that land. Persons may be exposed to uncovered soil (e.g. where buildings or pavements do not exist and in garden areas). Workers engaged in subsequent excavations for construction or maintenance purposes may also be exposed to the soil. Volatile organic vapours can also migrate through structures, potentially exposing occupants to these substances.
Buildings and Structures	✓	✓	✓	✓	✓	✓	✓	The soils should not attack or degrade building materials such as buried unprotected steel or concrete.
Aesthetics	✓	✓	✓	✓	✓	✓		Aesthetic issues include the quantity, type and distribution of foreign material or odours in relation to the specific land use and its sensitivity. The soil should not be offensive to the senses of human beings (e.g. visually offensive or odorous).
Production of flora and fauna and fibre	✓	✓		✓				Land quality that is suitable for the safe human consumption of food, flora and fibre and that does not adversely affect produce quality or yield.

(Highlighted beneficial uses apply to the subject site and considering the proposed land use)

7.4 Objectives for Assessment of Contaminated Land

Table 4.3 of the ERS outlines objectives and indicators to allow determination of whether the level of any contaminant at any site poses an unacceptable risk to an environmental value. Table **7-2** below shows the environmental values and corresponding indicators applicable for this PRSA.

Table 7-2 – PRSA Indicators for Protection of Environmental Values

Environmental Value	Indicators
Land dependent ecosystems and species	Inorganic and organic contaminants set out in Appendix A of Schedule B2 of the NEPM (ASC) and any other contaminants present at the site as determined by the current use or site history assessed in accordance with the NEPM (ASC).
Protection of human health	Contamination must not cause an adverse effect on human health and the level of any indicator must not be greater than the investigation levels specified in the NEPM (ASC). Inorganic and organic contaminants set out in Appendix A of Schedule B2 of the NEPM (ASC) and any other contaminants present at the site as determined by the current use or site history assessed in accordance with the NEPM (ASC).
Buildings and structures	pH, sulfate, chloride, redox potential, salinity or any chemical substance or waste that may have a detrimental impact on the structural integrity of buildings or other structures.
Aesthetics	Any chemical substance or waste that may be offensive to the senses
Production of food, flora and fibre	Inorganic and organic contaminants set out in Appendix A of Schedule B2 of the NEPM (ASC) and any other contaminants present at the site as determined by the site history assessed in accordance with the NEPM (ASC).

7.5 Soil Investigation Levels

7.5.1 Definition

To evaluate the risk to environmental values, environmental data representative of the site condition is screened against investigation levels. The investigation level is defined by NEPM (ASC) (Schedule B1) as follows:

Investigation levels *(and screening levels) are the concentrations of a contaminant above which further appropriate investigation and evaluation will be required. Investigation and screening levels provide the basis of Tier 1 risk assessment. A Tier 1 assessment is a risk-based analysis comparing site data with generic investigation and screening levels for various land uses to determine the need for further assessment or development of an appropriate management strategy. The application of investigation and screening levels is subject to a range of limitations.*

An investigation level is not a clean up goal, nor does it indicate the need for remedial action. Rather it identifies situations that require further consideration.

The Auditor has compared results of the site investigations with threshold environmental and health investigation levels as outlined in the following sections.

7.5.2 Maintenance of Highly Modified Ecosystems

The Auditor has adopted the following Ecological Investigation Levels (EILs) and Ecological Screening Levels (ESLs) from the NEPM (ASC), Schedule B1:

- EILs for the protection of terrestrial ecosystems have been derived for common soil contaminants based on a species sensitivity distribution model developed for Australian conditions. EILs depend on site-specific soil physicochemical properties, land use scenarios and background conditions, and have been derived for arsenic, copper, chromium (III), nickel, lead, zinc, DDT and naphthalene.
- ESLs for the protection of terrestrial ecosystems have been developed for selected petroleum hydrocarbon compounds and fractions. ESLs broadly apply to coarse- and fine-grained soils and site-specific land uses.

Such criteria have also been adopted for the assessment of the environmental value *Production of flora and fauna and fibre*.

Application of EILs requires assessment of background soil conditions, as the majority of EILs are calculated based on a maximum added contaminant limit (ACL) above the ambient background concentration (ABC), which includes naturally occurring background plus a contribution from diffuse pollution sources such as motor vehicle emissions.

EILs and ESLs are applicable to the soil within 2 m of the site surface, unless extensive earthworks are planned. For this audit, on-site and off-site soil conditions were assessed against commercial/industrial land use criteria (60% species protection), and urban residential/public open space land use criteria (80% species protection).

The methodology assumes that only contaminant levels over and above this background concentration could have an adverse effect on the environment. EILs are not applicable to agricultural soils. These soils need to be evaluated in relation to crop toxicity, plant contaminant uptake and consideration of soil type.

Toxicity of soil contamination (organic and inorganic) generally reduces over time to a lower or more stable level by binding to various soil components and decreasing their biological availability. For the purpose of EIL derivation, a contaminant incorporated in soil for at least two years is considered to be aged contamination. Fresh contamination is usually associated with current industrial activity and chemical spills.

For COPCs for which there are no EILs/ESLs published in the ASC NEPM, the Auditor/Assessor may choose to adopt international criteria or to develop site-specific criteria using risk assessment.

7.5.3 Human Health Guidelines

For assessment of environmental value of human health, the Auditor has adopted the following health investigation levels (HILs) from the NEPM (ASC), Schedule B1:

- For assessment of sensitive land uses: HIL-As – ‘standard’ residential with gardens/accessible soil (with home grown produce contributing less than 10% of vegetable and fruit intake and no poultry), also includes children’s day care centres, preschools and primary schools; and
- For assessment of high-density residential areas: HIL-Bs – residential with minimal opportunities for soil access includes dwellings with fully and permanently paved yard space such as high-rise buildings and flats.

As a minimum, the maximum or 95% UCL should be compared to the HILs [NEPM (ASC), Section 1.3.2, Schedule B7]. However, where there is sufficient data and it is appropriate for the exposure being evaluated, the arithmetic mean (or geometric mean in the case of a log normal distribution) should also be compared to the HILs. The relevance of localised elevated values should be considered and should not be obscured by consideration only of the relevant mean of the results.

The results should meet the following criteria:

- the standard deviation (SD) of the results needs to be less than 50% of the HIL; and
- no single value exceeds 250% of the HIL.

For analytes where there are no health investigation levels published in the NEPM (ASC), the Auditor has considered the following additional guidelines:

- NEPM (ASC) Schedule B1 (and CRC CARE - Friebel and Nadebaum - 2011): Soil Health Screening Levels (HSLs) for Direct Contact - available for BTEX, naphthalene and TRH; and
- NEPM (ASC): Management Limits (MLs) for petroleum hydrocarbon compounds, which protect against imminent fire and explosive hazards; and where warranted.
- USEPA (2019): Regional Screening Levels for Chemical Contaminants – residential and industrial soil screening levels – used for screening soil COPCs where Australian guidelines are not available.

7.5.4 Aesthetics

The ERS requires that land not be offensive to the senses of human beings based on contamination. Aesthetic issues may include discoloured or malodourous soils and soils with unusual consistency or containing waste.

This environmental value helps to ensure the community lives in an aesthetically pleasing environment that is not degraded by the effects of land contamination.

7.5.5 Buildings and Structures

According to the ERS, the integrity of structures or building materials should not be adversely affected by or corroded by contamination on the land. The Australian Standard 2159-2009 *Piling Design and Installation* outlines the classification for exposure of concrete and steel materials. The exposure conditions relate to levels of sulphates, chlorides, and pH in the soil and how these influence engineering design requirements for subsurface infrastructure (including footings, pits, sumps, pipes, drains etc.)

It is also noted that the ASC NEPM MLs for petroleum hydrocarbon compounds have been derived to avoid or minimise the potential for adverse effects on buried infrastructure, such as penetration of, or damage to, in-ground services.

7.5.6 Production of food, flora and fibre

The use of land for the production of crops (including food, timber and flowers) and pastures for the farming of animal produce is extensive in Victoria. However, the production of food, flora and fibre is not limited to an agricultural environment. While food, flora and fibre may not be 'farmed' in other land use environments, parks, reserves and the sensitive land use environments (including residential land) support this environmental value to a greater or lesser extent (for example, home vegetable production, backyard chickens). In addition, food production on land under water, such as flood irrigation for growing rice, is also recognised.

The Auditor has adopted Ecological Investigation Levels (EILs) and Ecological Screening Levels (ESLs) from the NEPM (ASC), Schedule B1, have been adopted for the assessment of the environmental value *Production of flora and fauna and fibre*.

7.6 Status of Groundwater in the PRSA

The PRSA is expected to assess the land environment and water environments (groundwater and surface water, including sediment). In doing this, the environmental auditor must consider the environmental values for these elements of the environment.

Nevertheless, the EPA guidance on PRSAs states that the sampling or assessment of groundwater if not obligatory for the conduct of a PRSA, and therefore should not be undertaken as a routine part of any limited sampling program. If sampling of groundwater it is warranted in the opinion of the auditor, EPA advises that groundwater sampling or assessment should be determined based on the likely source (on-site or off-site) of contamination, and whether there is an existing or likely exposure pathway in the context of the existing or proposed land use.

Clause 15 of the ERS is used to identify the environmental values for groundwater based on the segment classification. To determine the groundwater environmental values for the site and proposed activity, both regional groundwater conditions and current use onsite are considered. Another consideration is how groundwater is currently being used off-site and whether this use could change in the future. The relevant environmental values for groundwater are:

- water dependent ecosystems and species;
- potable water supply (acceptable);
- agriculture and irrigation (irrigation and stock-watering);
- industrial and commercial use;
- water-based recreation (primary contact);
- Traditional Owner cultural values; and
- buildings and structures.

Potable mineral water supply and geothermal properties are not considered to be environmental values at the subject site as the property is not within or near a mineral springs area and the inner Melbourne aquifers do not have geothermal properties.

When determining whether an environmental value is ‘likely’ or ‘existing’, EPA requires that auditors give consideration to both registered and unregistered bores. Where a bore is installed and registered for a use, in the absence of evidence to the contrary, the relevant environmental value must be considered existing. Bores used for drought relief are considered to represent an existing use, even if they are not in use at the time of the audit.

In the absence of evidence to the contrary, where a bore is registered for stock and domestic use, the relevant environmental values must be assumed to be existing.

In cases where groundwater is shallow (less than 3 metres below ground level), or a development includes excavation that approaches the water table, direct contact with groundwater may occur during construction or occupation of a development. In these circumstances and if chemical substances in concentrations greater than background levels have been identified in groundwater, the auditor must consider potential risks to human health caused by direct contact.

Clause 14 and Table 5.2 define segments of groundwater based on values of Total Dissolved Solids. Environmental values appliable to each groundwater segment are defined in Table 5.3 of the ERS. Indicators and objectives for groundwater are defined in Table 5.4 of the ERS.

8 Preliminary Conceptual Site Model

8.1 What is a CSM?

Appendix B of the EPA PRSA guidelines require that the PRSA report includes a description and outline of the initial conceptual site model with consideration of potential source - receptor - pathway linkages. Accordingly, a conceptual site model (CSM) has been prepared (below) by the Auditor to assist in the qualitative representation of contamination risks that may be present at the site. A CSM is a representation of site-related information regarding contamination sources, receptors and exposure pathways between those sources and receptors[1].

As set out in Section 6.2 of EPA Publication 1992, *Guide to the Environment Reference Standard* (June 2021), the development of a CSM is an essential part of all site assessments and provides the framework for identifying how the site became contaminated and how potential receptors may be exposed to contamination either in the present or the future.

8.2 Potential Sources

8.2.1 Sources Inferred from Site History Information

In considering the potential for contamination of the site, the Auditor has taken into account Section 9 of the PSI Report by Peraco (2020), as contained in Annex F of this PRSA Report.

Given the history of relatively benign uses at the site (eg open-air car parking), the Auditor considers that the site is unlikely to represent a potential source of site contamination (see Sections 5.2 and 5.3 above). The Auditor notes for example that according to *Planning Practice Note 30*[2], the historical use of the site for carparking presents an overall low potential for site contamination.

Given the nearby railway reservation, it is nevertheless conceivable that in some areas on or near the site, ash ballast (possibly containing metals, phenols, sulphates and polycyclic aromatic hydrocarbons (PAHs)), may be found. However, no such evidence was found of such materials in the intrusive site investigations described in Section 5.10 above. Moreover, Peraco (2020) states that:

The site history review did not indicate that the site had been used as 'rail yards'. A rail yard typically has a complex series of railroad tracks for storing, sorting, or loading and unloading, railroad cars and locomotives and none of this activity was evident from the review.

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[1] See the NEPM (ASC), Section 4 of Schedule B2.

[2] *Planning Practice Note 30 - Potentially Contaminated Land* (PPN30), dated July 2021 by DELWP, now referred to as the Department of Transport & Planning. PPN30 provides guidance on determining which type of environmental assessment is appropriate for a given planning scenario for a site which may be contaminated.

The extent of soil contamination across the site may therefore be limited or even negligible. Similarly, the site is not likely to be a source of impacts to the underlying groundwater, although the Auditor recognises that a former service station/vehicle workshop existed near the site across Douglas Street (see Section 5.4 above), which apparently operated over the period 1965-1991. Although there is no evidence known the Auditor that such a premises may have been a source of petroleum hydrocarbon impacts to groundwater, the Auditor considers that any such impacts would have naturally attenuated over the 32 years since closure of that business.

The Auditor considers it unlikely that contamination of groundwater by petroleum hydrocarbons exists at the subject site at 51A Douglas Street. The Auditor also considers that other potential off-site sources of groundwater contamination are too distant to pose any significant environmental impact at the subject site (see Sections 5.4 and 5.9 above).

8.2.2 Sources Inferred from Auditor's Site Inspection

The Auditor made an inspection of the subject in August 2023. The Auditor found no visible or olfactory evidence of potential site contamination during that inspection. There was no evidence of stained or odorous fill or natural soil, or wastes, or potential asbestos-containing materials, or distressed vegetation.

8.3 Contaminants of Potential Concern

The principal contaminants of potential concern (CoPCs) are considered by the Auditor based on the site history, review of available reports[3], the urban setting of the site and the site inspection, to be to be those set out in Table **8-1** below.

Table 8-1 - Contaminants of Potential Concern

Use	Contaminant of Potential Concern
On-Site	
Imported fill	Metals (Arsenic), polycyclic aromatic hydrocarbons (PAHs), total recoverable hydrocarbons (TRH), organochlorine pesticides (OCPs), asbestos containing material
Car parking	Metals, polycyclic aromatic hydrocarbons (PAHs), total recoverable hydrocarbons (TRH)
Off-Site	
Service stations/Motor Garages	Monocyclic aromatic hydrocarbons (MAHs), TRH, PAH, phenols, solvents, chlorinated hydrocarbons, volatile organic compounds (VOCs), metals (including lead)
Dry cleaners	VOCs, solvents including chlorinated hydrocarbons
Substation (electrical/ power station)	TRH, PAHs, PCBs, asbestos

The Auditor has assessed the site history and reported laboratory analyses (Peraco, 2020) and is satisfied that the above analytes appropriately cover the CoPCs for the site.

[3] Also taken into account by the Auditor was the following UK guidance on potentially contaminating industries: DoE (1996), *Industry Profile Series: Profile of Railway Land*." UK Department of the Environment. ISBN 1 85112 313 X.

8.4 Potential Receptors

Based on the gathered information, it is anticipated that exposure by the following receptors to CoPCs from soil or groundwater at the site may occur (given the proposed use for commercial/residential use):

- Flora and fauna;
- Humans:
  - Current and future on-site residents and visitors;
  - Future on-site construction and maintenance workers;
  - Off-site residential or commercial users and visitors.
- Aquatic ecosystems where groundwater may discharge to surface water (e.g. Mile Creek and/or Port Phillip Bay);
- On-site and off-site extractive users of groundwater.
- Buildings on-site may be exposed to corrosive or aggressive ground conditions.

8.5 Potential Pathways

Due to the proposed commercial/residential building extending across all of the site, coupled with the lack of extractive uses of groundwater from beneath the site, the Auditor considers that the following pathways for exposure to the identified CoPCs are incomplete:

- Dermal contact with, or inhalation or ingestion, of surface and sub-surface soils by humans and fauna;
- Dermal contact with, or consumption or ingestion, of extracted groundwater or surface water by humans and fauna;
- Exposure to surface and sub-surface soils by on-site flora;
- Consumption of home-grown vegetables by humans and fauna.

The Auditor considers that the following pathways for exposure to the identified CoPCs are potentially complete:

- Dermal contact with, or inhalation or ingestion, of surface and sub-surface soils by construction or maintenance workers conducting intrusive (subsurface) activities;
- Surface water discharge to Mile Creek;
- Vertical migration of any soil impacts leached to underlying groundwater;
- Vertical and lateral migration of chemicals especially through gravel or permeable fill around underground services e.g. sewers and drains; and
- Migration off-site of any contaminants dissolved in groundwater.

The following Section 9 of the report considers the Auditor's review of the site investigations conducted at the site by Peraco (2020 and 2021), taking into account the above conceptual site model.

9 PSI and DSI Report Review

9.1 Preliminary Site Investigation Report

A PSI was undertaken by Peraco October 2020. The PSI Report is contained in Annex F of this PRSA report (being Appendix A of Peraco, 2021).

9.1.1 Purpose and Findings

The purpose of the PSI was to determine whether there is potential for former or current activities or surrounding land use activities to have resulted in contamination of the site which would cause significant human health or environmental risk.

The findings of the PSI were taken into account by Auditor is compiling Sections 4, 5 and 6 above.

9.1.2 Conclusions of the PSI

Given the findings of the site history review and the historical use of the site for car parking and lack of evidence to indicate that the site was used as rail yards, the PSI found that the site had a "low potential for contamination".

In terms of proposed commercial/residential development of the site, the PSI investigation did not identify any significant site activities that were likely to have resulted in material soil and/or groundwater contamination.

Whilst Peraco considered that a low likelihood of contamination that may have arisen from volatile hydrocarbons at nearby former dry cleaners and/or service station, it also advised that intrusive investigations, such as a limited Detailed Site Investigation (DSI), would be required to quantify this risk (if present).

9.2 Auditor Comments on PSI Conclusions

In reviewing the PSI Report, the Auditor makes the following comments on the conclusions of that report:

- The Auditor agrees with the statements made in Section 6.0 of the PSI report that the site has a "low potential for contamination".

Other conclusions and recommendations provided in the PSI report are not unreasonable but not strictly relevant to the purpose and scope of this PRSA.

9.3 Limited DSI Soil Assessment

9.3.1 Objectives and Scope

The objective of this limited scope DSI by Peraco (2021) was to assess, based on a limited soil and soil vapour assessment, the potential for soil and/or soil vapour contamination to be present at the site which may be associated with current and historical site uses and activities which have occurred on-site (with respect to the soil investigations) and/or from surrounding sites (with respect to the soil vapour investigations).

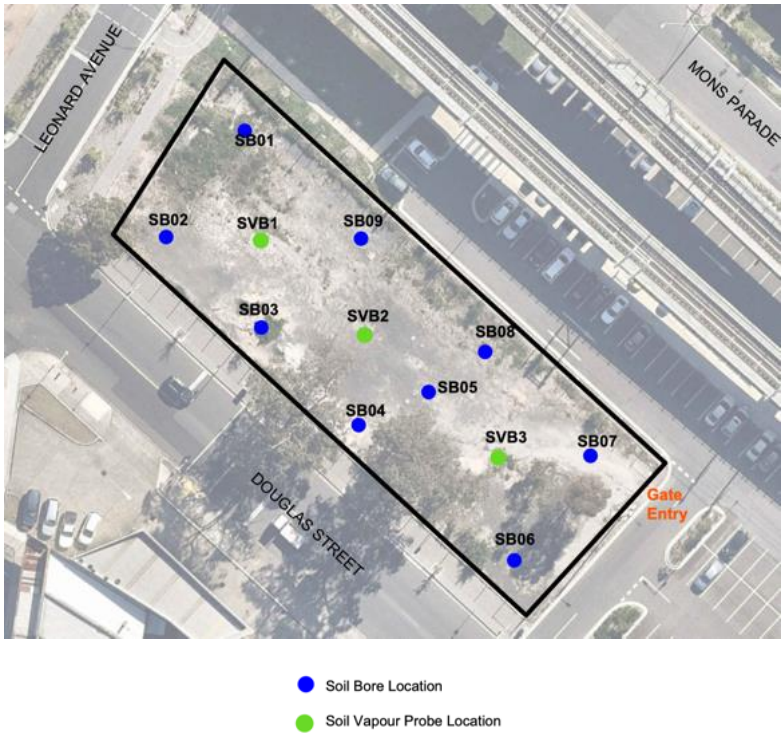
To address the above objective the following works were undertaken by Peraco:

- The completion of a Preliminary Site Investigation (PSI) to inform the work scope (the PSI was completed prior to the DSI works).
- Undertake an intrusive site investigation, including drilling 9 grid-based soil bore locations and collection of soil samples.
- Field screening of soil samples for volatile contaminants using a photo-ionisation detector (PID.
- Logging of all boreholes including lithology, sample collection and any observations (e.g., staining or odour).
- Installation of three soil vapour probes and the completion of one soil vapour sampling event followed by a supplementary vapour monitoring event for location SVB2.
- Laboratory analysis of selected soil samples and soil vapour samples at NATA accredited laboratories for contaminants of potential concern.
- Preparation of a detailed report presenting the investigations, findings and conclusions.

The layout of such sampling locations is depicted in Figure **9-1** below.

Figure 9-1 – DSI: Site Sampling Locations

(Courtesy: Peraco, 2021)



9.3.2 Sampling Methodology and Collection

Soil assessment works were undertaken at the site in February 2021 and comprised the advancement of 9 boreholes (SB01 to SB09) grid-based locations across the site. The soil bores were advanced by drilling using the push tube method to a maximum depth of 2.7 mbgl.

Soil bore logs are included in Appendix B of Peraco (2021) – see Annex F of this PRSA report.

At each soil bore location, discrete soil samples were collected from the fill (where encountered) and natural material, and at notable changes in the soil strata and where field observation indicate potential impacts (i.e., soil staining and/or odorous). Soil samples were screened for the presence of volatile organic compounds using a Photo-Ionisation Detector (PID).

The soil vapour investigation of the site is described in Section 9.3.6 below.

9.3.3 Soil Investigation Observations

The observed lithology of the site is discussed in Section 6.2 above in this PRSA report.

Recorded PID readings were very low and ranged from 0 to 0.9 ppm.

No visible asbestos containing material (ACM) was identified during the soil investigation.

9.3.4 Soil Sample Analysis

Two samples from each soil bore location (one soil sample in the fill material and one soil sample in the underlying natural soil) were submitted to a NATA accredited laboratory for analysis for

contaminants of potential concern (COPC). Eurofins Australia (Eurofins) was used as the Primary laboratory and ALS Group (ALS) used as the secondary laboratory.

The COPC Suite included:

- Total recoverable hydrocarbons (TRH);
- benzene, toluene, ethylbenzene, xylenes and naphthalene (collectively known as BTEXN);
- polycyclic aromatic hydrocarbons (PAH); and
- metals (arsenic, cadmium, mercury, copper, chromium, lead, nickel, and zinc).

At selected locations, the EPA IWRG621 suite was added to the analytes in the COPC suite above:

- Volatile organic compound (VOCs) including chlorinated solvents;
- Phenols;
- Organochlorine pesticides (OCPs);
- Polychlorinated Biphenyls (PCBs);
- Vinyl chloride;
- Hexavalent chromium, iron, silver, selenium, molybdenum and tin, cyanide; Total fluoride; and
- pH (incl $CaCl_2$), iron, cation exchange capacity (CEC) and clay content.

The Auditor is satisfied that the above list of laboratory analytes is consistent with the potential contaminants at the site as described in Section 8.3 above.

9.3.5 Soil Analysis Results and Discussion

Tabulated test results for the soil analyses are shown in Annex A of this PRSA report.

A comparison of the laboratory analysis results against the adopted ecological and human health assessment criteria is presented in Tables 1A and 1B of Peraco (2021), and the soil exceedance summary is presented in Figure 3. Laboratory certificates of analysis are presented in Appendix D of Peraco (2021) – see Annex F of this PRSA report.

The following sections provide a discussion of the results with reference to the environmental values of the land (see discussion in Section 7 above) for the proposed high-density residential and commercial site use.

9.3.5.1 Maintenance of Highly Modified Ecosystems

Concentrations of copper were reported above the adopted site-specific Ecological Investigation Level (EIL) for Urban Residential & Public Open Space (35 mg/kg) at one location in the fill material (SB09_0.2-0.3) with a reported concentration of 47 mg/kg. A statistical evaluation of the copper concentrations in fill material at the site was performed and indicated an estimated mean concentration at a 95% UCL of 31.94 mg/kg, which is below the adopted ASC NEPM EIL.

The Auditor is satisfied that the environmental value, Maintenance of Highly Modified Ecosystems, is protected at the site in the context of the proposed high-density residential and commercial setting.

9.3.5.2 Human Health

Concentrations of lead were reported above the adopted human health criteria for low -density residential land use (HIL-A, 300mg/kg) at one location in the fill material (SB01_0.3-0.4) with a reported concentration of 470 mg/kg, the reported concentration was below the criteria for high-

density residential land use (HIL-B, 1,200 mg/kg). The underlying natural sample at 1.0-1.1 mbgl reported a lead concentration of 6.7 mg/kg.

The pH of the fill material ranged from 5.7 to 9.3 pH units while the pH of the natural material reported at pH of 8.0 pH units with both exceedances of the adopted human health criteria for pH in fill and natural soil. In relation to human health and the reported pH range, the only issues of concern relate to direct contact with soil and the potential for skin irritation. Peraco (2021) has demonstrated to the satisfaction of the Auditor, with reference to relevant published studies, that the range of pH in soil at the site is not expected to represent an unacceptable risk to human health.

Based on the Auditor's review of the analytical results for soil (including the results for lead), the Auditor is satisfied that the following ASC NEPM criteria have been met:

- the standard deviation (SD) of the results is less than 50% of the respective HIL-B screening value; and
- no single value exceeded 250% of the HIL-B.

In summary, all analytes were below the adopted assessment criteria for the proposed high-density residential and commercial land use (ASC NEPM HIL-B) indicating the environmental value, Human Health, is protected at the site in the context of the proposed high-density residential and commercial setting.

9.3.5.3 Buildings and Structures

Soil pH at the site ranged from 5.7 to 9.3 pH units. As per Australian Standard AS2159-2009, low permeability soils (e.g., silts and clays) with pH >5.5 assume a non-aggressive exposure classification for concrete piles in soil.

On this basis, the environmental value, Buildings and Structures, is considered protected at the site.

9.3.5.4 Aesthetics

Staining and odour were not reported during the soil investigations works as confirmed by the PID results (all results <0.9 ppm). Fill material consisted of silty gravel/gravelly silt with occasional crushed rock; no foreign material which would be considered aesthetically unacceptable was noted.

On this basis, the environmental value, Aesthetics, is considered protected at the site.

9.3.6 Soil Vapour Investigations

Sub-surface vapour bores were installed at three locations in February 2021 in accordance with the guidelines contained in CRC CARE *Technical Report 23*. The soil vapour bores (all installed at depth of about 1.3 metres within 1.5 metre deep boreholes),

Figure **9-1** above shows the sampling locations.

For all soil vapour sampling events prior to sampling the bores the probes were purged and in-situ field measurements for atmospheric gases methane, carbon dioxide, carbon monoxide, oxygen, sulphide and VOCs were undertaken using a landfill gas analyser and PID. This test was then repeated post sampling.

A vapour probe integrity check was performed at each location prior to sampling. This involved the placement of a shroud over the vapour bore which was enriched with helium, the vapour bores were monitored using a helium detector.

During sampling the vapour bores and sample system were leak checked to quantify any potential leaks while they were sampled using canisters. This involved the placement of a helium enriched shroud over the sampling system (vapour bore and canister). To calculate a potential leak rate the concentration of helium inside the shroud was monitored with an in-situ meter while the vapour pins were sampled. After the canister was sampled it was then analysed for helium.

Each soil vapour bore was sampled using verified clean 1.0L summa canisters in accordance with USEPA TO-15, CRC CARE *Technical Report 23* and Eurofins In-House Method LTM-AIR-1010_RO. Method TO-15 determines volatile organic compounds (VOCs) in air collected in specially prepared canisters and analysed by gas chromatography/ mass spectrometry (GC/MS).

Tabulated test results for the soil vapour monitoring events are shown in Annex A of this PRSA report. Following a review by the Auditor, the results of the soil vapour assessment show no concentrations were exceeding the ASC NEPM Interim Soil Vapour *HILs or HSL 'A & B' Setting - Low to High Density Residential* (or any of the additional assessment guidelines consulted by Peraco).

Low but detectable concentrations of 1,2,4-trimethylbenzene, acetone, chloroform, ethylbenzene, xylenes, toluene, TRH >C_{10}-C_{12} and TRH F2 were recorded at one or more locations, however, the concentrations are all below the adopted guidelines.

Peraco considered that the results indicated a low risk to future occupants of the proposed development via the vapour inhalation pathway.

9.3.7 DSI Quality Assurance and Quality Control (QA/QC)

Based on the Auditor's review of the DSI report (Peraco, 2021), the Auditor is satisfied that the QA/QC programs implemented for the DSI conducted by Peraco (2021) are considered acceptable for the purpose of this assessment.

Sampling procedures were undertaken using the guidance of AS4482.1-2005, AS4482.2-1999, EPA Victoria Publications IRG701 - Sampling and Analysis of Waters, Wastewaters, Soils and Wastes.

During the course of fieldworks, quality control samples were collected, including trip blank, rinsate and replicate (intra- and inter laboratory) samples. Peraco carried out a review of the field and laboratory quality control and assurance assessment were undertaken and presented in Appendix G of Peraco (2021). Soil and Soil Vapour quality control RPD results are present in Tables 4A and 4B and Trip Blank results are presented in Tables 3A and 3B of Peraco (2021).

9.4 Auditor Comments on DSI Conclusions

In reviewing the DSI Report by Peraco (2021), the Auditor makes the following comments on the conclusions of that report:

- The Auditor agrees that Peraco undertook intrusive investigations through this limited scope DSI which involved both soil and soil vapour assessments.
- The Auditor agrees that that the spatial layout and depth of the soil (and soil vapour) sampling locations was appropriate in order to characterise any contamination at the site.
- The Auditor agrees that the QA/QC programs implemented for the DSI conducted by Peraco (2021), including laboratory suitability and analytical protocols, were acceptable for the purpose of this assessment.
- The Auditor agrees with the statements made in Section 7.0 of the PSI report that the results of the soil and soil vapour assessments indicate that the site has a "low potential for contamination".
- Given the results of the PSI and the data gathered from the limited scope DSI, the Auditor agrees the potential for groundwater contamination from historic site activities is considered to be low.

10 Environmental Values at the Site

10.1 Approach to Assessing the Likelihood of Contamination

The EPA requires that the PRSA must assess the land environment and water environments (e.g. groundwater). In doing this, the environmental auditor must consider the environmental values for these elements of the environment (EPA *Guideline for Conducting Preliminary Risk Screen Assessments,* published by the Environment Protection Authority, February 2022).

In the following Sections, the Auditor has assessed the likelihood of the land being contaminated land and, if so, the need for an environmental audit considering the environmental values that apply to the site, as set out in Table **7-1** above.

10.2 Likelihood of Soil Contamination

The environmental values of land associated with the proposed and potential uses of the site are outlined in Section 7 of this audit report. An assessment of the likelihood of harm, detriment or risk to environmental values of the site posed by the current condition of the site follows.

10.2.1 Land Dependent Ecosystems

The Auditor considers that in the context of the environmental value, *Land dependent ecosystems and species: highly modified ecosystems*, the site is unlikely to be contaminated land.

10.2.2 Human Health

The Auditor considers that the proposed use of the site can be described as: “Residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments” (NEPM ASC).

In the context of the environmental value, *Human health*, future sensitive rectors at the site are not likely to be affected by migrating subsurface ground gases or soil vapours.

The site is not likely to affect the health of construction or maintenance workers.

The Auditor considers that in the context of the environmental value, *Human health*, the site is unlikely to be contaminated land.

10.2.3 Buildings and Structures

Taking into account Australian Standard (AS2159), *Piling – Design and Installation* (2009), the site the soil and groundwater at the site is considered unlikely to be corrosive or aggressive to subsurface structures.

Based on site inspections, the Auditor found no evidence of aggressive ground conditions or visible evidence of deteriorated buildings at or near the site.

The Auditor considers that in the context of the environmental value, *Buildings and Structures*, the site is unlikely to be contaminated land.

10.2.4 Aesthetics

No significant items of foreign matter, rubbish, staining, or odour were observed during soil sampling and during the Auditor's inspection. No potential ACM was observed or measured within any of the soil sampling locations across the site.

The Auditor considers that in the context of the environmental value, *Aesthetics*, the site is unlikely to be contaminated land.

10.3 Pathways of Exposure at the Site

As discussed in Section 8 above, and in the context of the environmental value *Human Health*, it is relevant to consider the source-pathway-receptor linkages for the site in assessing the likelihood of contamination of land. This is a requirement of Appendix B of the EPA PRSA guidelines which states that a PRSA report must include a "description and outline of the initial conceptual site model with consideration of potential source - receptor - pathway linkages."

The proposed use of the site will involve no scope for a yard, lawn, pond, swimming/spa pool, or home production of fruit or vegetables. The existing use of the site, the proposed development (construction) works and the ongoing occupation of the site do not involve direct contact with groundwater beneath the site or any extractive use of the groundwater.

Due to the presence of proposed durable physical barriers on the site, i.e. buildings fully occupying the footprint of the site (for the proposed use), and the lack of extractive uses of groundwater from beneath the site, the Auditor considers that the following pathways for exposure by humans to the identified CoPCs will be incomplete:

- Dermal contact with surface and sub-surface soils, or inhalation or ingestion of those soils;
- Dermal contact with, or consumption or ingestion, of extracted groundwater or surface water by humans;
- Consumption of home-grown vegetables by humans.

This incomplete pathway is an integral part of the assessment of a current or proposed land use, as discussed in Section 7.3 above and in EPA Publication 1992, *Guide to the Environment Reference Standard* (June 2021).

On this basis, whilst in the context of the environmental value, *Human health*, the site is unlikely to be contaminated land.

10.4 Likelihood of Groundwater Contamination

The environmental values of groundwater to be protected at the site are discussed in Section 7.6 of this PRSA report.

There is no evidence identified by the Auditor that indicates that groundwater may have been affected historically or currently by contamination of the site or another nearby site up-hydraulic gradient of the site.

The assessment of site history; site inspections; nearby site investigations by other auditors; the review of potential contaminants of concern, and the findings of the DSI (Peraco, 2021) together

indicate that the present site conditions are unlikely to pose a risk of chemical degradation to any buildings and other structures coming into contact with groundwater.

On this basis, the Auditor is satisfied that the condition of groundwater at the site will pose very low and acceptable risk to human health and the environment and will not affect the current and future uses of the site.

10.5 Imminent Environmental Hazard

The Auditor is not aware of any dangerous environmental hazard, hazardous substances or non-aqueous phases liquids, associated with the site.

10.6 Need for an Environmental Audit

In summary, this PRSA of the site at 51A Douglas Street, Noble Park has shown that the land is unlikely to be contaminated with respect to the following environmental values:

- *Land dependent ecosystems and species: highly modified ecosystems;*
- *Human Health;*
- *Buildings and Structures; and*
- *Aesthetics.*

The Auditor considers that the condition of groundwater at the site will pose a negligible risk to human health and the environment and will not affect the current and future uses of the site.

An environmental audit is considered not to be required as, in accordance with Division 2 of Part 8.3 of the Act and the EPA Publ'n 2021, *Guideline for Conducting Preliminary Risk Screen Assessments*, the condition of the site will not prevent or restrict the use or proposed land use. No further investigation of the environmental condition of the site is considered necessary.

11 Auditor's Conclusions

A Preliminary Risk Screen Assessment (PRSA) is an environmental assessment that reviews information regarding the past use and activities undertaken at a site to consider the possible presence of contaminated land.

Under section 204(2) of the *Environment Protection Act 2017* (the Act), the purpose of a preliminary risk screen assessment is to:

- assess the likelihood of the presence of contaminated land;
- determine if an environmental audit is required; and
- recommend a scope for the environmental audit, if an environmental audit is required.

The PRSA follows an investigation process consistent with that of the existing Preliminary Site Investigation (PSI) outlined in the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPM [ASC]).

Accordingly, and as required by EPA Publication 2021, this PRSA has assessed the likelihood of the presence of contaminated land and whether an environmental audit is required to determine if the potential contamination may prevent or restrict the use and/or the proposed use.

This PRSA of the site at 51A Douglas Street, Noble Park has shown that, in the context of proposed commercial/high density residential development, the land is unlikely to be contaminated with respect to the following environmental values:

- *Land dependent ecosystems and species: highly modified ecosystems;*
- *Human Health;*
- *Buildings and Structures; and*
- *Aesthetics.*

An environmental audit is considered not to be required as, in accordance with Division 2 of Part 8.3 of the Act and the EPA *Guideline for Conducting Preliminary Risk Screen Assessments*, the condition of the site will not prevent or restrict the use or proposed land use.

No further investigation of the site is warranted.

12 Limitations

This PRSA report has been prepared in accordance with section 204(2) of the *Environment Protection Act 2017*. The findings of this report are based on the Scope of Work described Sections 1 and 2 above.

Salient GeoEnvironmental Consulting Pty Ltd (Salient) performed the services in a manner consistent with the normal level of care and expertise exercised by members of the environmental consulting profession, in accordance with normal prudent practice and by reference to applicable EPA and industry standards, guidelines and assessment criteria in existence at the date of issue of this report, and any previous site investigation and assessment reports referred to in this report. No warranties, expressed or implied, are made.

This report was prepared in August and September 2023 and is based on the conditions encountered and information reviewed at the time of preparation. Salient disclaims responsibility for any changes that may have occurred after this time.

This report should be read in full and no excerpts are to be taken as representative of the whole report. No responsibility is accepted by Salient for use of any part of this report in any other context.

It is acknowledged that the audit document and report may be used by Flametree Property Pty Ltd, Cedar Wood Properties Ltd, the City of Greater Dandenong and the Environment Protection Authority (Victoria) in reaching their conclusions about the site. The scope of work performed in connection with the audit review may not be appropriate to satisfy the needs of any other person.

Except to the extent that Salient has agreed otherwise with the Client in the Scope of Work or the Contract, this report:

a) has been prepared and is intended only for the use of the Client must not to be relied upon or used by any other party;

b) has not been prepared nor is intended for the purpose of advertising, sales, promoting or endorsing any Client interests including raising investment capital, recommending investment decisions, or other publicity purposes;

c) does not purport to recommend or induce a decision to make (or not make) any purchase, disposal, investment, divestment, financial commitment or otherwise in or in relation to the site.

The advice provided herein relates only to the audit of soil, surface water, soil gas and groundwater conditions at the development property located at 51A Douglas Street, Noble Park, Victoria. The advice must be reviewed by a competent engineer or scientist, experienced in assessment of contaminated environments, before being used for any other purpose. Salient accepts no responsibility for other use of the data or opinion contained within.

It should be noted that because of the inherent uncertainties in sub-surface evaluations, changed or unanticipated sub-surface conditions may occur that could affect total project cost and/or execution. Salient does not accept responsibility for the consequences of significant variances in the conditions.

All conclusions and recommendations made in the report are the professional opinions of the Salient personnel involved with the project and, while normal checking of the accuracy of data has been conducted, Salient assumes no responsibility or liability for errors in data obtained from regulatory agencies or any other external sources, nor from occurrences outside the scope of this project.

An understanding of the site conditions depends on the integration of many pieces of information, some regional, some site specific, some structure-specific and some experienced-based. Hence this report should not be altered, amended or abbreviated, issued in part or issued incomplete in any way without prior checking and approval by Salient. Salient accepts no responsibility for any circumstances which arise from the issue of a report which has been modified in any way as outlined above.

This report does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners. Opinions and judgements expressed herein, which are based on Salient's understanding and interpretation of current regulatory standards, should not be construed as legal opinions.

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